

# THE CAVALRY JOURNAL

*Feb*



Improvised U. S. Cavalry passes through an Italian town on way to front.

JANUARY-FEBRUARY, 1944



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Organized November 9, 1885

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# Beyond the Jeep-Line

*"A Motorized Vehicle  
is no better than its  
terrain . . . a horse is."*



Leading a pack horse with mounted machine gun, this cavalry reconnaissance trooper with the 3d Infantry Division rides his Italian mount out of a stream crossing.



Above: A lone trooper ascends a steep hill "beyond the jeep-line." His Italian horse is accustomed to this terrain.



Left: A machine gun squad of a mounted reconnaissance unit crosses a stream near the 3d Infantry Division front in the Appenines in Italy. The basic ammunition load has recently been increased to 10,000 rounds in view of the large amount of front-line fighting in which these troops are engaged.



# in Italy

**A**LONG the mountainous Fifth Army front in Italy, where men deal with realities, not theory, mounted reconnaissance troops of the 3d Infantry Division, under the direction of cavalrymen, have made a dramatic and valuable contribution to the drive on Rome.

Since Salerno this improvised cavalry, ranging day and night through the wild Appenines in front of the infantry, has maintained liaison, patrolled, fought, gotten information, taken prisoners. More than 150 horses have been engaged in these operations: As many soldiers have been given the *rudiments* of cavalry training. In addition, several hundred mules are being used daily to pack food and ammunition high up into the mountains. One complete organization of pack artillery fights regularly on the division front.

More horses and cavalrymen are joining other units of the Fifth Army. The explanation is simple: *A motorized vehicle is no better than its terrain; a horse is.*

The Fifth Army is pushing over some of the toughest fighting country of the war. For months, line troops have been fighting thousands of feet up steep, forested slopes, sometimes in snow. Weeks of continual rains have flooded all forward areas, turned mountain streams into muddy torrents. Retreating Germans have systematically mined roads, blown bridges.

Recently, bombers were used to drop cans of food to outlying units. These units were not cut off or lost. They constituted an active section of the Fifth Army front in Italy. This is cavalry country.

Animals were used for the first time in European operations in Tunisia, where donkey pack trains were hastily assembled to carry food to troops isolated in rocky hills. In Sicily, Seventh Army troops fought in mountainous regions, far above the "jeep line." To solve its supply problem, one unit organized a pack outfit of four platoons with 168 mules and burros. Immediately, signal outfits borrowed so many animals out of the service trains to pack wire and radios up mountain trails, that a fifth communications platoon of pack mules was added.

At the conclusion of the Sicilian campaign, operations officers of the 3d Infantry Division looked at maps of the Appenines and reasoned: "We'll have to have animals for supplies, why not mounted reconnaissance over the same terrain?"

---

by *Technical Sergeant Robert Geake*

Sergeant-reporter, Fifth Army, Italy.

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A mortar squad of the 3d Infantry Division's mounted reconnaissance troop crosses a stream near the Fifth Army front in Italy. The rear horse is shown with gun pack and 24 rounds of 60mm ammunition. The ammunition pack horse (fourth from front) is carrying 36 rounds. Mortar can be unloaded, set down and fired in 20 seconds.

Nothing could have been more logical to the 3d Division's commanding general, a former cavalry officer. He provided for the immediate organization of a mounted reconnaissance troop and pack train. To head both activities, the general sent to Algiers for Captain Raymond F. Baker, a cavalryman of 20 years experience who had served with the 3d, 5th and 102d Cavalry Regiments.

Captain Baker's first job was to get some cavalry to organize. He issued a call for both officer and enlisted volunteers and guaranteed that "everyone would earn his spurs in a shooting gallery." From three infantry regiments and artillery, engineer, signal and medical units came four times as many volunteers as were needed. Most of them were homesick farmers and ranchmen. Captain Baker admits that in the eliminations he was inclined to favor men who had ridden a horse!

The animals were assembled on a strictly catch-as-catch-can basis. The majority were Italian army horses that were requisitioned. Many privately owned animals were purchased outright by division headquarters or through AMG.

In similar fashion, the organization assembled its equipment. All of it was Italian except a sufficient





Above: Italian horses of the mounted reconnaissance troop are shown at the picket line in a Fifth Army bivouac area near the front lines. Straw is trucked in from surrounding farms to protect the horses' feet, since almost daily rains keep corrals knee-deep in mud.

Left: A member of the mounted reconnaissance troop makes a last minute adjustment on a machine gun pack as his unit prepares to go on a scouting mission. In the rugged terrain of the Appenine Mountains, horses are a recognized necessity.



number of Phillips Cargo Packs, which were requisitioned through Army headquarters and flown from North Africa. Weapons and ammunition carriers for both light machine guns and mortars were specially designed by the reconnaissance troops and built into the Phillips packs.

Italian saddles—"a light pack saddle with a seat"—were used throughout. They have proved generally inferior to American saddles in design and quality. The more experienced horsemen complain that they sit too high on the animal and that having the cinch in the middle of the saddle is a big disadvantage. Italian pack saddles are smaller and lighter than the Phillips pack and specially designed for Italian mules, which are "smaller, long-barrelled critters" in comparison with the Missouri mule. Consequently, to obtain a greater

pay load, these pack saddles have been used on mules for both the service pack train, and an artillery pack unit which was added later.

The men were organized into reconnaissance and heavy weapons platoons, armed with carbines and given as much basic cavalry and reconnaissance instruction as infantrymen could take in one month. Fortunately for the "greenhorns," the horses proved easy to handle. Most of them had worked in mountains all their lives in the Italian army and were so trail-bound that it was difficult to get them out of line for drill formations. The new men picked up reining and riding tricks quickly—often from the horses!

In September, the Fifth Army's mounted troops set out for Italy. In the hold of one LST were 355 head of animals.

They reached the Salerno beachhead one afternoon and by midnight had unloaded. They were transported inland by a shuttle of 80 trucks. Pack artillery went into action at dawn. The following morning, reconnaissance platoons started out on their first mission over a road that had not been cleared of mines. The officers and men figure the mines are still on it.



(EDITOR'S NOTE: One cavalry colonel reported from Sicily that *not a single horse or mule in his unit was lost from mines throughout the Sicilian campaign.* "A horse or mule," he said, "will not step on a mine.")

Since the organization was essentially an experiment, it was first of all flexible. After a continuous month on trail, through and beyond "no man's land," the outfit was completely reorganized in the light of invaluable lessons learned the hard way.

It had been found that individual groups, such as platoons, were top-heavy. Three men had been doing work which two men could do much better. The unit was consequently split into three separate organizations all under one squadron command and directly under division control. These organizations were the pack howitzer unit, the mule pack train, and the provisional reconnaissance troop.

Formed from all artillery battalions in the 3d Division, the howitzer unit includes standard 75 artillery sections and a communications section. As the Fifth Army moved up the Appenine ranges, an increasing emphasis was placed on mountain artillery. It was cavalry country, and the Fifth "needed guns where only mules could put 'em."

From a "mule head," established at the end of the jeep trails, the mule pack train continues to service various forward units. Platoons of 26 mules, with drivers and packers, are assigned to units down to battalions as needed. Pack mules have on occasion been attached to the horse reconnaissance for special missions.

The reconnaissance unit was streamlined into smaller, more efficient platoons. Since the men were doing as much frontline fighting as reconnaissance, they were re-armed with '03's. Basic ammunition loads, always the biggest problem of the outfit, were increased to 10,000 rounds per machine gun, 100 rounds per mortar. A "horse pool" was set up to rest the animals on a ro-

tation system and to take care of the sick, lame, etc.

The officers and men of this mounted reconnaissance troop in Italy never had a good look at friendly territory from the time they landed until they pulled back for a rest late in November. Week after week, they were out on trail in the mountains through rain and mud and bitter weather—infiltrating into German lines, identifying units, steering the infantry. During one period, they ate nothing but C and U rations for an entire month. Liaison patrols of only five or six men were often away from the main unit for 15 hours or longer.

On one occasion, 76 mounted troopers on a hill were attacked by over 300 Germans. The infantrymen, turned horsemen, picketed their mounts and went back into line action. Six hours later they forced the withdrawal of the superior forces which left behind 13 prisoners, three wounded and many dead. From under cover, 19 dead were counted on one section of the hill.

Later, 80 men of the reconnaissance troop attacked a hill where German troops were dug in with machine guns. After a five hour scrap, they killed 11 Nazis and captured the position and one prisoner. Another time, 19 cavalymen, armed with carbines and one mortar, knocked out two enemy machine gun nests and killed 7 Germans in the process.

If ever a unit was welded together under fire, this improvised cavalry is it. Morale is excellent. And there will be more fire and more welding. Further reorganization will take place as new situations arise. Some day the outfit hopes to have a T/O.

As a flexible experiment in horse cavalry tactics, the Fifth Army's mounted reconnaissance troops have definitely proved that they have a place in today's war.

As one ranking officer summed it up: "We're fighting in cavalry country, and in cavalry country you need cavalry. They'll never change that!"

This GI blacksmith shop behind the Fifth Army front was set up to care for the hundreds of horses and mules being used in the drive on Rome. Mules are used in pack trains to get food and supplies up to frontline troops.







A British cavalry patrol reconnoiters a mountain area in the Appenines.

## British Cavalrymen Re-Mount

*Back to their old love, members of a now-mechanized British cavalry regiment use horses for reconnaissance in the Italian mountains.*

*Because of the hilly nature of the surrounding country, wheeled or tracked vehicles find the steep, narrow, twisting lanes impassable. The British officers have borrowed Italian cavalry mounts. Nearly all of the troopers, being formerly cavalrymen, are at home on horseback. November, 1943.*

From an advantageous crest, this reconnaissance patrol views an enemy position.







Senior member of the naval party, setting off for a ride through the mountains, uses the only proper leather saddle available for the party's ride.



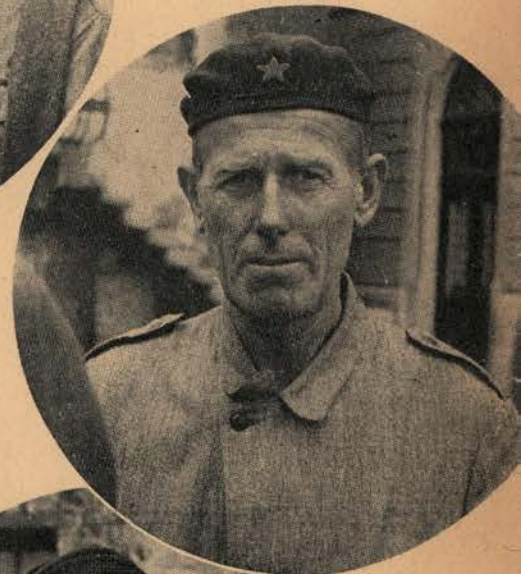
*Left: Zaga, a typical Serbian girl of the Partisan Army, has a reputation as a sniper in the mountains.*

*Below: Two pictures of typical members of the Yugoslav Partisan Army.*

## Yugoslav Partisans Fight Hitler

*Not long ago, a small party of British sailors spent three days in a Dalmatian port, where they lived as guests of the Yugoslav Partisan Party. The Partisans are in control of nearly all the coastline of Dalmatia. The Germans are powerful only in the larger towns, such as Split, Dubrovnik, and Zara. The naval party were lent horses and taken for a ride through the mountain villages, where they were given a great welcome by the villagers.*

*Some 25 per cent of the Partisan Army consists of women who act as snipers in the mountains, and perform acts of sabotage. Note that the men pictured are all beyond the normal army age. Yugoslavia's army fell in June, 1941, and most men of army age have since been interned, killed or transported to Germany for slave labor. The determination and character in the faces of those still fighting is self-evident.*



*Lower right: A junior member of the party of British sailors starts on his tour through the Dalmatian Mountains.  
Below: A partisan salutes with upraised fist.*



*Zina, famed throughout Croatia for acts of sabotage against the enemy, is an expert grenade thrower.*





# The Last Days in Tunisia

by Lieutenant Colonel Charles J. Hoy\*

IN northern Tunisia, the first nine days of May 1943 presented some very interesting tactical examples of coordinated employment of all arms except horse cavalry. On May 1st, the general situation was as follows:

The American II Corps, composed of three infantry divisions and one armored division with attached units, had completed its march across the lines of communication of the British First Army.

With the infantry divisions shuttling, and the armored division transporting its tanks, this night march of 150 miles was one of the highlights of the entire campaign. The British Traffic Control Section deserves much credit for a job well done. Timing and control were vital. There were only a few roads. Three great columns had had to cross—the supply column of the British First Army running east and west; that of the American II Corps running north; and the reinforcing divisions from the British Eighth Army to the British First Army moving diagonally north to northwest, then north-northeast. The entire movement was made in one week. (See Map 1.)

*If the II Corps had had a horse cavalry division, the latter could have made the march with ease. In the 1940 Louisiana maneuvers, the 1st Cavalry Division marched 75 miles in 24 hours and fought several engagements during that period.*

## NIGHT MARCH

The 81st Reconnaissance Battalion, after leading the breakthrough at El Guettar and making first contact with the British Eighth Army near Gabes, was assembled in the vicinity of Faïd Pass. Joining up with the British, the unit marched back through Gafsa to Faïd, east through Faïd Pass to Kairouan, and then farther east to meet again the Eighth Army at Sousse.

When the 81st was withdrawn from the Kairouan-Sousse area to Faïd, preparatory to moving north with the II Corps, it was given a few days in which to do some much needed maintenance work. If replacements arrived in time, the battalion was to take its rightful place in the 1st Armored Division, then being assembled for use as a unit for the first time in the Tunisian Campaign. The contemplated reunion was a great boost to morale. The 1st Armored Division had not been kept together in the past. The tactical situation had not permitted it. But things were to be different now. The 1st Armored Division was to be back intact, and all units were eager to deliver a "Sunday Punch."

During the long night march, the battalion moved

just behind Division Headquarters at the head of the armored division. The march was to have been made in two jumps. The first—to the outskirts of Le Kef—was made without incident; but there it was learned from the division commander that, because of a necessary change in traffic control, the battalion would have to move on to Ain-Draham that night.

The moon was up, and the battalion started to roll. With 209 vehicles, it cleared Le Kef in 35 minutes! The British traffic control officer at Le Kef could not believe his figures. He called ahead to Souk el Arba, and the control agency there cleared the battalion in 38 minutes. Camp was made at Ain-Draham before dawn.

## POSITION AND MISSION

Three days later, the battalion moved up to the Mouse Trap to fill the gap between the 1st Infantry Division on its left and the British 78th Division on its right. As it entered the valley, it came under long-range fire, but continued north for about 4,000 yards before contact was gained, after which it worked to the flanks to establish OP's.

The Mouse Trap is a fertile valley about 5 miles long and 3 miles wide. It is very flat and cut by branches of the Tine Wadi. (See map No. 2, page 11.) The wheat and poppy fields afforded excellent concealment for jeeps. A day later, an armored infantry unit of the 1st Armored Division moved into the hills to the right, between the battalion and the 78th Division.

The mission of the 81st was to develop the situation in its particular zone and then to act aggressively. That meant that the reconnaissance battalion was not to assault any position but, at the same time, was to take the initiative away from the enemy. It had to out-patrol the enemy day and night, or it would never be able to maintain its OP's. The OP's had not been gained by stealth. The enemy had seen them move in. The entire corps, however, was on the offensive.

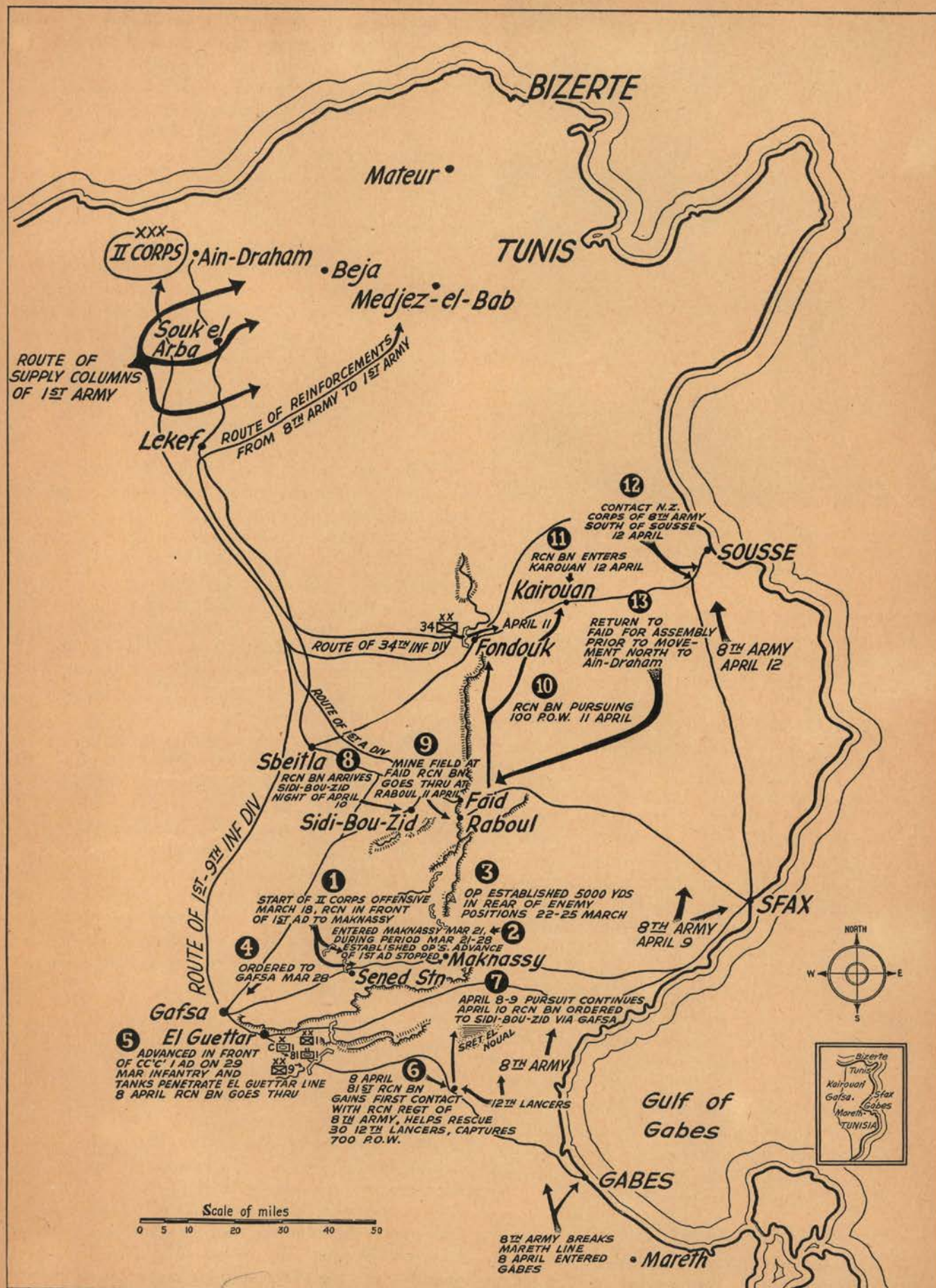
## AN AMUSING INCIDENT

The enemy held the Anserine Farm, and the 81st had an OP within 2,000 yards of it. (This same OP was within 500 yards of enemy-held Djebel Badgar.) In general, the enemy held the two hill ranges on the battalion's flanks and the one to the north. The gap in front was held by antitank guns—exact location, unknown. The German would not fire until it was absolutely necessary. He knew he was being watched through field glasses. Artillery observers directed fire concentrations at even suspected locations.

An amusing incident occurred one day in the Mouse

\*Staff Faculty, The Cavalry School. Formerly Commander, 81st Reconnaissance Battalion, Tunisia.





Map No. 1—Allied positions, March 21-April 12, and subsequent routes of night march.





*From "Signal Corps Training Film."*

A leading car reconnoiters a crossroads in Tunisia before the second car advances. Note concealment by use of shadows and branches.

Trap. One of the 1st Armored Division half-track ambulances came racing up to the crossroads just south of the Anserine Farm, and the driver, with the "valor of ignorance," instead of turning left, kept on straight toward the farm. This road had been used only as far as the crossroads. Dust generally would bring fire, but it was long-range and very inaccurate—never closer than 200 yards to a jeep. When fire got that close the driver would detour through the wheat and poppy fields.

As the ambulance rolled on toward the farm, observers kept field glasses on it and held their breath. If the German fired, his exact location would be known. The ambulance stopped at the farmhouse, turned quickly around, and came out a lot faster than it went in. The observers stopped the ambulance, and when the medical officer could talk, he informed them that he thought he had been moving to the rear instead of toward the front; that, as his vehicle approached the farmhouse, a German soldier had stood up beside a well camouflaged antitank gun and asked in English if there were any wounded in the ambulance. The doctor couldn't recall his answer, but the driver had turned the ambulance around and wheeled it away.

In addition to obeying the Geneva convention, the German apparently knew that if he exposed his gun by firing at anything less than a tank he would catch one hell of an artillery concentration!

#### PATROLS AND OP'S

Patrolling was continuous day and night. One night a reconnaissance patrol, commanded by Lieutenant Jewett Dix, reconnoitered the North Tine Wadi, and

succeeded in getting behind the bridge. It was learned that the bridge was defended, and the wadi unfordable. This was important information, since it meant that as soon as Jerry was driven back across the bridge, he would destroy it, with the consequence that Allied armor would be stopped at the demolished bridge. The action of this patrol also disclosed that antitank guns on the high ground, 400 yards north of the bridge, would command the wadi.

In connection with patrolling, it should be emphasized that night patrols must be thoroughly coordinated and planned, and that routes to and from the objective for the night must be assigned and followed. If two or more night patrols are to operate in a zone, then extreme care must be taken to see that their routes do not cross. Otherwise, if two patrols bump into each other, the chances are that they will start shooting. This is true, especially when two adjacent units send out night patrols. Higher commanders, therefore, must assign night patrolling areas. Under no circumstances should patrols from one unit go into another unit's area.

By the same token, unit commanders must closely coordinate their night patrols and specify or provide some means of identification.

One way to check and identify the opposing unit is to use a flashlight. This method, employed by patrols, appeared to be satisfactory. The challenging signal, for a particular night was a flashlight dot-dash; and the answering signal, two dots. From cover, the man challenging, flashed his signal. If the opposing unit was friendly, the proper answer signal was given. That stopped the fight. When no answering signal was given the fight continued.

Throughout operations of the 81st in Tunisia, it was necessary to hold OP's by force. On one occasion, the enemy attempted to take the OP close to Djebel Badgar with a platoon of infantry. The lieutenant on the OP saw the Germans coming and called over his radio to alert the two light tanks that were back under cover near a farmhouse some 500 yards from him. Guided out by radio, the tanks came up and caught Jerry as he was approaching across an open farm yard. Attacking mainly with canister, the crews of those tanks captured seven of the platoon and killed or drove back the rest. That OP was never bothered again.

#### BEGINNING OF THE OFFENSIVE

The II Corps plan in the Mouse Trap Valley, after reconnaissance had developed the situation, was for the infantry to drive the enemy back so that armored troops could seize the high ground north of the wadi. The infantry, after several days and nights of hard, bloody fighting in the hills on the right and left, finally drove the Germans back inch by inch.

Casualties were high. Artillery built roads to follow and support the infantry. Each little hill that had to be taken was bloodier than the last. The enemy had spent months preparing these positions, and when artillery or air pounded a position in preparation for the infantry



attack, Jerry stayed in his dugout until the artillery fire was raised. Then he remanned his guns and caught the infantry with withering fire in those last few hundred yards.

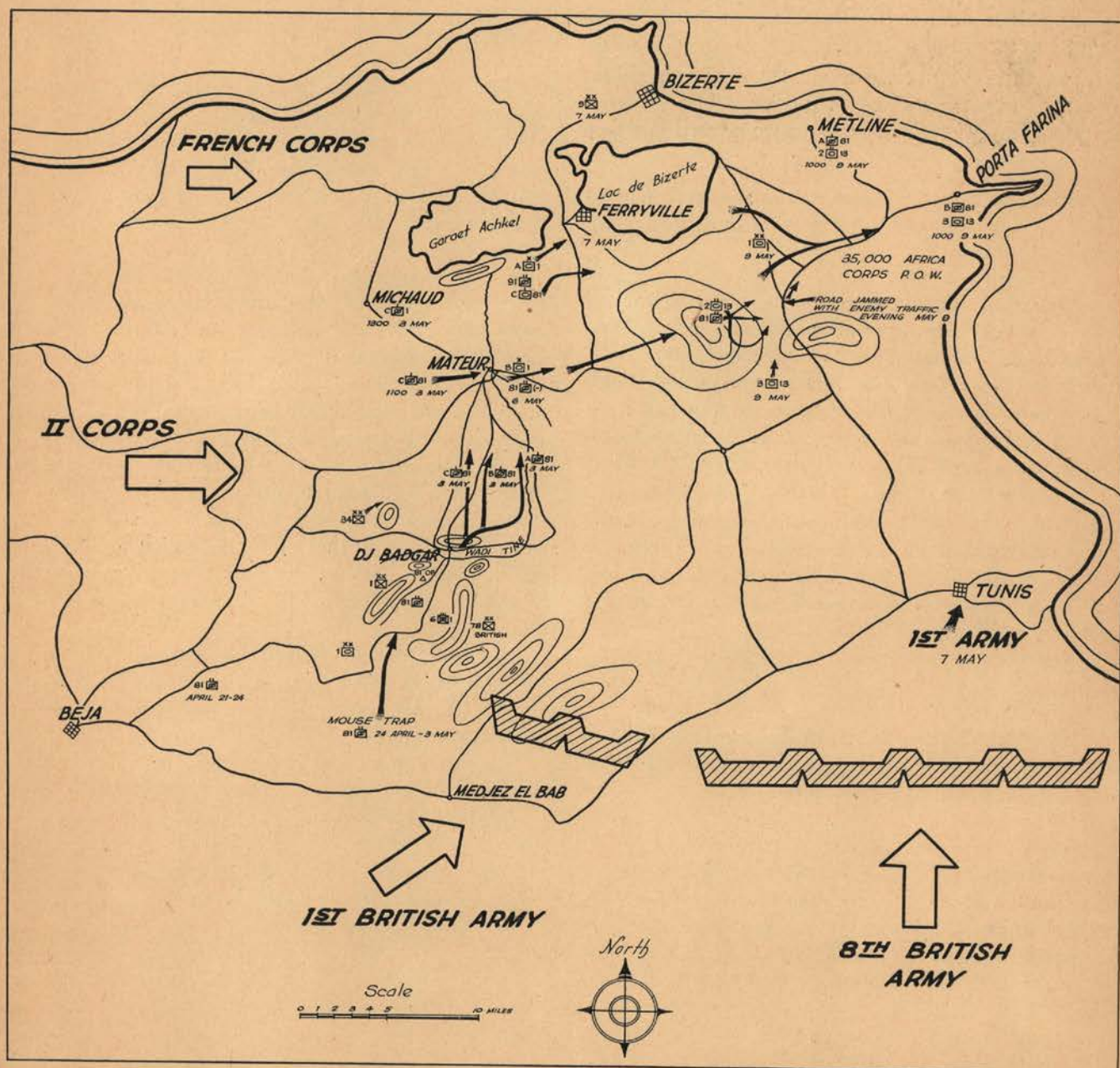
Each successive assault found the infantry moving closer to its own artillery fire. It is cheaper to take one per cent casualties from your own artillery than ten per cent from the enemy. In one attack, an infantry battalion, knowing that there were so many battalion salvos to be fired, were in on the enemy position before the clouds of dust and smoke caused by the last salvo had cleared. They were within 50 yards of their own artillery fire when it was lifted. The crucial period in the attack begins when the assaulting force closes with the enemy following the lifting of artillery supporting fire. The shorter this period is, the less the casualties.

Finally, on May 3rd, the infantry broke the enemy's

position. The 1st Armored Division was alerted to go through the gap towards Mateur and exploit the infantry's success. The 81st Reconnaissance Battalion spearheaded that breakthrough. The wadi was forded to the north in rear of Djebel Badgar, and the pursuit was on.

### THE ADVANCE

Shortly after dawn I saw one of the 81st scout cars halted on a trail. Going forward in a jeep, I pulled up alongside and started to ask why it was halted, but didn't need to. Under the scout car's front wheel was a wire tied to a stake just a few inches beyond my jeep on the right. The wire running under the front wheels of my jeep ended in an S-mine. Since there was no tension on the wire, two vehicles had crossed it without causing the mine to go off. Jerry had been careless.



Map No. 2—Allied positions during final push—April 21-May 9.



He had been pushed for time by the pursuing infantry, and was getting jittery. He had to be hit while he was reeling.

Soon after reaching the outskirts of Mateur, the battalion found the western bridge blown. Luckily the stream was fordable nearby. The town was entered in the face of light resistance, and about 100 prisoners were taken. Company C moved northwest and Company A moved east.

The eastern bridge was blown as Lieutenant Truman Boyd's platoon approached it. One of the German engineers who blew the bridge was killed; the other, captured. Lieutenant Boyd found a fordable place and crossed his platoon under fire of enemy guns. Casualties were heavy. Jerry, knowing that ford was the only place where the wadi could be crossed had set his guns on the high ground 2,000 yards to the east. Captain Roy Manly, commanding Company A, brought up his three assault guns and assisted Boyd's platoon in crossing. Once across, Boyd pushed on to the high ground 3 miles east of Mateur.

Our engineers were close on our reconnaissance heels and started to work at once on putting a bridge across the wadi. Twenty-four hours later we crossed our first medium tank. That fact is significant.

*A horse cavalry division would not have had to change gaits in crossing that wadi at any place along the 3-mile front.*

On May 6th, from the high ground initially reached by Lieutenant Boyd's platoon, an assault was launched that broke the enemy's Ferryville-Mateur line. This action was a perfectly coordinated tank-artillery-tank destroyer attack. With the right flank protected by a smoke concentration, the leading wave of tanks moved in under the supporting artillery fire of 3 battalions.

The 81st Reconnaissance Battalion followed to mop up after the tanks had passed over the position. Even though the tanks drove over the enemy position, many of the Germans lay "doggo" in their dugouts and had to be cleaned out by dismounted personnel from the reconnaissance battalion.

*Horse cavalry can follow tanks in a breakthrough and perform this mission.*

The tank attack moved on until after dark and the enemy position had been pierced in the south at Mateur. The pursuit was again on.

#### PURSUIT

On the morning of May 7th, Combat Command A pierced the enemy position on the north at Ferryville. For the first time in five months I saw 88mm guns in action. I had heard them, but had never before seen them until after they had been damaged and abandoned. That was because they were so well camouflaged. Now, as the enemy was being hard pressed, he did not have time to conceal them properly—and the 88mm is not an easy gun to conceal. A gun seen is a



An armored car advances on the road to Mateur. In the foreground is a wrecked German Mark VI tank.

gun lost. I do not know how many guns the tanks destroyed, but there were many.

When the enemy is cracked and being pursued relentlessly, many ridiculous things happen, such as scout cars overrunning 88mm guns and chasing tanks. Of course, this only happens in a pursuit against a reeling enemy. Pursuit, however, is a vital part of war.

One reconnaissance platoon leader came upon an 88mm sticking out from behind a house, drove around to the rear of it, and machine-gunned the crew. A supporting 88mm across the road was destroyed by its own crew and abandoned. This cracking-up of the enemy did not come about because tanks or reconnaissance units had arrived on the scene. Far from it. It was the cumulative result of a terrific day-and-night pounding by artillery; a dogged pursuit by infantry that never let him rest—but drove him constantly back; a steady pounding by the air forces which at that time had air supremacy; and the relentless drive by armor, exploiting the success of the infantry-tank-artillery team.

On the afternoon of May 8th, Combat Command B of the 1st Armored Division, having been driven off the roads by 88mm's, attempted to by-pass by moving north into the mountains.

From the high ground overlooking the valley, a wonderful sight came into view. In the valley below, over a thousand German vehicles, moving almost bumper to bumper, were trying to get to the beaches. There was also a German airfield with several planes on it.

The vehicles started picking their way down slowly, but each trail led to a bottleneck or a dead end. *Getting down that hill was a slow process. Definitely it was not mechanized terrain.* Each bottleneck was covered by enemy antitank guns, and the unit had outstripped its artillery. The colonel in command put his tanks and tank destroyers in hull defilade, and the battalion's assault guns were put under the command of



one of the artillery observers. Those assault gun men had a field day.

The target was reported back, but no air was sent to bomb it—and rightly so. Air was flying over to keep the enemy, who had reached the beaches, from evacuating. It was not feasible to divert any air for this target. One thing a reconnaissance leader must remember is that, although he sees much of the big picture, he does not see it all and therefore he should not expect to have the artillery shell, or air bomb, every target that he reports. He is out there to give information, not to employ the command.

*Horse cavalry could have come down off that plateau without any difficulty as far as the terrain was concerned. True, it would have suffered casualties*



Wreckages of German Mark VI tanks put out of battle by Allied bombers. Mateur, 4/26/43.

*from enemy fire, but an aggressive cavalry division could have played havoc with the enemy.*

Tanks and other vehicles made their way down laboriously during the early dawn after they had been resupplied with gas and ammunition.

After a short tank fight south of Porta Farino, the 1st Armored Division found that it had taken over 35,000 German prisoners. Actually, it is better to say that the Americans had 35,000 prisoners, because they were the cumulative result of the coordinated effort of all arms present on the battlefield.

#### CONCLUSION

The greatest proponent of large horse cavalry units today is the battlewise doughboy. He sees crystal clear the need of units with *battlefield mobility* to exploit his successes. He knows that it is a tough, bloody fight to drive a determined enemy out of his strong defensive positions. With the aid of his supporting arms he can do it. He also knows that after he drives the enemy out

of a position, the withdrawing enemy is vulnerable. He does not want to see the enemy get away. He wants his hard-earned success fully exploited.

The doughboy is aware of the fact that when the enemy uses mines and blows bridges to stop the tanks, he is thereby enabled to withdraw much of his force to a new stronghold, and the bloody infantry fight starts again. The doughboy is sure that if he had horse cavalry, the tank-cavalry-air team really would hit "pay dirt" in pursuit and exploitation.

The terrifying effect produced by charging Cossacks and Russian tanks is readily understood. We were on the receiving end of the tank attack at Kasserine and Faïd Pass. The Germans used tanks to exploit. Had they used horse cavalry in conjunction with those tanks, few, if any of us, would have escaped. Although the country was bare and rocky—very similar to the Fort Bliss area—and offered no concealment and very little cover, it was possible to keep platoons behind and on the flanks of the enemy tanks. This was because the tank is relatively blind. One reconnaissance lieutenant pulled his platoon in behind some "boondocks" and, undetected, watched an entire battalion of tanks go through. Later, he marched past them on their flank and reported their location.

*Horse cavalry would have discovered the platoon, and then the tanks would have destroyed it.*

This article has made no mention of horse cavalry for use with reconnaissance units. Reconnaissance by horse cavalry units is *unquestionably mandatory* in certain terrain, but *there is a bigger job to be done by horse cavalry. This big job can be done only with horse cavalry divisions, trained primarily for combat to support and exploit infantry successes.*



The speed of the Allied advance to Tunis was so rapid that the Germans had time only to run vehicles and Mark VI tanks to one place and apply the torch. These German prime movers were put in this position and burned.





*Left:* The caption for this picture, received through a neutral source, says it shows "Heavy German anti-aircraft battery in action against attacking American bombers in the Apennine mountains." Note terrain.

## German Defense in Italy

Press Assn.

*Right:* The retreating Germans are now using a special machine for destroying railway tracks in Italy. This machine which weighs about ten tons has a large hook at the rear. While the machine is hauled along the lines, the hook rides under the sleepers and rips them up. At the same time, two-pound charges are dropped down a runway on either side of the machine onto the rails, where they settle with the aid of a clip and explode some seconds later.

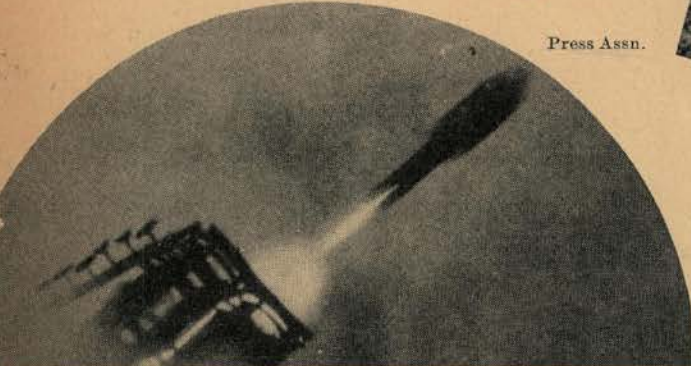
*Below:* According to the German caption on this photo, this is the first of six rockets being fired from one of Germany's new rocket guns.

Press Assn.



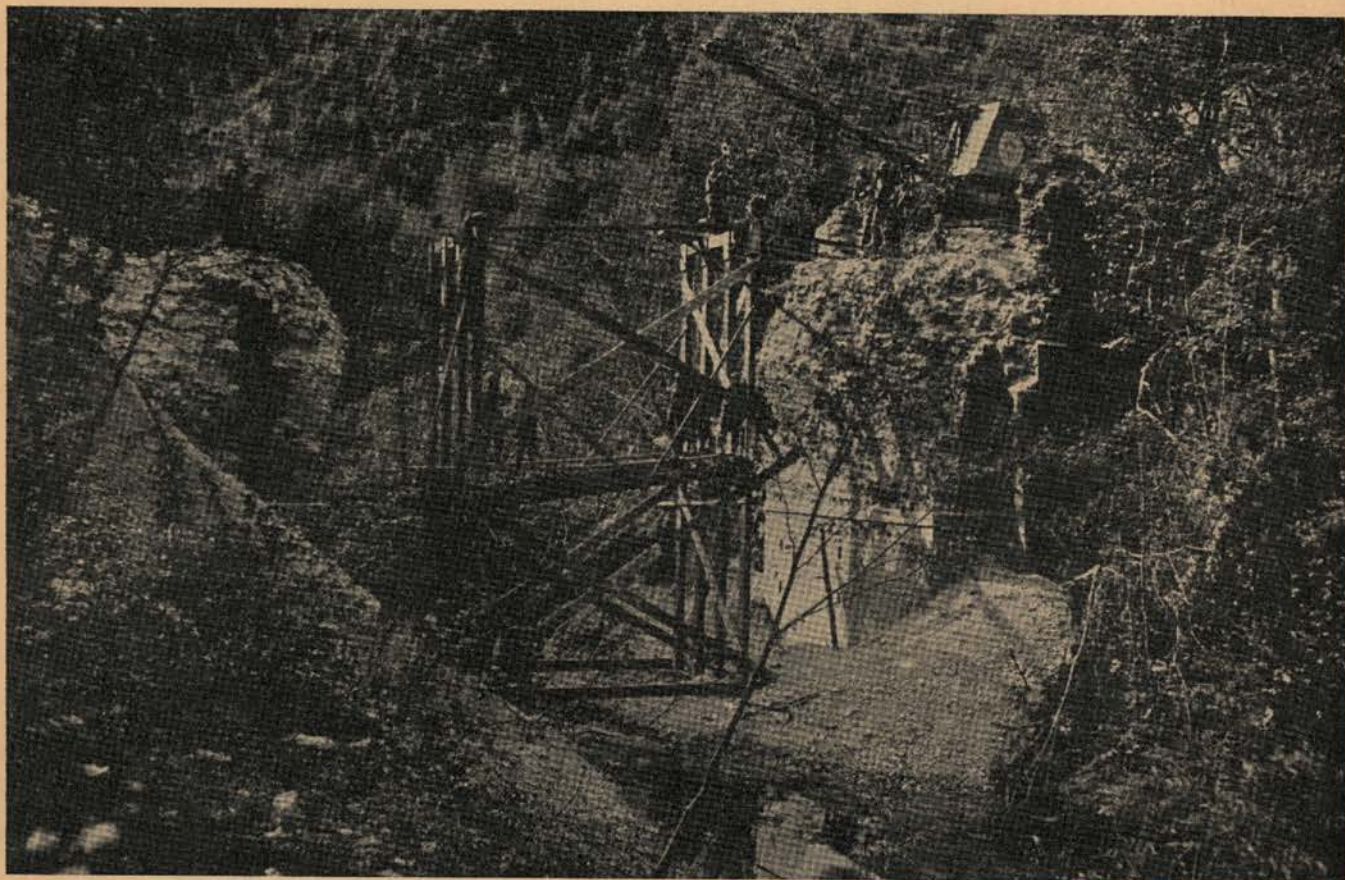
Wide World

*Below:* Nazi gun crewmen rush forward to reload after a rocket gun fired. All six rockets have been discharged. In left foreground is a rocket gun awaiting reloading.



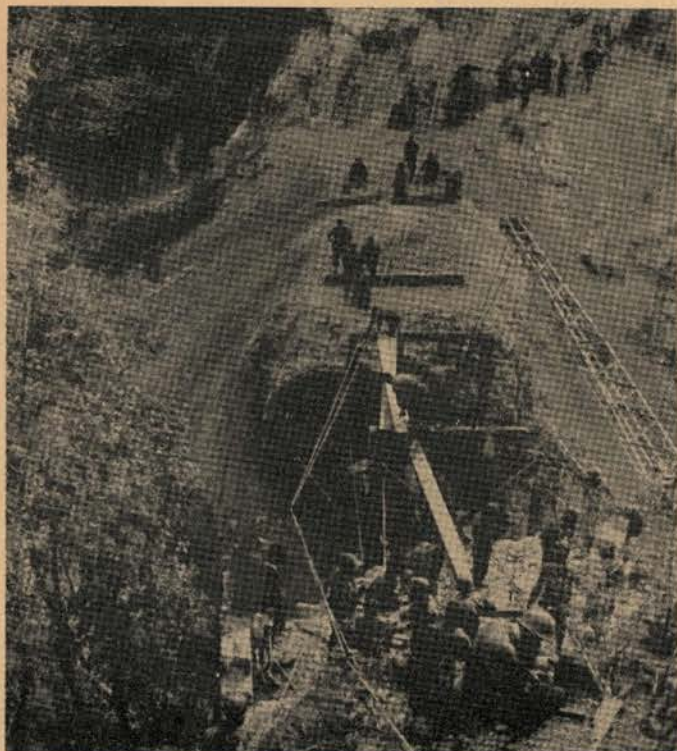


# U. S. Engineers follow German Demolitions



When the Nazis retreat they use every means they know to hamper Allied advance. Blowing up bridges is one method.

These pictures show what happened when the U. S. Army Engineers tackled the job of replacing one in Italy.



Top picture gives an idea of the gap to be crossed. Here the uprights are in place and the spans are being laid.



And this is the completed bridge, only 10 hours after the U. S. Army Engineers went to work on the tough job.

Army Signal Corps Photos



# The

*The author, a former captain in the Russian Imperial Army, is an expert military analyst of Red Army tactics and matériel.*

The horse-plus-armor team pursues fleeing Germans.

*by Nicholas Corotneff*

ON November 19, 1942, two powerful Russian striking forces simultaneously broke through the German defenses to the north and to the south of Stalingrad, and started on their wide encircling movement, which four days later formed a ring around the German Sixth Army. This date will go down into history as the turning point of the Russian-German war. But it also has another significance. On this day a new and important tactical development manifested itself for the first time. A new and powerful combat team emerged with startling unexpectedness, and crowned its birthday with one of the most significant and far-reaching successes in this gigantic campaign. For the first time, independent tank and cavalry formations were welded into one unified striking force, which replaced the motorized infantry.

#### NEW TACTICAL DEVELOPMENTS

From the very beginning, the Second World War has presented a series of new and often spectacular tactical developments. True, some of them were startling only because the trouble was not taken to foresee them. Some of them proved to be not as revolutionary as they at first seemed, and their antidotes appeared on the scene much more quickly and in greater force than many expected. Such is the famous tank-dive bomber team, which for a time reigned supreme and seemed to be the strategic weapon of this war. Its decadence has been completely proven in the breakdown of the German 1943 summer offensive in Russia.

There was at one time almost a complete consensus of opinion that the best antitank weapon was the tank. That is now disproved. The real solution proved to be

an antitank area, a huge infantry-artillery team, with the tanks used largely for administering the *coup de grace* to the exhausted attacker.

In the light of these important and swift changes, it is only natural if nowadays there is an inclination to be wary, and to accept any new and startlingly unexpected tactical development with at least a grain of salt. No wonder, therefore, this new tank-cavalry combat team met a cautious and, in some quarters, a frankly skeptical reception.

More than a year has now passed since its birth, and in the course of this time the new tactical combination again and again has proved its remarkable efficiency and striking power under various sets of conditions. At its initial appearance, opinion was advanced that it might be only a seasonal combination, necessitated by the conditions of the Russian winter. After the latest exploits of the tank-cavalry team at Taganrog, Mariupol, and on the approaches to the Crimea, this impression has been dispelled as completely as the legend of the Russian incapacity for a summer offensive. There is every reason to believe that the new combat team, having proved its vitality, is here to stay. It therefore commands full attention, not only in its present stage of development, but with a view to its potentialities for the future. These seem to be great, and should be of special interest to the United States cavalry—possibly more so than to any other.

In the November-December issue of *THE CAVALRY JOURNAL* an article by a Soviet military writer, Colonel Valyushkin, outlines the tactical foundations underlying the new team, and points out some of the varied—almost infinitely varied—combinations and interplays which the tank-cavalry combat team affords. The genesis of the team and appropriate illustrations of applied tactics may prove helpful in arriving at a better under-



# Tank-Cavalry Team

## A Study in Tactical Development

standing of its functions—a résumé, so to speak, of its prenatal influences.

There were two powerful factors that made the emergence of this team inevitable. One was the existence of tactics not only peculiar to the Russian Cossacks for many generations, but peculiar to the extent of being baffling and incomprehensible to the cavalrymen of other European armies. Taken from Mongolian invaders, and ancient in origin, these tactics—in many respects the antithesis of linear tactics—were based on depth, space, and disregard of rigid formations. Essentially opportunistic, shifty and fluid, they evolved from the idea of the decentralized conduct of combat, and a high degree of individual initiative on the part of every combatant. As such, these ancient tactics, sometimes contemptuously dismissed by orthodox military minds, proved after several centuries to be the most modern. They are based on the same principles that constitute the foundations of armored tactics.

The other factor that predetermined the Russian tank-cavalry team was a much younger but equally vigorous influence, which shaped its present most important tactical use—that of a swift and powerful raiding force slashing deep into the enemy's rear. This influence, (which during the last half century was in Russia, a carefully nurtured tradition) was to a great extent American in its origin. The new team was a direct result of these two factors.

### ORIGIN OF PRESENT RUSSIAN TACTICS

First, the tactics on which a great part of the Russian cavalry, the Cossacks, were brought up for countless generations, since 1912 have been adopted by all Russian cavalry and have undergone continuous growth and constant developments since.

The first appearance of these tactics on the European scene during the Eighteenth Century and the Napoleonic Wars, when European cavalry for the first time experienced the methods of Cossack warfare, produced an impression of baffling incoherence. General Moran, who took part in almost every one of Napoleon's campaigns, commented on Cossacks: "These savage riders have no formations, no alignment, and do not present that precise regularity in movements which is so highly respected in our army. What a beautiful sight our cavalry presented when, glistening in the rays of the summer sunshine, it proudly deployed its slender lines on the shores of Niemen! And how sad it is to think that these masterly evolutions, which tired out the horses, proved to be completely useless against

these Cossacks whom everybody despised beforehand, but who, nevertheless, accomplished more than any other cavalry."

And another of Napoleon's veterans, de Braque, says: "Some officers, especially those without battle experience, make a point of speaking about Cossacks contemptuously. Don't believe them. Ask Soult, Gerard; ask any seasoned campaigner. They will tell you that the light cavalry, which surrounds the enemy with an impenetrable veil of vigilance, which exhausts him, which always strikes, and almost invariably evades the counterblow, fulfills every goal that any light cavalry should strive to accomplish."

And then again: "It is extremely difficult to counteract these tactics. If the line is deployed against them, they close in a column and pierce it. When attacked in a column formation, they quickly disperse and envelop the column from all sides."

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***The newest tactics of the war are ancient in tradition—American by nature.***

***1. From Russian Cossacks, the modern Soviets learned the lava — that doubling back maneuver to encircle the enemy — that was so successfully employed by the Nazi panzers in their "Wedge and Kessel" days of 1941; also, by Rommel in Africa before the Battle of Alamein.***

***2. From American cavalry — Confederate and Union—of the American Civil War, the Russians adopted, practiced, and perfected the tactical employment of RAIDS deep into the enemy's rear.***

***These two tactical principles form the foundation of the newest combination in modern warfare—tanks and cavalry, successfully employed by the conquering Soviet armies.***

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Another contemporary, practically waxing poetical, said: "They come and break up like a mighty surf; they sting like a flight of hornets; and they disappear like smoke."

These commentaries, which strike a strangely contemporary note, reflect the now familiar picture of the



bafflement of linear tactics when faced with those based on space, depth, and disregard of dogmas.

This method of tactical action was called in the Cossack cavalry "*lava*." Although highly respected, it was not used by the regular cavalry until the present century. The main reason for this was the conviction that only Cossacks trained in the use of horse and weapons from early childhood could develop the degree of independent resourcefulness needed to make a *lava* truly formidable. It was considered almost impossible to impart it to recruits within the comparatively short training period.

Another reason was that many cavalymen felt the same way as the Napoleonic officers quoted above. They could not relinquish the beautifully aligned formations, working with the precise regularity which had been a tenet for many generations. The arguments about *lava* and its adoption by the regular cavalry formations went on for almost a hundred years. Finally, in the period of military reforms that followed the Russo-Japanese War, the champions of *lava* won, and it was formally adopted by all the Russian cavalry in 1912.

#### NATURE AND TACTICS OF LAVA

Here is how the Instruction for the use of *lava*, issued as an annex to the Russian Cavalry Drill Regulations of 1912, define its nature and tactical methods:

"*Lava* does not represent a formation, but a tactical action of cavalry, without any definite form or construc-

tion. The troops engaged in *lava* take the order which promises them the most success on that occasion. The success of the action depends wholly on the presence of mind and resourcefulness of the commander and all the men of every rank.

"*Lava* requires the display of independence from each separate combatant. Their actions are united by their seeking to achieve the common aim made distinctly clear to each, and by their keen attention to signals and commands from the leader. For a successful *lava* action, the following is required: excellent individual training of each man in the management of his horse and in the use of arms; the development of resourcefulness, a sense of responsibility, and a keen understanding of the maneuver to be undertaken; and the ability of each man to direct his actions independent of the others, to the achievement of the common goal. In *lava*, formations are applied in accordance with the form of the enemy's action, the object to be achieved, and the condition of the terrain.

"*Lava* is bound neither by definite formations, nor adherence to distances and intervals. Killing independence of groups composing it destroys the very meaning of *lava*, where everything must depend on the circumstances. *Lava* is successful only when it is confusing, and unexpected by the enemy."

It would be hard to give a better general definition of the very essence of armored tactics, or of the tactics of infiltration which proved to be one of the basic

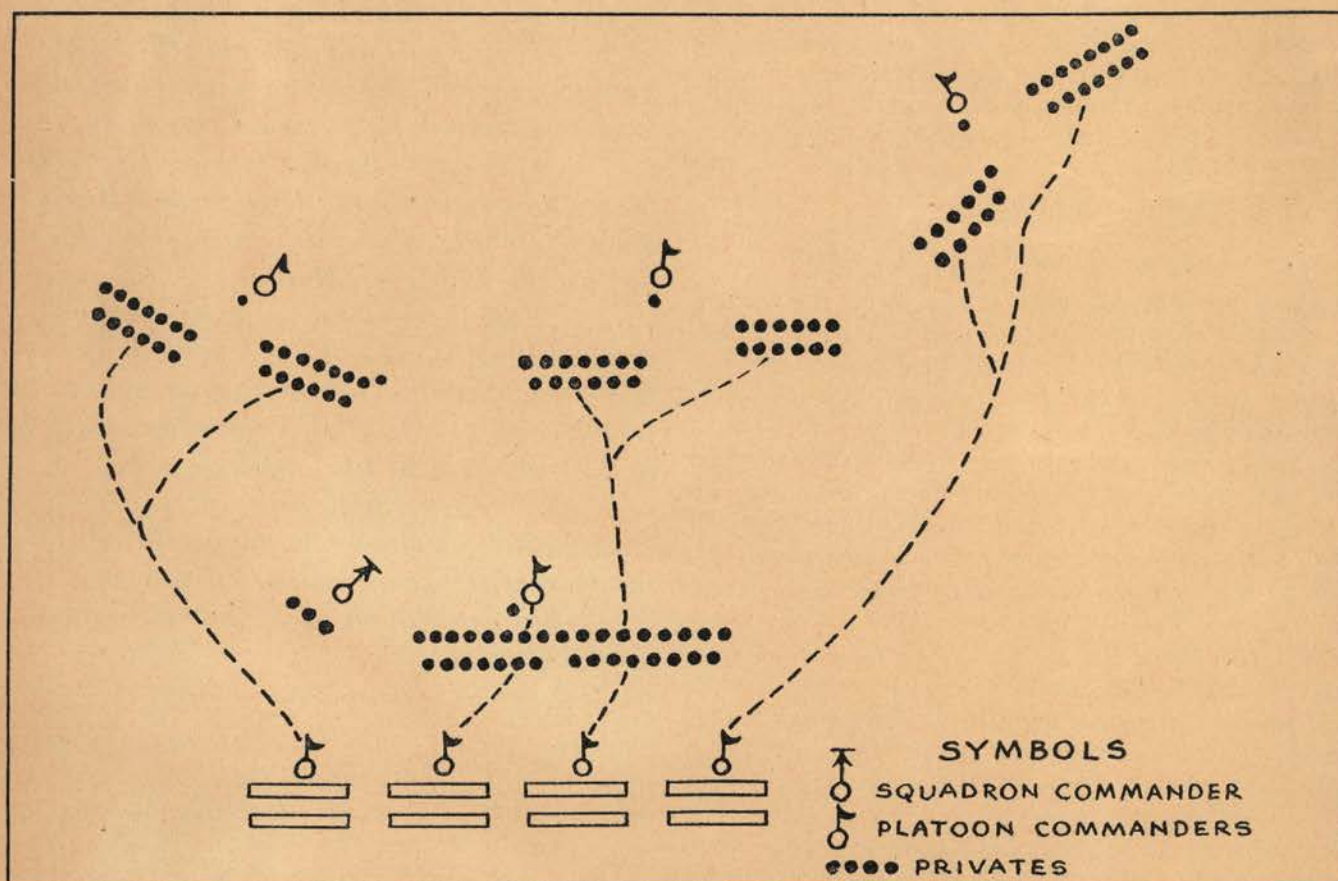


Chart 1.



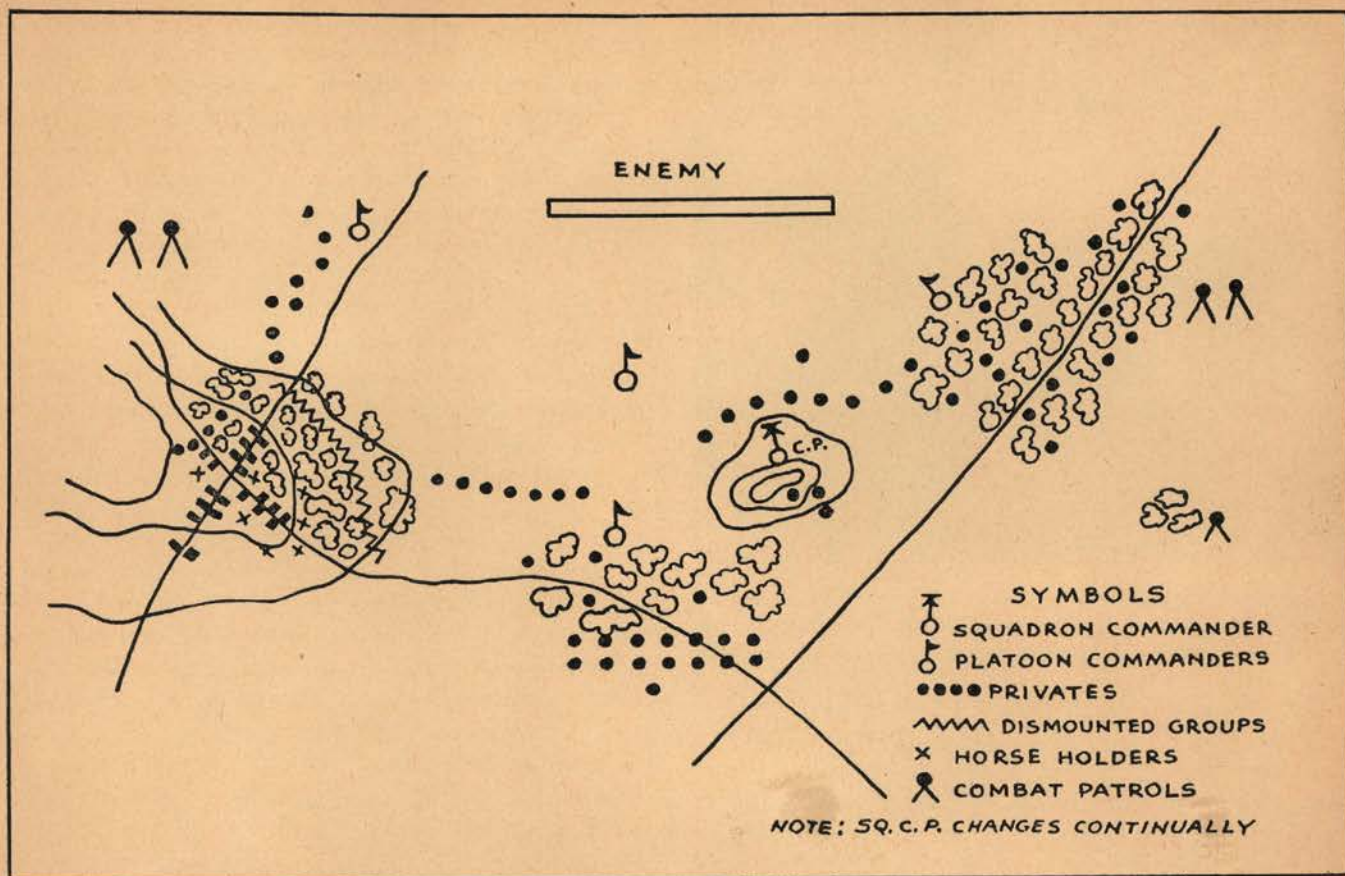


Chart 2.

factors which predicated the development of armored combat.

Outside of that, and general remarks indicating the tactical use of *lava* in defense as well as in offense, the regulations leave the rest to the initiative and resourcefulness of the commanders, who are given complete liberty of embroidering the tactical pattern on this broad canvas. Essentially, *lava* is an extended order of a squadron consisting of an advance line and support. It can be ordered out from any formation, line, or column, including marching columns, and it can be thrown forward to the front and to the flanks, by means of two or three simple commands, and in half the time necessary, for instance, to deploy a marching column or a close battle formation into the regular extended order prescribed by previously used Regulations.

Chart No. 1 gives an idea of the first stage of the deployment in this particular instance from a closed-rank battle formation. Usually three platoons out of four rush forward in diverging directions, next break up in two sections, and then disperse into a line as shown in chart No. 2. The shape of the *lava* when fully deployed is usually a crescent of varying depth, because its ultimate object, in offense as well as in active defense, is to strike at both flanks of the enemy. Most of its evolutions have one goal in mind—to work its way up to good striking positions for double envelopment.

The size and position of the support are also op-

tional with the commander. The practice of leaving one platoon out of four as the support need not be adhered to. The commander may throw all four platoons in *lava* and leave a group of only eight or ten men, who in such a case would act, not as a reserve, but as a rallying point in case of necessity. In Cossack troops, therefore, this support, according to its size, was referred to as "reserve" or just "beacon."

Mounting or dismounting different sections in *lava* is also left to the initiative of the respective small unit commanders. As long as they strive to achieve the goal given to them by the squadron leader, they can use their own judgment entirely. They may dismount all of their group, or any section of it. They may send the horses back of the line with horse holders, or have the dismounted men lead their horses.

In Cossack regiments, horses were always trained to lie down at the command of the rider, so that their riders could use them as support for their rifles, practically as living breastworks. This expedient is resorted to only in cases of emergency, especially in defensive combat against superior forces. In this case "dismounting by circles" is frequently used. The horses of the squadron are made to lay down in a circle, thus forming an "island of resistance." More frequently, however, for such an emergency the groups composing the *lava* form separate circular defenses by the same method, and thus present a series of islands of resistance mutually supported by fire.





"Horses were always trained to lie down at the command of the rider so that their riders could use them as support for their rifles, practically as living breast works."

The most epic example of what such a dismounted *lava* can achieve in defense happened during the Russian invasion of Turkestan in 1864, and became a classic often cited whenever tactics of *lava* are discussed. A Cossack squadron of 98 men, cut off and surrounded by hordes of native cavalry whose numbers ran into thousands, turned its *lava* into several dismounted circles and held off the furious assaults of the enemy for almost three days. During these three days every horse was killed—riddled by bullets. Out of 98 men, 91 were killed or wounded, including all the officers, and the small handful of exhausted survivors were saved at the eleventh hour by the appearance of a relief force.

#### LAVA USED BY SQUADRONS

The evolutions of *lava* in offensive combat present a picture of continuous fluid shifts, with a gradual accumulation of striking force on the flanks; in other words, a series of plays and combination of plays as varied as the plays of a well-coached football team.

One of the most frequently used shifts, and therefore the best known, is the so-called "closing on the wings." The instructions for *lava* describe it as follows: "The platoons of the *lava*, in order to gain space to confuse the enemy, begin to retreat on divergent lines. On having thus uncovered the front of the support, they swiftly turn and rush to attack the advancing enemy, always closing on their march." (Chart No. 3.)

Substitute a concentration of antitank weapons instead of a support, and you will get an almost exact description of the famous Rommel tactics by which he lured the whole of the British armored force into an ambush on June 13, 1942, and annihilated 230 out of 300 tanks by the fire of the 88mm guns placed in the depth, and by the ensuing double envelopment attack of his tanks. The result of this defeat was the fall of Tobruk and the consequent retreat to the El Alemein

line, which endangered not only Egypt but the Suez Canal. Many a war correspondent described this battle as one more manifestation of Rommel's tactical genius.

As a matter of fact, these tactics, thousands of years old, were used by the Parthians against the Roman legions, by Mongols during their invasion of Russia, and were practiced by the Cossack *lava* for countless generations. The first person to recommend their use in mechanized combat was General Fuller, who described this method in 1932 in his book, *F.S.R. III*, as "offensive counteroffensive."

It is sad to think that the main cause of this disaster, which endangered the life of the British Empire, could have been so easily prevented had exchange of military information between the Allies existed at that time.

Exactly the same tactics were used by the Germans on the Russian front as early as the summer of 1941, and in the fall of that year the famous 88mm dual purpose guns made their initial appearance under exactly the same circumstances. The Russians were victimized in the beginning, but only on a few minor occasions. They quickly recognized and catalogued these tactics because of their long familiarity. Every staff officer with a knowledge of tactics of all arms knew what a *lava* retreating and then closing on the wings could do to a rash adversary.

In the early spring of 1942—that is, four months before the disaster in Libya—a training pamphlet entitled, *What a Red Army Man Should Know About German Battle Tactics*, issued in hundreds of thousands of copies, described this mechanized ambush as follows:

"The German tank tactics show two tendencies. One is to lure our tanks into an ambush. The other

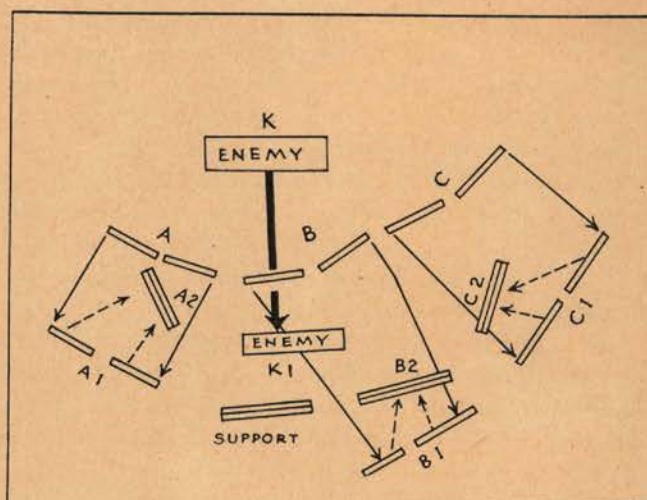


Chart No. 3

Retreat shown by solid arrows.

Closing on the wings—punctuated arrows.

*Lava* retreats: Group A to A-1, Group B to B-1 and Group C to C-1.

The enemy then advances from K to K-1; and the three groups, closing on the march, envelop his flanks by moving to A-2, B-2 and C-2 respectively.



is to turn and envelop them. The first move—drawing into ambush—is their favorite. It is done usually this way: On a certain section of their front, behind the lines, they mass a great force of artillery, mostly antitank guns. It has been observed that lately the favorite German weapon is the 88mm gun, designed as an antiaircraft gun, which is widely used by the Germans against tanks because the change from the antiaircraft firing position to the antitank position can be made in the space of two or three minutes. These guns, which the Germans call 'Flak Cannon,' made their first appearance on our front in the fall of 1941. They possess a high initial velocity up to 1300 yards a second. Their shells have a great armor-piercing strength, and are also incendiaries.

"Endeavoring to use this powerful antitank weapon to the fullest extent, the Germans constantly try to lure our tanks into ambush, and often stage a fake retreat, hoping that our pursuing tanks will follow into the trap and expose themselves to the 88mm guns. Sometimes this hide-and-seek game, in which only small German tank detachments participate, goes on for days. Avoiding a definite clash with our tanks, the small groups of German machines constantly maneuver in front of our lines, in the hope that some hot-headed tank commander, bored by this constant fencing, will finally succumb to the temptation and rush into headlong attack. They then quickly retreat, and if the reckless commander continues pursuit, his tanks seldom get back.

"These tactics make a thorough, continuous reconnaissance doubly important and necessary. Tank commanders must use all available reconnaissance means which should be carried out by the tank unit themselves; by infantry, aviation and engineers. Small scouting groups should constantly try to infiltrate into the German positions and learn as much as possible about tank and gun concentration behind their forward edge."

Drawing Number 3, taken from *lava* Instructions of 1912 illustrating the outline of *lava* as used by squadrons, adequately depicts "Rommel Tactics" practiced by Russian cavalry under the name of "closing on the wings."

#### LAVA USED BY A REGIMENT

When it comes to the use of *lava* by a whole regiment, the similarity to the armored combat becomes even more pronounced. At the discretion of the commander, a six squadron regiment throwing from one to five squadrons into the *lava*, could place them in a single advance line extending from one to two miles, or in successive waves. The reserve squadrons were then usually kept in a more or less compact formation, as a powerful striking force which could be shifted to any point behind the *lava* lines. Again Russian cavalry tactics presented a tactical method frequently employed by large tank formations.

As might have been expected, in the First World War, cavalry in general, and the above described tactics in particular, played a rôle nowhere as prominent as in campaigns of earlier times, and *lava* lost its deadly sting. The reason, of course, was that, compared with other arms, *cavalry fell far behind in the strength of fire power*. Whatever fire power cavalry had was almost exclusively used in dismounted combat. To make the old tactics click again, a new combination of fire and movement was needed. And that did not appear until the Russian Civil War of 1918-1920 when machine guns, mounted on carts and ready for instant action, appeared in the cavalry ranks and started the rejuvenation of *lava*. These carts in the cavalry ranks also paved the way for the later inclusion of armored car elements, and thus constituted practically a preview of the tank-cavalry tactics so prominent recently.

#### AMERICAN CIVIL WAR CAVALRY

The second factor, which proved to be a powerful influence in the development of present tank-cavalry tactics was that of great raiding teams operating in the enemy's rear, striking at his nerve centers, and dislocating the resistance in whole areas. The idea of using cavalry not only as a frontal striking force, but as a raiding force as well, of course, always existed in Russia. The Mongolian invasion was the most gigantic cavalry raid the world has ever seen. For centuries the Cossacks defended the borders of Russia by countless series of incursions and forays into the enemy's territory. In 1760 a flying Russian column, operating in the rear of the Prussian army, captured Berlin and held it for a few days. The famous Russian "Partisans"—the guerrillas of the Napoleonic wars—constantly raided the territory of the French armies, although never on a scale large enough to bring any strategic results. Despite all this, the idea of cavalry raids was still rudimentary, and dismissed by many as a weapon mostly fit for guerrilla warfare.

This attitude changed entirely after the American Civil War.

As is well known, not much attention was paid to the American Civil War in Europe for decades after its conclusion, and for a long time it was the least understood war of the Nineteenth Century. The greatest military authority of that time, German Field Marshal von Moltke, contemptuously dismissed it as a "war of one armed mob chasing another—an experience from which nothing of value can be learned." The rest of European military opinion followed suit.

When the United States government issued the official records of the war, one set was thoughtfully presented to every military academy and war college in Europe. For years these volumes gathered dust on the shelves of the libraries—that is, everywhere except in Russia, where the impression created was tremendous. All important developments and trends shown by the war were noted—the passing of permanent fortresses;



the growing strength of field fortifications; and above all, the amazing exploits of the American cavalry and its rôle in the strategy of the war.

Here, the Russians saw the embodiment of all the principles on which the Russian cavalry was brought up, but realized on a scale and with a brilliance never even remotely attained before. As the dean of Russian military historians of that time, General Prince Golitzin, expressed it: "The Americans transmuted into reality the cavalryman's most celestial dreams, and our cavalry is the only one in Europe which can emulate them."

In 1875 a young officer of the General Staff, Colonel Soukhotine,<sup>1</sup> published a monograph on "Raids of American Cavalry in 1861-1865"—a brilliantly written work, and the first one of its kind in Europe which gave a clear and penetrating analysis of American cavalry tactics in the Civil War. They were, as he indicated, a grandiose development of vague and rudimentary Russian concepts on the rôle of cavalry in war. "For a decade now we have waited with impatience to see what the European military minds would say about this great campaign, and what they said amounts to precisely nothing. And that probably is the way it should be, as they are organically incapable of understanding the full implications and the meaning of the rôle which the American cavalry played in this war. It is left to us to carry on this glorious tradition on this side of the ocean. The American campaign is the incarnation and development of concepts and ideas which, though vague and rudimentary, have animated our cavalry for so many years. The American cavalry of the Civil War is the flesh of our flesh, our spiritual offspring, and our next of kin divided from us in time and space." The rôle of Russian cavalry in future wars, he thought was clearly outlined—cavalry finds its consummation in deep raids into the enemy's rear on a strategic scale.

The success of Soukhotine's work was sensational, and much more than academic. In the following year, during the large fall maneuvers, for the first time in Europe a cavalry raid, carefully fashioned along American lines, was staged. It proved to be entirely successful. After many discussions, the American word "raid" was officially adopted into the military language for lack of an adequate Russian word.

When the Russian-Turkish war broke out a year later, in 1877, several cavalry raids, also entirely American in concept and tactics, were successfully carried out, the most famous of them being the raid on Andriopole, a strongly fortified place which was captured by a force of 1,500 horsemen. These raids became minor classics, but Stuart, Morgan, and Sheridan still remained for every Russian cavalryman magic names and symbols of highest possible achievement.

In the '80's and '90's the American tendencies be-

came so strong that the most influential figure in the Russian Army of this period, and one of the greatest educators that the army has ever had, General Dragomiroff, a military writer of great brilliance,<sup>2</sup> warned against regrettable excesses among the followers of the American school. He pointed out that *a distinction should be made between features that represent manifestations of the American genius, and those which were adopted by them only under the stress of necessity*. It was suggested, for instance, by many that individual training of riders could be almost entirely dispensed with because the horsemen of Stuart and Sheridan never saw the inside of a riding ring. The lack of individual training, Dragomiroff argued, was just a concession to necessity, not a freely arrived at system. "It isn't *that* which we should try to emulate; it is their spirit, and their broad and lofty tactical concepts."

He considered Stuart "an incomparable genius," and analyzing the battle at the Brandy Station, June 9, 1863, wrote: "What a marvelous episode! Stuart is attacked from the front; he is attacked from the rear. The enemy is superior in force; defeat and annihilation stare him in the face. How many commanders would have chosen the cautious, reasonable solution: to retire, to get out while the going is good. But Stuart has only one idea—to dash from one adversary to another, striking at each one in turn. He stays, he fights, and he is crowned with glory."

Two decades later, during the period of the World War, one of the first things taught in the Cavalry School by the professor of military history was that "any over-dressed young fool with guts and luck can become a small Murat, but Davidoffs<sup>3</sup> and Stuarts are born once in a century."

And so we see that this young and powerful American tradition continuously shaped the whole psychology of the Russian cavalryman up to present times. Young cavalry officers in other European armies dreamed of charges in close formation as of the highest consummation of their traditions and training. The Russian thought in terms of raids, break-throughs, and tornado-like rides into the enemy's rear. Why is it that none of these glorious dreams came to life in the Russo-Japanese and the World War campaigns? Reasons were many, but the two main ones were obvious: the lack of understanding of the power of modern small arms—the hopeless mishandling of machine guns, which were used in cavalry exclusively as an infantry weapon—and above all, the tragic dearth of true cavalry leaders.

The Russian Civil War brought the vindication. The cavalry played a most important, often a decisive rôle. The White Cavalry was by far the best and strongest in the first period. The cavalry raids of Wrangel, Mamontoff, and others did much to bring the Red Army to the brink of defeat. Then the pendulum

<sup>2</sup>Dragomiroff's writings were recently republished by the Soviets, and his memory is highly respected in the Red Army.

<sup>3</sup>A famous "Partisan" of 1812, the originator of guerrilla warfare.

<sup>1</sup>In later years—General, Commandant of General Staff Academy.



swung—the Soviets went to the horse, the Red Cavalry grew with amazing rapidity, and a year later Budenny became a world figure.

And so these two great influences, the tactics of depth imparted by Mongols, and the concepts of great cavalry raids learned from the American cavalry, result today in these tank-cavalry teams which, as the *New York Times* recently reported, “stunned the Germans with their speed and ferocity.”

From tireless experimentation there gradually evolved various new tactical combinations for the new combat team. In this respect, the Russian front is practically a huge laboratory where new experiments are constantly being made and the results carefully checked, analyzed, and finally compiled.

#### AN EARLY TANK-CAVALRY OPERATION

One of the first descriptions of combining independent tank and cavalry forces on a small experimental scale was reported by Colonel N. Moskalik in *Red Star* in August, 1942.

A combined tank-cavalry unit was advancing towards a meeting engagement with a motorized infantry which had just succeeded in pressing back the Soviet infantry, and had occupied several fortified points. The combat team apparently consisted of one cavalry regiment and a tank battalion. The night was used for a concealed approach march, so as to be in readiness to strike at dawn. The marching formation is not described exactly, but is referred to as one which “enabled the tanks to deploy swiftly and to attack the enemy together with the cavalry right off the march.”

Reconnaissance showed that the Germans had not had time enough to consolidate their newly won positions. One German battalion occupied the position in front of the railroad and parallel to it. Another battalion occupied the patch of woods on their left flank. Thorough reconnaissance made the whole picture sufficiently clear, and as later evidence proved, quite accurate.

It was decided to strike the main blow at the German right, because here their flank was practically open. Simultaneously with the main attack, one squad-

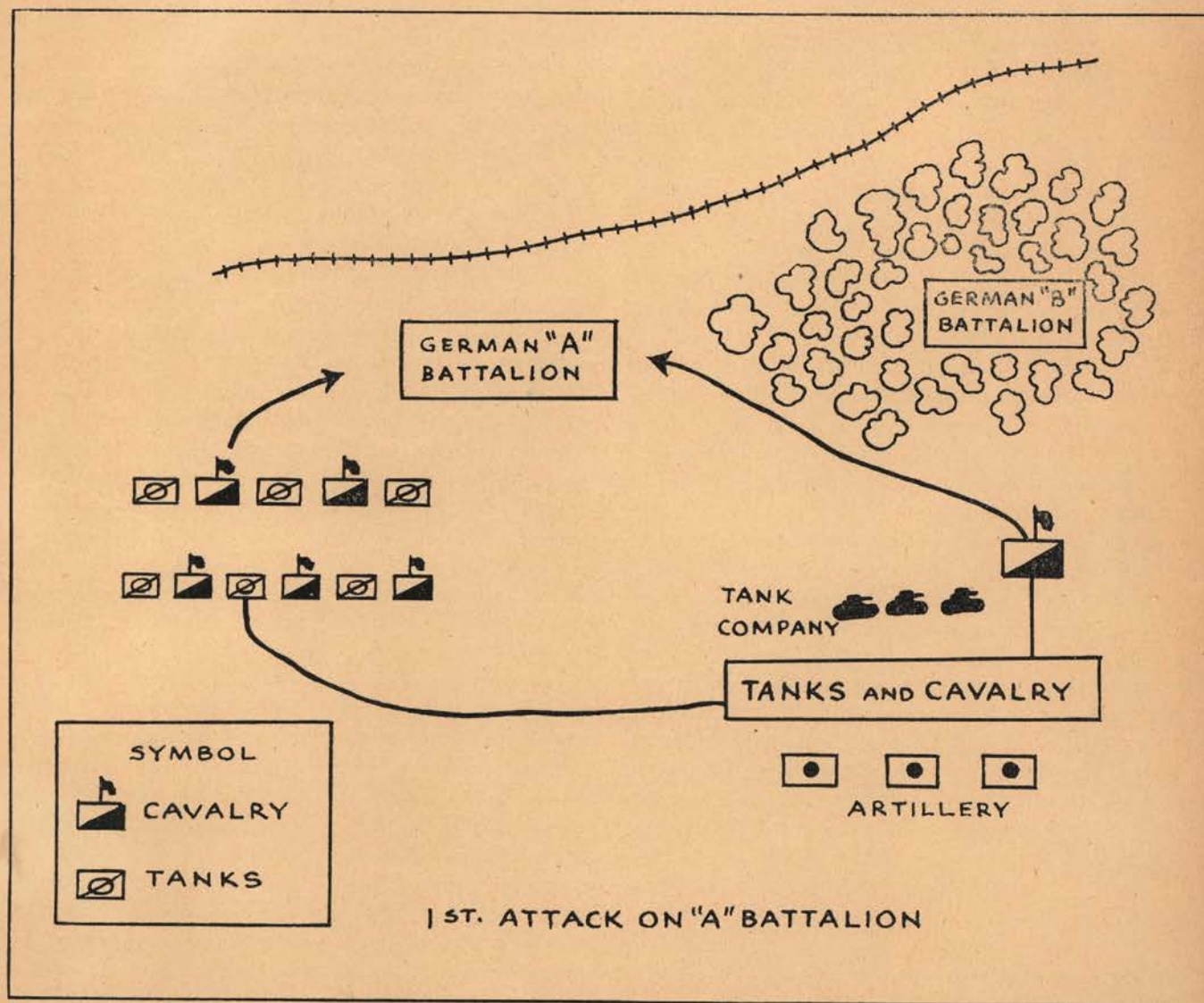


Chart No. 4



ron was assigned to penetrate through the German line at the junction of the two battalions, and strike at the left flank of Battalion A. Inasmuch as this squadron throughout the operation had to be exposed to a strong enemy fire from the woods occupied by the second battalion, it was decided to reinforce the squadron with one tank company. (Chart No. 4.)

The approach march was uneventful, and the prescribed battle order was achieved quickly and smoothly. The main force of tanks and cavalry, after describing a wide encircling arc around the German right, attacked them near the rear. Simultaneously the tank company, strongly supported by the bulk of the detachment's artillery, opened fire on "B" battalion occupying the woods. Thus the squadron advancing into the junction between the two German units was enabled to reach the left flank of "A" battalion almost without casualties.

After a stubborn engagement lasting almost an hour, the Germans broke and started to retreat. A quick regrouping followed, and the whole force attacked "B" battalion in the woods. By that time, it had been considerably softened up by the steady and punishing artillery fire, and gave way almost immediately.

The battle formation of the main force was as follows: The tanks advanced at intervals of twenty to thirty yards. The length of these intervals was calculated with the idea of giving each tank plenty of space for turns and change of direction without colliding with the cavalymen. In these intervals were placed small groups of cavalymen, five to seven men each. The formation consisted of two echelons; the distance between the assault echelon and the rear one was about half a mile. The account indicates that placing small groups of cavalymen between the tanks proved to be very effective in cutting down casualties, as the tank armor protected these groups from the flanking fire of enemy machine guns. The formation described is practically nothing but a *lava* with the inclusion of mechanized elements.

When the assault echelon approached within a few hundred yards of the enemy position, the tanks (which suffered only a few casualties) rushed forward to the outer edge of the German defense and began to suppress the enemy's strong points. As soon as the first signs of uncertainty and disruption in the German fire system became manifest, the cavalry began to move up and finally charged in a crescent formation. Their attack seems to have been entirely successful, and more than two hundred German officers and men were cut down. Some of the enemy's strong points suppressed by tanks in the initial stage of the attack came to life again during the cavalry charge, and again were pounced upon by tanks.

The success of this engagement was mainly due to the perfect coordination between tanks and cavalry. The two arms kept abreast of each other, nobody fell behind, and their respective mobility was fully ex-

ploited at all stages. Further developing the initial success, the group reached the next German defense boundary, where they were met by an antitank defense of considerable strength. Here the tank casualties were considerably higher, but this boundary was also carried. The impetus of the attack, and the flexibility of the formation were such that the cavalry again was able to attack right after the tanks, and without dismounting.

In conclusion, Colonel Moskalik points out that even the best conceived maneuvers of tank and cavalry may come to grief without full measure of antiaircraft protection, especially in open country. Approach marches should be accomplished preferably at night, and troops should be thoroughly trained to disperse quickly. Measures of concealment and camouflage are especially important, particularly in bivouac periods. It is obvious that a well thought out system of supply, as well as the greatest possible attention to maintenance and repair are also of prime importance. Failure in organization, and especially failure to supply the tank-cavalry force with plenty of antiaircraft weapons and a quickly available support by fighter planes may mean a stalled offensive, and a corresponding loss of maneuvering ability.

Similar experimental actions in which different possible combinations of tanks and cavalry were tried out, were carried on throughout the summer and autumn of 1942 on all sections of the front.

#### THE TANK-CAVALRY TEAM AT STALINGRAD

Few people know that cavalry took part in the defense of Stalingrad, as well as in the counteroffensive that culminated the operation. Here, unfortunately, as on a great many other occasions, available information at this time is very scanty. One Soviet report says that one cavalry division, the Don Cossack Guards, operated throughout the siege in the southern part of Stalingrad. This district is practically a series of separate suburban and industrial communities strung out along the banks of the Volga, with stretches of open country in between. This whole section of suburbs is crossed with ravines and gulleys. Most of these settlements, some of them large and some of them just small clusters of industrial and private dwellings, changed hands several times.

The only available details concerning the participation of cavalry again indicate the same trend. The account repeatedly stresses the same formations as were used in the action described above. In attack, tanks, in the lead, usually tried to envelop the inhabited center and break into it at several points simultaneously. The cavalry *lava* followed the tanks, sometimes closely, at other times it came into action as much as one or two hours later. That apparently happened when resistance was particularly stubborn, and the German fire system proved to be extensive and well organized.

The account leaves no doubt that in all those combined cavalry actions, the squadrons were in mounted



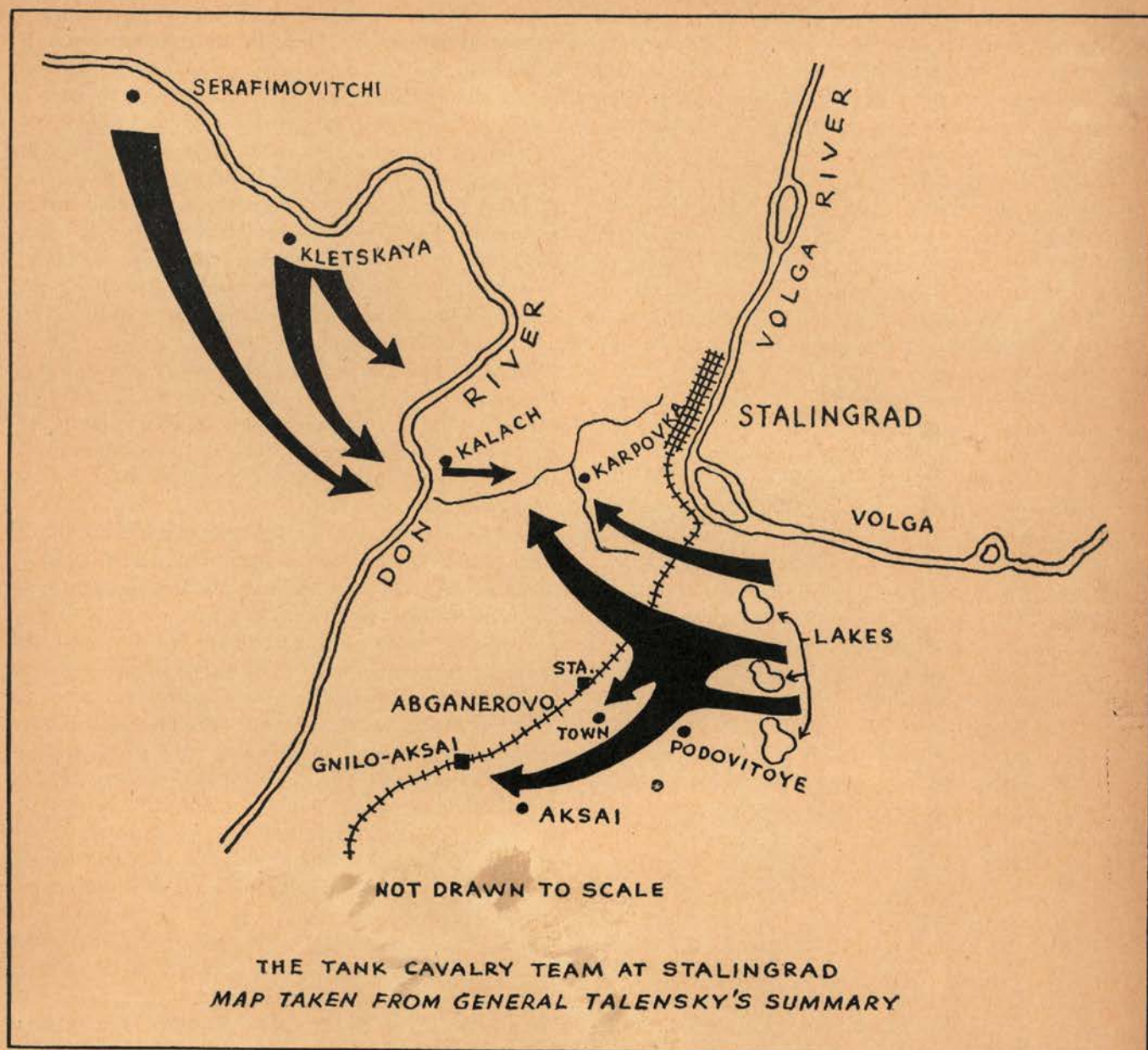


Chart No. 5

formation. After breaking into the settlement, the cavalry combat became mixed, some units dismounting and fighting from block to block.

All those experiments, closely studied and tabulated, finally shaped the structure of the combat team as it appeared on the first day of the Stalingrad counter-offensive, November 19th.

In its general features, the encirclement of the German Sixth Army at Stalingrad has already been described in these pages.<sup>4</sup> Since then, however, an important and authoritative account has thrown new light on the rôle of cavalry in this operation. There are many indications to warrant the impression that for many weeks after the November breakthrough, the rôle that cavalry played in the encirclement operations was deliberately hushed up in the Soviet military press.

For instance, the account describing the actions of the First Guards Tank Corps, written by the corps commander, General Rodin,<sup>5</sup> never mentions the participation of cavalry in this most important operation. The *Red Star*, which reported the Battle of Stalingrad with a wealth of tactical details throughout its duration, also gave practically no information on the rôle of cavalry in the encirclement operations. The reason for this reticence is obvious. It was considered premature to disclose any tactical information concerning the structure and the *modus operandi* of the new combat team. There was every reason to believe that the German High Command would show an immediate and intense interest in the workings of this new combination. That is exactly what happened.

The first account, disclosing the structure of the two

<sup>4</sup>"Encirclement of Stalingrad," *CAVALRY JOURNAL* July-August 1943.

<sup>5</sup>Published in *CAVALRY JOURNAL* January-February 1943.



great pincers that closed on the German army, appeared in May, six months after the operation. It belongs to the pen of the editor of *Red Star* and official Soviet military historian, General Talensky, who usually summarizes the most important operations, and their strategic and tactical outlines.<sup>6</sup>

Here is what the account says: "The main blow was struck from the north from Serafimovitchi by the troops constituting the left flank of the southwestern front, and some troops of the Don front. The main maneuvering force on this wing was a mobile group consisting of three tank corps and two cavalry corps. The main blow on the left flank was struck by the southern group of the Stalingrad front. Here the striking mobile force was represented by two tank corps and one cavalry corps. The rest of our forces of the Don and Stalingrad front alike conducted aggressive actions of an auxiliary nature—holding operations designed to tie down the German forces to their respective sectors, and to dislocate their attempts to maneuver their reserves or to evade the blows of our flanking troops."

The account goes on to state: "On the morning of November 19th . . . the German front was broken through, and the mobile groups dashed into the enemy's rear. The southern striking force, annihilating several enemy divisions, reached the objective, the southern bank of the Karpovka River, on November 22nd. The northern group seized the Kalach bridgehead on November 23rd, and effected the junction with the southern group. The ring around the German army was thus closed."

There is little available information concerning the actions of cavalry of the northern group. The few sketchy accounts concerning the cavalry groups of the southern group, and the way its action was coordinated with those of the two tank corps composing the striking force, can be summarized as follows:

The strongly fortified German positions on the south-

<sup>6</sup>Summary of the Stalingrad Battle (August 1942-February 1943) by N. Talensky in Issue Number 5 of *The Bolshevik*.



Battle scene from official war film "City That Stopped Hitler" shows cavalry in action south of Stalingrad, where it was used with tanks to form the southern pincer.

ern flank of the Stalingrad sector ran along the line of lakes in an almost straight north-south line.

The key to the whole position was two important heights behind the lakes. Both heights, as well as smaller hills adjoining them, were heavily fortified, and the defiles between the lakes (one, 8½ miles—the other, 4 miles wide) extensively mined.

Usual painstaking preparations took place before the attack. These included final war games in all units down to battalion commands. Cavalry commands down to squadron leaders participated in the war games at the tank corps headquarters, as well as in those played by staffs of different units.

A heavy fog hung over the battlefield when the artillery preparation started at dawn. It was very thick, and the visibility was much reduced when the attacking infantry, heavily supported by tanks, started the advance along the two defiles. The fog grounded the aviation completely.

After several hours of most stubborn fighting, the main zone was broken through, and shortly after 12 o'clock midday the tank corps went into the gap, with the cavalry following immediately.

After the collapse of their main defense zone, the Germans retreated steadily all day, while suffering heavy casualties under the relentless Russian pressure.

The first organized resistance was met at the large village of Plodovitoye, which the tank corps reached soon after darkness. The battle for this strongly fortified point lasted for several hours. Finally, the village was enveloped by two tank columns, while the third column attacked it frontally. By 11:00 p.m. the defenses were broken, and the mechanized columns entered the village.

Here the Soviet account stresses the fact that, after breaking into the village, the tanks lost no time there, and made no attempt to carry the fight to the finish. Their task was to disrupt and disorganize the defense; then leave the rest to the cavalry. It is easy to see how much the speed and impetus of the break-through were increased by these tactics. The tanks practically streamed through the village, and continued their advance on the important German base of Abganerovo. In their wake, cavalry swept into Plodovitoye from two sides, apparently with all squadrons in mounted formation. Many Germans were cut down, and 3500 prisoners and considerable booty taken.

The same tactics were repeated at Abganerovo, a few hours later, shortly before daybreak. Two pincers closed around it, from north and south, at the same time that a frontal tank attack was being launched. This time, each pincer had two arms—one consisting of cavalry; the other of tanks (see map).

Again, tanks demoralized the defense and went on their way, while cavalry converged on the station and the town from all sides. Here many Germans were cut down by cavalry sabers, and several hundred were captured. The encirclement, however, was not complete.



A part of the garrison (consisting of one infantry regiment, strongly reinforced with artillery) escaped along the two roads leading west.

Several squadrons of cavalry were immediately ordered to overtake the retreating column and cut it off. This was successfully carried out, and the whole column surrendered.

The tank corps in the meanwhile, advanced along the railroad to the station Gnilo-Aksayskaya, which was taken in the morning.

The station of Abganerovo yielded a rich booty—several hundred railroad cars and trucks loaded with supplies, over 100 guns of all caliber, and several ammunition dumps. The total number of prisoners taken in these operations ran over 8000. Three German divisions were completely smashed.

This is as much as has been released about the initial operations of the tank-cavalry team. The results, however, are known to the entire world. The debut of the new "constellation," in view of the strategic results achieved by this operation, can be classified as a complete and unqualified success.

#### GERMAN EMULATION

The impression produced by the new combat team on the German High Command was instantaneous and profound; of this there could be no doubt. It became an object of immediate study, and their first attempt to reconstruct and duplicate the new tactics followed within a month.

In the middle of December, the Germans began to prepare the counterblow designed to relieve the encircled Sixth Army. The relieving force, under the command of Field-Marshal von Mannstein, was concentrated in the district of Kotelnikovo. The same official Soviet account of General Talensky gives the composition of the German striking force as follows: Two panzer divisions, two cavalry divisions, four infantry divisions, and special reinforcement groups. The structure of this shock group, which was given this strategically most important assignment, tells the story clearly.

It is the first known instance in the history of this war where the Germans used two cavalry divisions massed in one force, and the proportion of tanks and cavalry shows an obvious attempt to reincarnate the tank-cavalry teams which caused the initial disaster of the Sixth Army. They were, as is known, unsuccessful, and the von Mannstein group, after a considerable initial advance, was first stopped by Russian counterattacks and finally completely smashed and thrown back to Rostov.

Almost simultaneously, other reports from different sectors of the huge front indicated similar German attempts to duplicate the new combat team. One of them, and a particularly stubborn one, was made under circumstances similar to those just described. In the latter part of December, trying to break through the Russian

#### NAZIS SEEK CAVALRY RECRUITS

**Stockholm, Jan. 2, 1944 (AP).—A dispatch today said members of the Hitler youth organization were being urged to join the German army as volunteers, indicating anew the Reich's need for recruits. The dispatch said it was learned that 15-year-old members of the Jugend (youth organization) were being trained in cavalry units for front line service when they become 16.**

**Germany is reorganizing her cavalry, a move which apparently reflects the Russian's effective use of mounted troops on the Eastern Front.**

ring encircling Velikie-Louki and relieve the hopeless situation of that besieged garrison, the Germans used for the first time on this sector the combination of independent tank and cavalry units, although on a comparatively small scale. The Soviet account written by the well known tank expert, Major Slessareff, states: "A strong German break-through attempt was made southwest of Velikie-Louki. . . . Here they repeatedly used tank units combined with several squadrons of cavalry. These attacks designed so as to combine surprise and speed, followed in waves, and these combined formations were thrown into attack, sometimes several times a day. They were broken up by our powerful concentration of artillery and trench mortar fire."

There could be little doubt that the comparatively limited and so far unsuccessful German attempts to recreate the Russian tank-cavalry tactics were handicapped by an insurmountable weakness—the lack of horse cavalry. The significance of the new tactical development was apparently grasped by the German High Command immediately, but to develop their own combat teams of this nature proved to be impossible, as one of the two elements was woefully inadequate.

The other conclusion which also seems to be proven beyond a shadow of doubt is that this powerful new team should be studied and scrutinized as closely as possible. The results seem to be well worth while, and new proofs are accumulating daily. As brought out earlier, the United States cavalry, more than any other, has a vital interest in these developments. History, as it was often said, repeats itself. It also sometimes reverses itself. No one has more right than the United States cavalry to greet the new constellation on the tactical horizon with the same words as, three generations ago, were used by General Soukhotine: "They are the flesh of our flesh, our spiritual offspring, and our next of kin, divided from us in time and space!"



# When Naval Guns Support

ONE of the striking features of World War II, which has seen the development and use of amphibious warfare on the largest scale, has been the greatly increased use and efficiency of British naval gunfire in support of the Army ashore. In World War I, naval gunfire was used in support of the Gallipoli landings and in bombardments of the Belgian coast, but the whole technical development was still in its infancy, and amazing strides have since been made.

## NAVAL CHARACTERISTICS

**Guns.** Naval guns differ from Army guns in that they are of high velocity and low trajectory, which make them less accurate on a pin-point target. To a certain extent, this has been overcome by the introduction of smaller charges known as bombardment charges, which give the trajectory more of a "howitzer" effect and considerably reduce the wear of the gun.

**Ammunition.** Further, the ammunition which a ship can carry is necessarily limited. Warships obviously carry normally a high proportion of anti-ship shell and only a small proportion of the H. E. shell suitable for use against shore targets. For specific operations, where interference from enemy surface forces is unlikely, a much higher proportion of H. E. shell can, of course, be carried. The type of shell to be used depends on the type of target to be engaged. Normally, for the larger caliber guns H.E. will be the best, but in special circumstances armor-piercing shell will provide the best answer.

In the bombardment of Tripoli early in 1941, *Warspite* and *Barham*, which were engaging buildings, used 15-inch H.E. shell. *Valiant*, firing on underground oil fuel tanks and the underground shelters of the Italian Naval Headquarters, used 15-inch armor-piercing shell. A satisfactory fire, billowing up as the fleet steamed away, testified to the accuracy and efficacy of this fire against the oil fuel tanks, and it is interesting to meditate on the feelings of the Italian Naval Staff in their shelters, on the unexpected arrival of a 15-inch shell.

**Navigation.** The control of naval gunfire against shore targets is complicated by the fact that, because of submarine and air menace, it is rarely, if ever, possible for the bombarding ship to anchor or remain stopped; she must be under way. When the target engaged cannot be seen from the ship (and most targets are of this type), arrangements must be made for the guns to be trained initially on a bearing worked out by

the navigator. This bearing and training of the guns must be kept continually corrected by the change of bearing caused by the ship's movement. Similarly, the range must be calculated and kept up to date.

## COORDINATION WITH LAND WARFARE

**Air Observation.** Although modern scientific aids have increased the accuracy of navigation, the ship's observed positions alone can rarely be relied on to give the requisite accuracy to hit a target some miles inland. Observation of fire is also necessary. In the early stages of a British seaborne assault, when enemy positions on shore are bombarded before friendly troops have landed, this observation must be done from the air. Once one's own troops have got ashore, observation of fire can be carried out by army officers ashore, known as forward observation officers.

In both these types of observation of fire, great strides have been made. Air observation has, up to date, normally been carried out by the Fleet Air Arm, using either carrier-borne or ship-borne aircraft—the *Swordfish* and the *Walrus*. Where strong fighter opposition may be expected, however, spotting will have to be carried out from faster planes than these.

**The Forward Observer.** Observation by forward observation officer (F.O.O.) parties ashore has been greatly developed. An organization has been set up in Britain, under the control of Combined Operations Headquarters, whereby army Royal Artillery officers are trained as F.O.O.'s for the observation ashore of naval gunfire and as bombardment liaison officers (B.L.O.'s), for artillery liaison on board bombarding ships. This organization has already been used in all major seaborne assaults, including Madagascar, the North African landings, Sicily and Italy, and has worked well.

**Liaison.** Each bombardment unit has a small headquarters staff commanded by a lieutenant colonel, Royal Artillery, who is the chief bombardment liaison officer (C.B.L.O.). The troops, each of which is designed to provide observation of fire on a divisional front, consist of about seven bombardment liaison officers and seven F.O.O. parties.

In Sicilian and Italian operations, where, after the initial landing, the advance was along a coast line, naval bombardment has been extensively used in support of the army advance, and the need has arisen for transport for these F.O.O. parties. In the early days of the Sicilian operation this had to be improvised, and several cases occurred of F.O.O. parties going forward mounted on donkeys borrowed from the local population. Vehicles are now being supplied for all F.O.O. parties.

\*On Naval Staff of Combined Operations H.Q., London. Gunner officer of the battleship *Valiant* from outbreak of war to April, 1942, with a short spell in the cruiser *Dido* in Spring, 1942. Service in the Norwegian campaign. Awarded D.S.C. for action at Cape Matapan. Took part in bombardments of Bardia, Tripoli, Valona and Rhodes.



# t the Army

by Commander J. H. Unwin, D.S.C., R.N.\*

The support provided by naval gunfire on land can be divided broadly into three classes:

1. Bombardment of enemy shore positions where no friendly troops are ashore.
2. Bombardment in support of a seaborne assault.
3. Bombardment in support of an army advance along a coast line.

## 1. WHERE NO FRIENDLY TROOPS ARE ASHORE

The first of these three types is a straightforward application of shore bombardment with air observation.

Examples of this type of fire come mainly from the Mediterranean. One typical case was the bombardment of Tripoli, already quoted. General Wavell, because of the diversion of a large part of his available forces to Greece early in 1941, was having to retire from the forward places he had captured during his first victorious advances, and the object of naval bombardment was to cause as much destruction as possible to this main North African enemy supply port.

Another such example was the bombardment of Rhodes by the 15th Cruiser Squadron early in 1942.

Having escorted the Allied landing forces to Salerno Bay, British and U. S. Warships put up a terrific supporting bombardment against the well established German shore batteries and entrenchments. This naval bombardment continued throughout the bitter fighting that followed the landings.

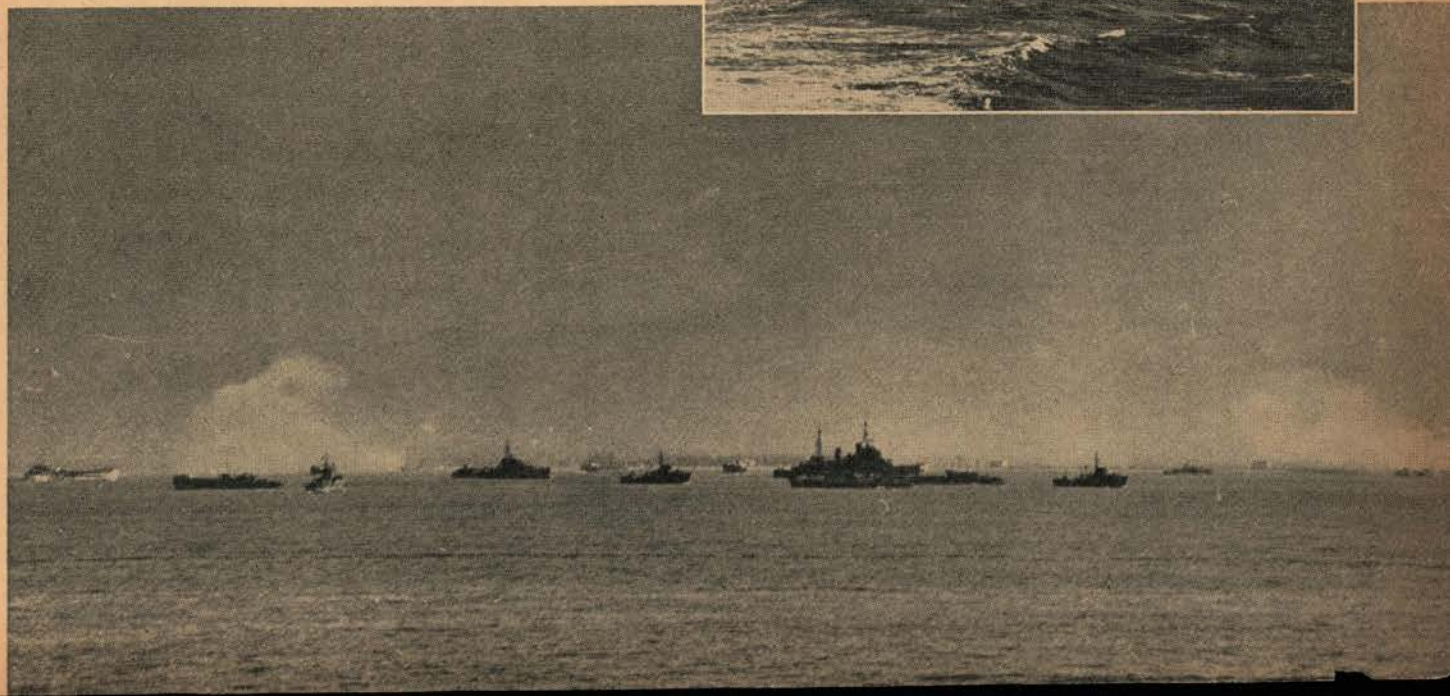
Right: The 33,950-ton British battleship, H.M.S. *Nelson*, fires her 16-inch guns.

Below: British warships bombard enemy positions on the beaches of Salerno, where German tanks were engaged with "good success."

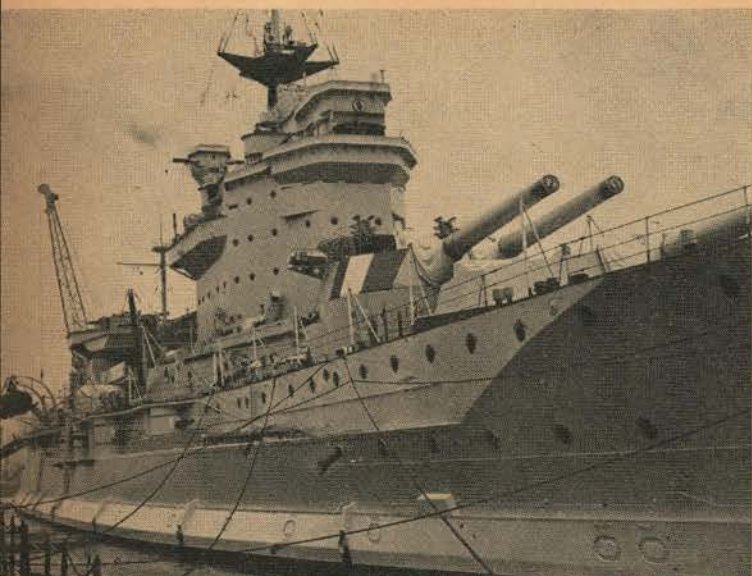
British Official Photos

This action was designed principally as a diversion from the main land battle in North Africa. Here the 15th Cruiser Squadron and destroyers bombarded a flour mill and other targets on the island in a night bombardment carried out by using flare illumination and direct and aircraft spotting.

A third example was the bombardment of Valona by the battleships *Warspite*, *Barham* and *Valiant* at the end of 1940. Valona was then one of the two main Albanian ports used for supplying the Italian forces fighting in northern Greece. The battle fleet, carrying out an indirect night bombardment of the port, fired at a range of about 26,000 yards over a 3,000 foot moun-







Central Press Photo, Ltd.

The great guns and armored superstructure of H.M.S. *Warspite*, now one of the most powerful warships afloat.

tain on an island covering the bay. Because of bad weather, aircraft spotting was not possible. A predicted area shoot, based on an observed position obtained from land bearings, was therefore carried out.

## 2. SUPPORTING A LANDING

Naval bombardment in support of a seaborne assault may be divided into three phases:

- a. The period immediately preceding the first assault landing.
- b. Support of the landing and the advance up to the capture of the initial covering position.
- c. Support of the advance inland, or of the fight to retain the covering position.

*Before the Landing.* In the first of these periods—that immediately preceding the first assault landing—there will be two main tasks, the neutralization of all enemy batteries covering the seaward approaches and the beaches, and the neutralization or destruction of all enemy defenses on or covering the beaches.

The first of these tasks will have to be carried out mostly by indirect fire with air observation, either under cover of darkness with flare illumination, or by day from outside the range of the enemy shore batteries, or with the bombarding ship screened by smoke. Anything in the nature of a duel between the bombarding ship and the shore battery must be avoided. History has shown that because of the very small size of the shore targets, the low accuracy of Naval guns against pin-point targets, and the large relative size of the ship as a target, the odds in such a duel are in favor of the shore battery.

There have been many instances of the successful neutralization of enemy shore batteries by warships: notably, by *Bermuda* of the C Matifou Battery during the assault on Algiers; by *Rodney* of the du Santon Battery during the assault on Oran; by *Nelson* and *Rodney* of the Regio Batteries overlooking the Straits of Messina (these batteries were outside the range of

cruisers' guns); and by *Abercrombie*, a 15-inch monitor, during the assault on Gela, Sicily. In this last case a British monitor, supporting an American landing, was using American F.O.O.'s and American F.O.O. procedure. In certain cases, too, batteries have been neutralized by direct fire by destroyers steaming close inshore.

The second task—the neutralization or destruction of enemy defenses on or covering the beach—can be carried out either by specially armed guncraft close inshore; by destroyers close inshore; or by larger ships, either by direct fire on the flanks or by indirect fire over the heads of the infantry in their assaulting craft.

*Landing and Initial Advance.* During the second of these three main periods in support of a seaborne assault—the landing and advance up to the capture of the initial covering position—the nature of naval support fire changes to engagement of the inland targets by indirect fire. Great care is necessary to avoid endangering one's own troops. F.O.O.'s will be established ashore as soon as possible. Until this, all observation must be from the air, but once F.O.O.'s are ashore, the quality of Naval supporting can be expected to improve. Targets will be mainly of the nature of direct fire on the flanks, counter battery, and harassing fire on inland areas known to contain concentrations of enemy vehicles or personnel.

*Advance Inland.* During the third period—support of the advance inland or of the fight to retain the covering position—naval gunfire, using F.O.O. spotting, will tend in the main to engage inland area targets in indirect fire. If the fight for the covering position is protracted and violent, however, more aggressive fire will be necessary, and naval gunfire can be of infinite value.

Good examples of this can be seen in Mediterranean operations: notably, in the engagement by the U.S.S. *Savannah* and other cruisers and destroyers off Gela

This German mobile flak gun, used in action against Allied landing craft, was knocked out by Naval gunners supporting a landing in Italy, September, 1943.



British Official Photo



in Sicily, when German tanks broke right through to the beaches and were stopped and routed by 6-inch fire from the cruisers; and by naval gunfire, in support of the Salerno landing, which culminated in the bombardment close inshore by the battleships *Warspite* and *Valiant*. In Sicily, during the advance inland from Scoglitti, a U.S. destroyer, providing supporting indirect fire, engaged two tank targets in quick succession. Three salvos were fired at each target, the third of which hit in each case. F.O.O. reports were: first target, "Very nice"; second target, "Many tanks destroyed."

**Diversion.** The other type of fire in support of a sea-borne assault which has not yet been mentioned is fire on some area well away from the scene of a main landing, designed as a diversion so as to confuse the enemy of the attackers' intentions and to delay him committing his reserves. Such an operation was carried out by the battleships *Howe* and *King George V* when they bombarded Trapani at the western end of Sicily in the early stages of the Sicilian landings.

### 3. ADVANCE ALONG A COAST LINE

Naval support of an army advance along a coast line may take many forms, and is usually a combination of the types of fire already discussed. This fire may take the form of direct support of advancing troops, (i.e., neutralization or destruction of enemy strong points or defended areas holding them up); alternatively, it may be direct or indirect bombardment of his lines of communication, or of his reinforcements or of his retreating troops, or of dumps and supply bases. All types of fire will probably be required. Indirect bombardment with F.O.O. spotting will be used for targets close to the attackers' own lines. Indirect bombardment with air observation may be required for targets farther afield. Other cases may occur where direct fire close inshore may be possible.

In December, 1940, during General Wavell's first advance into Cyrenaica, Bardia had been by-passed and invested with two or three Italian divisions inside. When the assault was mounted, the plan of attack was for the spearhead to force the defenses and drive straight to the town in the south of the defended area. Up to two Italian divisions were encamped in the northern half of the defended area, and any formed attack on the flank of the British spearhead as it drove forward to the town might have had disastrous effects.

Admiral Sir Andrew Cunningham, Commander in Chief of the Mediterranean Fleet, at once proposed the intervention of the British Battle Fleet. In consequence, as the land assault developed, the *Warspite*, *Barham* and *Valiant*—the "great ships" as Mr. Winston Churchill likes to call the battleships—opened fire with their 15-inch guns on the northern area. The effect was tremendous. The Italian divisions were at that time beginning to form up for the counterattack. When the naval gunfire started, they at once went to ground and appeared only the next day to surrender.

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*The landing (at Gela) might have met with disaster, but at some point, word of the enemy attack reached a destroyer off shore, and the naval guns were turned into the tanks. It is not known how many tanks were knocked out in this manner, but the destroyer continued pounding the tanks until dark, when the division made a counterattack and pushed the enemy back. A later count disclosed that 84 enemy tanks, 14 of them "tigers," were knocked out in the olive groves around Gela.*

—"U. S. Seventh Army in Sicily"—The Cavalry Journal, September-October, 1943.

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Again during General Wavell's first advance into Cyrenaica, the retreating Italians had to pass along a single road close to the shore immediately before reaching Sollum. This road was kept under almost continual bombardment by destroyers and old Yangtze River gunboats lying close inshore, and heavy casualties were inflicted. When the gunboat *Aphis* was bombarding, she was so close inshore that even the stokers off watch came up armed with rifles to join in the fun.

Before Bardia was captured early in 1941 the small port was continually bombarded to ensure that no enemy escaped by sea. At one time, the gunboat *Ladybird* went so close inshore that the Italians could not depress the coast defense guns far enough to hit her. In the words of the Admiral in Command, who was lying outside, "From the noise and explosions heard it was obvious that *Ladybird* was having a good time."

Again in the North African campaign, naval bombardment was used on this narrow coast road to hold up advancing panzer divisions, and great destruction was wreaked among the tanks. At one particularly vital time, the German advance was completely held up for 24 hours. Great execution was also done among tank "laagers" and dumps at night by cruisers using indirect fire. From spotting, provided by naval aircraft, the targets were found and illuminated.

During the Sicilian campaign, fire by the *Roberts*, a 15-inch monitor, blocked the railroad and coast road at Taormina by causing a landslide.

Fine examples of this type of bombardment have occurred in the Aleutians, where battleships, cruisers and destroyers were used, and in the Solomons, where, because of the deep jungle, most bombardments were carried out in direct fire at close range. In the Solomons, U.S. Marines had captured Gavutu Island, and were attempting to capture Tanambogo Island, connected to it by a causeway, but were being held up by heavy machine gun fire. A destroyer closed Tanambogo Island and opened heavy fire at close range. The machine gun fire ceased, and the Marines, advancing over the causeway, captured the island.



# Amphibious Operation

*by Brigadier J. G. Smyth, V.C., M.C.\**

The Sicilian landings: dawn, July 10, 1943.



British Official Photo.

THERE is no operation of war that requires more careful planning and thorough preparation than a combined, or amphibious, operation.

The reason is not difficult to find. An amphibious operation involves the close coöperation and coördination of all three services—the Navy, Army and Air Force. Moreover, it is always a hazardous undertaking. There are so many ways in which it may go wrong, any one of which may result in entire failure.

A land operation may fail in several places, and yet succeed if a successful breakthrough is effected in one place. An amphibious operation against a hostile shore can succeed only with detailed planning, some element of surprise, and well trained troops.

The Japanese made great use of sea landings in their conquest of Malaya and Singapore in the present war. The troops taking part had undergone at least a year's special training at Formosa and Hainan before they undertook these landings.

## PREPARATION AND EQUIPMENT

The first requirements for a successful amphibious operation are sufficient shipping and specially designed self-propelled landing craft to put troops, tanks, guns and equipment ashore in adequate numbers to over-

come the beach defenses and establish themselves firmly in sufficient depth inland.

Naval supremacy must be assured at least in the actual area of operations. Air cover must be given to the ships in transit and to the troops at the difficult time of disembarkation on the beaches. It must be continued during the following period, when all surprise is at an end and a mass of shipping is standing offshore ready to land reinforcements and heavy equipment.

The landing area must be chosen carefully. It must contain beaches at which landings are possible but which are not too obvious. It must certainly contain two or more ports at which heavy equipment and supplies can be landed after the beach landings have been made good. These ports will almost certainly have been put out of action by the enemy and it will take some days to get them going again. Most of the dock facilities will probably have been destroyed beyond repair and will have to be replaced.

All the above points have to be considered and allowed for in making the plan.

## TROOP TRAINING AND ASSEMBLY

It is assumed that the objective has been decided upon, that the necessary shipping is available, that landing craft of the necessary type and in sufficient quantities have been constructed and that the essential sea and air supremacy in the area of the operation can be assured.

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The next step is to provide troops for the operation and to put them through an intensive course of training. There are now highly trained Naval officers and ratings whose special task it is to train the troops in the use of boat and barges and in embarking and disembarking.

It is always difficult to keep such training secret and not give away the fact that a big seaborne expedition is impending.

The expedition then has to be assembled at ports within striking distance of the selected objective. The nearer these ports are to this objective the better, both from the point of view of fighter cover and the length of the sea voyage. In the invasion of Sicily, fighters based on Malta and Pantellaria could cover most of the island.

A short sea voyage is advantageous from many points of view. In certain cases it may even be possible to take the troops across the whole distance in their landing craft. For this, however, a short sea voyage and a calm sea are necessary. Usually the troops will have to start in transports and tranship to their landing craft at a later stage.

If the voyage from the assembly ports to the objective is so long that it cannot be completed within the hours of darkness of one night, then it is almost certain that the expedition will be spotted and all further surprise will be lost.

#### SEA AND AIR MASTERY

The next step is to gain sea and air mastery over the area in which the operation is to take place. In the case of Sicily the Allied fleets had established a complete naval supremacy in the Mediterranean. This supremacy was so complete that the Italian fleet never dared to issue out to dispute it.

The Allied Air Forces then set about gaining air superiority. This they did by concentrated air attacks on all the Sicilian airfields. At the same time, they kept up a degree of surprise by bombarding other targets. Their methods were so successful that the enormous convoy of some 3,000 ships made the voyage practically unmolested and undetected.

Success was due to the observance of that old principle of war, *concentration of superior numbers at the decisive point*, and to the *close coöperation of all three Services—Navy, Army and Air Force*.

Needless to say, a deep study has to be made of tides and weather and of every navigational problem that may arise. A slight miscalculation may throw out the whole plan.

#### AIRBORNE TROOPS

The next point that must be considered is the use to be made of airborne troops and how and when they are to be landed. It will be remembered that the Germans captured Crete with airborne troops alone, but they suffered heavy casualties, even with no fighter opposition against them.

In Sicily, parachute and gliderborne troops landed under cover of darkness before the main sea convoy. Their task was to capture vital points behind the beach defenses and to hamper the movement of reserves.

#### EMBARKATION AND NAVAL PROTECTION

The troops embark on their transports with their landing craft loaded in the same ships. The question of loading ships for an amphibious operation is an extremely important one. Cases have been known in the past where heavy stores were loaded on top of the lifting gear, without which they could not be unloaded. The ships have then had to return to the port of embarkation for re-loading.

At the given time, under cover of darkness, the expedition sets sail.

British infantry wading ashore from landing craft at a Sicilian beach. Note guide rope.



British Official Photo.



The next phase is entirely a Naval one. It consists of the assembly, protection and navigation of the convoy. The larger the number of ships, the more difficult these problems become, and this limits the size of the force that can be employed.

The transports arrive off their objectives early in the morning while it is still dark. The landing craft have to be got into the water; then the men embark. Unless the troops are very highly trained, this is a difficult business at any time; unless the weather is good and the sea calm, it is a difficult business for any troops.

#### ESTABLISHING THE BEACHHEAD

Under cover of intense sea and air bombardment the landing craft approach the beaches. This is the first critical point in an amphibious operation—getting the

Pioneers and Royal engineers wade ashore in Sicily, July, 1943.



British Official Photo.

first flight of the infantry landed successfully. It only needs unexpected obstacles, covered by unlocated machine guns, to cause such heavy losses among the landing craft that the troops either cannot land at all, or they land in such bad shape and such small numbers that they are unable to advance inland.

It will be remembered that there were several such instances in the Gallipoli campaign. In Sicily, however, the Italian troops responsible for beach defense put up so little resistance that all the landings were carried out successfully with little opposition.

After landing, the leading troops must advance inland as quickly as possible and form a bridgehead, under protection of which weapons, supplies and the remainder of the force can be landed.

By this time it will, of course, be full daylight. The Air Force turns its attention to strafing all communications leading to the beaches and to keeping as complete as possible an air umbrella over the attacking troops. The captured beaches are organized by previously detailed beach parties; and tanks, guns, ammunition, etc., are got ashore as soon as possible.

Captured ports have to be examined and immediate steps taken to put them into working order, as it is impossible to land the heavy stores, heavy guns and equipment, which a modern army requires, on open beaches.

Here again, in Sicily, the Italians failed to sabotage the port installations before they withdrew.

#### ENEMY RESERVES

Now comes the second critical period in an amphibious operation. The enemy reserves, complete with all their equipment and weapons, move forward to counter-attack.

The invaders still will be without most of their supporting weapons and will be operating in country unknown to them but well known to the defense.

As the advance progresses still further inland, it will become essential to capture and establish airfields. Otherwise the bombers will be out of range of fighter cover and will be at a disadvantage as compared to the defending Air Force.

#### CONCLUSION

From this brief survey of the main problems attendant on any amphibious operation, the immense complexities of this form of warfare can be realized.

The invasion of Sicily was to date, the biggest amphibious operation of all time. It was a triumph of careful planning and closely coordinated execution which was all the more creditable, since the forces of three nations were concerned.

It must be remembered, however, that the Italian troops did not contest the landings nor did they put up serious opposition inland. Had the beach defenses been manned by German troops the difficulties might have been greatly increased.



# General Hawkins' Notes

## The Suppression of Cavalry

AS the fateful year, 1944, begins for the world, the people of the United States are looking forward optimistically to victory within the year. The naval and military successes in the islands of the South Pacific, during the last sixteen months, and the successful land operations in North Africa, Sicily and Italy, have brought about much of this optimism.

Particularly, the following three operations have set afire the hopes of the United Nations for victory over the Axis Powers.

First, the remarkable success in winning the Battle of the Atlantic over the German U-Boats.

Second, the operations in the air which have gained for Great Britain and the United States a marked supremacy over Germany and Japan in aerial warfare. This supremacy has actuated the devastating bombing against German cities and production plants, which has led many people to believe that the war can be finished up against Germany by that means alone.

Third, but not least, the amazing success of the Russian army in repulsing the attacking German army in Russia, and the subsequent Russian victories which have resulted in driving the German armies back for hundreds of miles and almost completely off of Russian soil.

Although all of these operations have together raised Allied hopes to the point where certain victory over Germany is being predicted for 1944, and subsequently over Japan, it is really the successes of the Russian armies that have justified these hopes most reasonably. Without this success, just where could there be found a real reason for any hopes of victory in 1944, or indeed in any subsequent years? Fortunately, it is not necessary to speculate on that question.

Conceding, then, that it is the Russian army that has done the most fighting and won the most successes so far for the Allied cause, without deprecating in the least the great sacrifices made by the armed forces of Great Britain and China, and indeed our own, it is interesting and instructive to inquire into the technical methods by means of which Russia has conducted this fighting and won these successes.

This task has already been accomplished in some measure by The CAVALRY JOURNAL through its published articles written by important officers of the Russian army during the past two years. This material has been available for the benefit of military leaders if they so much as take the trouble to read and reflect upon it. It is true that not the whole but only a part of the tactical technique of the Russian army has been covered

in these articles. The CAVALRY JOURNAL has confined itself to that in which it is particularly interested, namely, the technique of armored forces and of cavalry.

In these Notes, published in every issue of The CAVALRY JOURNAL for nearly seven years, an effort has been made to evaluate the work of armored forces and cavalry, both in the Russian army and elsewhere. Believing, with the Russians, that the advent of armored forces did not substitute a new arm for the cavalry but simply provided an added arm for the prosecution of warfare, I have attempted to show that the missions of cavalry have not been taken over by armored forces to that degree that should diminish the value of cavalry for most of its very important rôles as previously established.

Germany, while preparing her army for this war, unfortunately for herself, decided to throw all her eggs in one basket and to rely on winning a quick war against unprepared opponents largely through the means of armored troops. In doing this, she did not make the mistake of neglecting her infantry and artillery, but nevertheless counted on her armored forces as the spearheads of her attacks and the principal means of her new mobility. She, therefore, suppressed her cavalry to a large extent, but not so much as those of her opponents who slavishly imitated her methods. Since her opponents did not have any armored forces to speak of, or any troops specially armed and trained to oppose her armored forces, this scheme worked very well in 1940.

When the Germans attacked Russia, however, this weakness was made manifest. The Russians had not suppressed their cavalry but had enlarged it. Furthermore, the Russians were in the process of enlarging their armored forces and their antitank forces. The Germans were superior in the air, and, for a few months, in their armored forces. At the beginning, therefore, it was only in their cavalry that the Russians were superior. But this sufficed until they could catch up with Germany in regard to the new arms—armored force and airforce. When this was done, Russia was superior as a whole, because of her added strength in cavalry. That they made good use of this advantage is patent to all who choose to read.

Despite our successes on land and sea, and despite our overwhelming and terrible attacks upon Germany from the air, it is now being acknowledged that Germany cannot be beaten to her knees until the German army is defeated and made to surrender. Although Russia continues at this writing to succeed against the German armies, the Russians insist that the British



and American armies must assist her by invasion of Europe.

When the British and American armies invade Europe, they will be opposed by strong German armies. Our armies, therefore, should be equipped with every available means of land warfare. It would be well to learn from the Russians as much as possible about their successful operations against the Germans. Nothing should be neglected. The Russians have made and are still making extensive use of cavalry. Cavalry in western and southern Europe can be made as useful as it has been in Russia—perhaps more so.

Are the United States and Great Britain going to send armies into this theater of operations without a numerous cavalry despite the example set by the Russians?

The answer to this question seems already to have been made. Great Britain and the United States appear to have suppressed their cavalry. Cavalry officers have been transferred to other branches and duties or remain in cavalry regiments that have been mechanized and virtually changed into armored forces. It must be assumed that our military leaders have considered this question carefully and have made this decision, right or wrong, based on certain conditions which prevail in this war. Probably, the most important factor in arriving at this decision was the fact that the fighting is overseas and not on this continent or this hemisphere. Had it been otherwise, it must be assumed that a different decision would have been made, although, as will appear later, there are some officers in our army who have, wrongly we think, lost their faith in cavalry altogether.

Good cavalry is not easy to make. It would take considerable time to produce and train a large force. This country is no longer a country of horsemen. All young men drive motor vehicles and understand gasoline engines and their upkeep. Their training for armored force, therefore, is less difficult than for cavalry. Those difficulties, however, can be overcome, as has been shown in the regular cavalry. Had the necessary steps been taken in 1940 or even 1941 to increase our cavalry, a large and formidable force would now be available. The real reason for not doing this was the difficulty of transportation overseas. In 1940 and 1941, shipping was in a critical condition. Ships were being lost faster than they were being built. Although, at this writing, that situation has changed, at that time the outcome could not be foreseen. The difficulty of getting cavalry overseas was therefore considered insurmountable. Our leaders may have been right.

Nevertheless, there are many officers in our army who were very ready to see those difficulties because of their erroneous disbelief in cavalry. What the effect of our disuse of cavalry in this war will have on the future and whether cavalry will ever again be maintained in our army even for possible military use on this continent, is hard to say.

In nearly all of my Notes I have been protesting against the suppression of cavalry in the British and American armies. My efforts, right or wrong, have fallen on barren ground.

In the history of American and British military campaigns, we can find many examples of the failure of military leaders to provide their armies with numerous and up-to-date cavalry.

During our War for Independence, sometimes improperly called The American Revolution, General Washington was strangely blind to the importance of an American type of cavalry which could easily have been formed from the many horsemen and horses in the Colonies and supplied with abundance of forage to be found almost everywhere. The truth is that Washington as a general, during the campaigns of 1776 and 1777, displayed a strategical and tactical dullness that was exceeded only by that of his opponents, Sir William Howe and Sir Henry Clinton.\*

\*"Washington and Cavalry," *Studies Military and Diplomatic*, by Charles Frances Adams, published by The Macmillan Company, 1911.

### "Washington and Cavalry"

Summarizing the campaign of 1777. . . . Trevelyan says that if Washington had begun the campaign with a respectable force of cavalry, numerous enough to cover his own front and watch the movements of the enemy, his advance guard need never have been surprised at Paoli and even Brandywine might have told another tale." He then adds that Washington, during the Valley Forge winter, gave much of both time and thought to the creation of such a force. The organization of what was subsequently known as "Lee's Legion" resulted. . . . Yet that very corps . . . emphasizes forcibly Washington's limitations as a cavalry leader, and his failure to grasp in a large way the part which a sufficient and effective mounted service, both might and should have played in the general field of the operations which it devolved on him to conduct. . . .

In view of what subsequently took place during the War of Secession in this country . . . it is useless to say that this (cavalry) was impracticable; and the question next presents itself—Who was responsible for this strategic and military shortcoming? . . . The obvious objection will, of course, next be advanced that the keep of horses is costly, and Washington, when not wholly destitute, was always short of funds. This hardly merits attention. The Connecticut cavalry were dismissed and sent home on the specific ground that horses were thought to be of no use in the operations then in hand. The riders were invited to serve on foot. Yet only a month later, because of the lack of even a pretence of a mounted service, Washington's advanced line was flanked, and the very flower of his army needlessly sacrificed. . . . In the next place, Washington did not then, nor afterwards, cry aloud for eyes and ears for his army, and have them denied him on the score of cost. . . . Finally, later on, the item of cost did not, in 1780 to 1782, prove an insuperable obstacle in the way of the development of a most effective mounted service in the Southern Department; though compared with Greene's, Washington's camp chest was a purse of fortunes. . . .

—CHARLES FRANCES ADAMS,  
"Studies Military and Diplomatic."



It was not only the failure in regard to cavalry that was so distressing. In the campaign that was enacted in and about what are now the cities of New York and Brooklyn during the months of August, September and October, 1766—and particularly during the days of August 26-29, when the Battle of Long Island was fought—Washington displayed such errors of judgment that he involved his army in almost certain disaster and disgrace, and the American cause, from every reasonable standpoint, should then and there have perished. But luck intervened. Washington and the patriot army were saved by the extraordinary procrastination, hesitation and incompetence of the British army and navy leaders.

Interrupted by wholly inconsistent and contradictory flashes of brilliance, the whole campaign of 1776 and 1777 was fought in the same dull way. The saving grace was that whatever were the mistakes or failures of Washington they were invariably compensated for and exceeded by those of his opponent, Major General William Howe. It would probably be not far from the mark to say that Washington owed his final success, not to his superior generalship, but to his lofty and noble character, his integrity of mind, his high sense of duty and his fearlessness in expressing his views to his countrymen. In point of character, he was very superior to his British opponents.

Washington's conception of the rôle of cavalry was undoubtedly derived from his reading of the campaigns of Frederick The Great. In fact, the whole training and conduct of the Continental Army was so unfortunately influenced by Prussian officers that this alone nearly wrecked the cause of independence. The American army should have fought according to its own genius, its own conceptions, its own terrain and the characteristics of its own people, rather than to have tried to imitate the methods of the Prussians in Europe.

A large cavalry arm should have been formed. But it should have been American in its training and tactical conceptions and not Prussian. Washington rejected the whole idea of cavalry because his only idea of cavalry was that of the Prussian cavalry. Indeed, the Prussian cavalry was not suited to the tasks that would have been imposed upon it in the American War of Independence. So far, Washington was right. He failed, however, to appreciate the great advantages that he would have enjoyed if he had formed a numerous corps of American cavalry to be used as he saw fit and not according to any preconceived or European ideas.

The lack of cavalry in Washington's campaigns exposed his army to frequent surprises and near disasters. Without cavalry, he used infantry detachments for reconnaissance in force, for delaying actions, or for striking suddenly and with surprise at the sensitive spot of his enemy's line in the midst of battle—all cavalry missions. And consequently, he suffered disasters which, as at the Brandywine and at Peoli, nearly cost him the destruction of his army.

The cavalry which Washington needed was an irregular cavalry such as finally came into being under Daniel Morgan in the latter part of the War of Independence in the Carolinas. The irregular mounted troops of the Boers in South Africa in the years 1900-01 would have served the purpose well.

Washington was practically without cavalry, though not totally so. Late in the year 1777, the Polish officer Count Casimir Pulaski, commonly credited as the first Chief of Cavalry in the Army of the United States, was appointed a brigadier general in command of the cavalry that Congress had authorized to be formed. Pulaski was a dashing and brilliant soldier, but he was not fitted to command American troops. His efforts were frustrated not entirely by his own failures but largely by the indifference of Washington to his proposals to form a large and effective cavalry corps. No such corps was ever formed, and Pulaski resigned his nebulous command in March, 1778. He attempted to raise an independent force to operate in the south, and met some success until he was mortally wounded, Oct. 9, 1779, in front of Savannah, Georgia.

Although Washington's Continental Army had to operate without cavalry, the British army under General Howe did have a small force of dragoons. Fortunately for the patriot army, it was trained according to European principles and accomplished very little in America.

While the Continental Army did without cavalry, it is pertinent to remark that in the operations in the Carolinas from May, 1780, to September, 1782, the patriot irregular cavalry under such men as Light Horse Harry Lee and Daniel Morgan were largely responsible for the failure of the British campaign, even though the brilliant Tarleton used mounted troops for the British cause in that campaign quite as effectively as did his American opponents. But had Tarleton's mounted troops not been compensated for by American irregular cavalry, the southern campaign would certainly have been lost to the Americans.

Another example of the stubbornness of ignorance is the attitude taken by the commander of the American forces in the Philippine Insurrection in the year 1899. When it became obvious that the insurrection could not be averted, or shortly after it began in February, 1899, the War Department offered to send several large cavalry regiments to Manila. Major General Otis, in command, with about ten thousand troops, volunteers and regulars, without any cavalry except a half regiment of the 4th Cavalry, dismounted and acting as infantry, was confronted by a Filipino army of some thirty thousand men under Aguinaldo, ill-equipped and poorly trained. There was no question in the minds of our men that we could defend Manila from any attack by the Filipinos. But, if we wished to attack and destroy Aguinaldo's army while it was all assembled in the vicinity of Manila, and thus prevent it from scattering throughout Luzon and turning the whole campaign into a guerilla war, so very difficult and tedious to over-



come, cavalry was necessary. General Otis rejected the offer of the War Department with the statement that cavalry could not operate in the country of Luzon and would be of no use to him.

This extraordinary statement, so utterly refuted in the later months of that year when it was too late to catch the Filipino army assembled in one locality, must have been induced only by ignorance and prejudice. Three regiments of cavalry boldly led in coöperation with our other troops could have destroyed the Filipino's resistance in a few weeks. Instead of that, the Filipino army, when attacked by our forces, separated into detachments of various strength and maintained a guerilla warfare for nearly three years.

In the War of 1812, we suffered again from the lack of cavalry of an American quality.

In the Mexican War we had neither a sufficient number of cavalry nor skill in the proper use of what we had.

In our Civil War, ignorance on the part of our leaders as to the proper use of cavalry, contrasted with brilliant cavalry exploits in the Confederate army during the first two years of the war, gave the Confederates a decided advantage in that early period.

With certain remarkable exceptions (such as the Confederate cavalry in the first two years of the American Civil War and Federal cavalry during the last two years), the whole history of cavalry since the time of Napoleon has shown lack of progress and skill in the science of its employment. This has by no means been due only to the failure of those of our military leaders who came from other branches of the service. It has been due largely to the failure of our cavalry leaders themselves. It is true that the example set by Washington in his non-appreciation of cavalry set a traditional indifference in our army to the value and even necessity for large numbers of cavalry. But lack of leadership in this regard in the cavalry itself is also responsible. The Civil War developed on both sides some very fine cavalry leaders. After that, however, the cavalry slumped down into an attitude of complacent self-satisfaction and non-progression until a few years before the present war commenced.

This same charge can be made against our infantry which, as late as 1917, was using the battle line, as prescribed in the 1911 Infantry Drill Regulations, of one man per yard, and the absurd advances by rushes without taking advantage of cover, and sometimes deliberately across ground that afforded no cover. Thus, our tactical developments never kept abreast of the improvements in firearms.

It must be acknowledged also that the absurd jealousy, or rivalry, between the infantry and the cavalry has worked to stultify scientific progress in the theory of coöperation between the two arms, and particularly the earnest study of the employment of cavalry.

There is little wonder, therefore, that when armored forces gradually developed, many officers of all branches

thought that this new arm could take over the whole rôle of cavalry.

Despite the lessons from Spain, where Franco's forces had finally to use considerable cavalry numbers in order to win, we tumbled headlong into the error, committed by both Germany and Great Britain, but avoided by Russia, of suppressing our cavalry instead of increasing it.

When one tries to explain to the opponents of cavalry the value of this arm in modern warfare, he is confronted with certain stereotyped phrases such as the following: "The machine does not get tired, the horse does"; or, when one speaks of the value of a combination of armored forces with cavalry, the reply is: "The cavalry cannot keep up with armored vehicles." Without any further consideration the whole subject is dismissed.

Of course it should be unnecessary to explain here why these statements are so utterly misleading. One might as well say that since the machine does not get tired and the foot soldier does, there is no use for infantry. The idea that cavalry cannot keep up with armored forces is refuted by the frequent combinations of cavalry and armored forces in Russia. When in contact or near contact with the enemy no tanks or armored vehicles of any kind are going to travel on roads at thirty or forty miles an hour in the direction of the enemy. In wide encircling movements, cavalry can often be assembled beforehand in a convenient adjacent area or moved on interior lines across country. When cavalry and armored forces cannot be kept close together, the cavalry can be given a separate mission and moved on interior lines to connect the large infantry formations with the armored forces, thus acting as a link.

The various ways in which our modern cavalry could help our infantry, support our armored forces, or undertake separate but coöperative missions, have been recited frequently in these Notes or other articles printed in *The Cavalry Journal*. If England had not decided to suppress cavalry five or six or more years ago she could have had plenty of it now in England ready for any great operations on the continent. Whether the British cavalry, had it been maintained, would have been of the type necessary for success in modern war, by which is meant a more or less irregular cavalry operating in great numbers but dispersed into small units, is open to question.

As it is, it is certain now that, right or wrong, wise or unwise, any large British and American armies that may invade Europe presumably will do so without the benefit of any adequate force of cavalry. We hope they may succeed without it. Washington won his seven year campaign against the British without it. But it is now obvious to any intelligent military student that the lack of cavalry exposed his army to defeat and almost to disaster on many occasions, and that although he eventually won, the lack of a cavalry peculiar to America cost many lives and prolonged the war by several years.



# Editorial Comment

## On Foot and Horseback

The following editorial from the November 15th issue of *The Stars and Stripes* in London, was received too late for the last issue of *THE CAVALRY JOURNAL*. Although the editorial is now two months old, it still warrants re-publication. In fact, current news dispatches of more recent Russian successes are replete with Cossack cavalry actions against the faltering German lines:

In the days before war, advocates of air power and mechanization held the center of the stage.

Then came the fall of Poland, the Battle of France and the Battle of Britain. Tanks and air power were mentioned in screaming headlines. Irresistible was the word used by those in high places, and irresistible they seemed to be.

Then came North Africa, and the foot soldier came back into the headlines. With a bazooka gun on his shoulder, he proved his need and his worth. Artillery again gave him full support.

Now the Cossacks are back in the news, and exactly a week after the break-through at Kiev, three divisions of Cossacks stormed into the key rail junction of Zhitomir, 80 miles to the west. This is the second great victory won by horse cavalry on the Russian front in the past two weeks. After the break-through at Melitopol, when the German army was moving hastily westwards towards Kherson and the Dnieper, the Russians pursued them, not with armored forces which might become isolated from the Russian infantry to the rear, but with cavalry—with large formations of highly trained, heavily armed cavalry. And these Cossacks not only succeeded in harrying and cutting to pieces the rearward units of the retreating German forces, but they were also directly responsible for the fall of the Perekop Isthmus. Arriving at the isthmus two days before the German defenders expected them, they captured 6,000 Germans and the gateway to the Crimea.

Of course this doesn't mean that infantry, artillery and horse cavalry will now take over from the tanks and the planes; but it does mean that the best arm should be used for each job, and intelligent leadership will always see to it that the right arm is in position to be used when the opportunity for its use is at hand. In central Russia today, cavalry is being properly used. Cars and tanks are no substitute, because cars cannot go over the open country and tanks are far too cumbersome. In Italy the Apennine barrier limits the use of tanks; so the Queen of Services is carrying the brunt of battle.

In 1939 some of the experts predicted that the war

we are now fighting would start where the last one ended and end where the last one began. History is proving there was some truth in that statement.

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## Cossacks Cutting German Escape

London (Saturday), Jan. 15 (AP). Mozyr and Kalinkovichi, 12 miles apart, were captured on the fourth day of an offensive that tore through a heavily defended area.

The Moscow radio reported Cossack cavalry were speeding over the snow-covered ground well west of both towns, cutting off the escape route of Germans fleeing from the bastion cities.

Kalinkovichi is particularly important as a junction on the Moscow-Warsaw railway and the Leningrad-Odessa line. Its capture, with Mozyr, cleared another sector on the north-south route between Zhlobin and Berdichev, which the Russians need for communication between their White Russian and Ukrainian forces.

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## On the Air

The *CAVALRY JOURNAL* is doing its utmost to keep its readers up to date on information of cavalry actions in the present war. It is gratifying to hear radio commentators quoting the *JOURNAL* over the air. It helps to keep an uninformed public informed.

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## The Real Meaning of "Permissible Speeds"

Unit commanders who make sure their drivers have seen the "Caution" plates on automotive equipment and memorized the "permissible speeds" will avoid many maintenance woes. In some instances, they will escape the personal disgrace of motors needlessly but hopelessly wrecked.

Beside the instrument panel (or nearby, on the dash) all cars and trucks carry a table of the maximum permissible road speeds for the various gear positions. Of course, it is important that the operator observe these posted speeds at all times, but it is no less than vitally imperative that he does so *when descending a long hill in second gear*. There are literally scores of instances where the motors of army trucks have been reduced to broken, smoking junk while going down mountains in second, although the road speed of the vehicle at no time exceeded 35 miles an hour.

For example, as long as an army truck with a permissible speed of 11 miles an hour in second gear, holds to 11 miles an hour, its engine turns over at 2750



R.P.M. That is a safe number of revolutions and will do the motor no harm.

But suppose the driver, with his gear in second for a downhill run, wants to keep up with some lighter vehicle ahead of him. He may never have heard about "permissible speeds," and thinks he is above criticism if he stays under a road speed of 35 miles an hour. It happens, unfortunately, that at 35 miles an hour his engine will be turning over at 8200 R.P.M. If he maintains this conservative road speed for no more than a relatively short distance, it will mean scored pistons and cylinder walls, stretched or broken connecting rods, ruined bearings, probably damage to the shaft, and, generally speaking, one veritable mess. Among other things, the moulded materials in the clutch driving disk may explode if 5600 R.P.M. are passed.

To emphasize the damage that can occur in a truck motor turning over at 8200 R.P.M., it can be pointed out that this motor speed, if applied through high gear instead of second, would drive the truck 105 miles an hour.

The convoy leader takes on a big responsibility as he pushes his jeep over the crest and begins the run downhill. If the grade is steep enough to call for a shift of gear, he should never exceed the lowest permissible road speed for any truck behind him.

### Cavalry Journal Material

A tabulation of comments on material published in 1943, as taken from recent "proxy cards," produces an interesting comparison with a similar tabulation for the preceding year.

As usual, the majority of proxy cards gave no answer to the query, "What article did you like best?" Also, it must be remembered that a large proportion of members of the Cavalry Association are out of the country, and, as specified in the Constitution and By-laws, proxy cards were mailed only to those members "within the continental limits of the United States."

	1942	1943
Current War and Accounts of Personal Combat Experience .....	134	87
Cavalry (with a large proportion for 1943 emphasizing Russian tactics) .....	120	172
Tank and Mechanized Warfare .....	107	67
Reconnaissance .....	57	147
"All Good" .....	41	29
Training methods, small unit tactics, and weapons .....	24	5
Air-Tank-Horse in Reconnaissance .....	10	..
Tank-Cavalry Coöperation .....	..	9
Miscellaneous .....	44	45
Total .....	539	561

Every effort has been and is being made to obtain as much material as possible of combat experience—espe-

cially of U. S. troops. This should become increasingly available as U. S. forces participate ever more actively in the prosecution of the war.

Current editorial policy is to publish all available material on cavalry action in the present war; reconnaissance; armored warfare (tank, antitank and mechanized); interesting accounts of campaigns or battle experience, particularly those that show the development of new tactics; and instructional articles from the training centers.

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### A Book On Reconnaissance

The urgent need for trained reconnaissance personnel is one of the vital lessons learned from the Tunisian Campaign. For the past year and a half, *The Cavalry Journal* has published at least one good reconnaissance article in each issue, but to date there is not a single authoritative book on the subject.

In view of the tremendous demand from officers and units for information on this subject, the best of the material published in recent issues of *The Cavalry Journal* has been collected and will soon be published in inexpensive book form of convenient size.

Many of these articles are based upon personal combat experience. All of them contain valuable information and training data for reconnaissance units. They include training material for the squadron, troop, company and platoon; reconnaissance methods for the infantry division, the armored units, and the T-D battalions; reconnaissance peculiar to the desert, the jungle, and street fighting; aerial reconnaissance and photographic reconnaissance.

Authors will include such well known officers as Major General C. L. Scott, Brigadier General Hamilton S. Hawkins, Colonel Peter C. Hains, III, Lt. Colonel Charles J. Hoy, Lt. Colonel Harry W. Candler, Lt. Colonel Allen D. Hulse, Lt. Colonel Brainard S. Cook, Lt. Colonel R. G. Fergusson, Lt. Colonel Bruce Palmer, Major James W. Bellah, Major Willard O. Foster, and others.

Announcement will be made as soon as publication date and price are known. Have your copy reserved now.

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### Your Cavalry Journal Address

Enrollment in the Cavalry Association has increased three times as much during 1943 as it did during 1942. This has more than doubled the circulation of *The Cavalry Journal* since this country declared war in December, 1941.

If your *JOURNAL* is not reaching you, if you have borrowed a friend's or are reading this at the Club, or if your copy has been forwarded one or more times before it has reached you—then tear out the change-of-address card in this issue and send in your correct address. The change will be made at once, and the chances are that the next issue will reach you promptly.



# The Language of the Leader

by Lieutenant Vernon Pizer

FROM a corporal of infantry to a colonel of the medical corps, from the Alcan Highway to Guadalcanal, the one constant unchanging factor is language. The language of the military leader is the same whether it is expressed in Russian, Polish, or English. Battle commands, basic instruction, military law, administration—all are dependent upon language. An army could not exist, much less function well, without it. War serves to swell the importance of language.

The leader must be, first of all, positive and decisive in his speech. He must not vacillate or sit on a fence. He must banish *maybe*, *perhaps*, *I don't think so*, and similar words and phrases. He must be a yes-man and a no-man. Rather than say, "I don't believe you can fix the truck, corporal, but you may try," the leader says, "Go ahead and fix the truck, corporal. I know you can do it." The chances are the truck will be fixed in the latter case. At any rate, the corporal feels that he is regarded as competent and reliable, and will strive diligently to maintain that impression. Instead of saying, "I don't know whether or not we can give you a furlough, Jones; I'll have to think it over," the leader says, "I can't give you a furlough now, Jones, because it will put us over the allowable 15 per cent. I will give you a 10-day furlough commencing February 15th."

In the second place, leaders never "talk down." The leader doesn't flounder around for one syllable words with which to express himself to his men. He credits them with sufficient intelligence to understand language of average difficulty. Men sense "talking down," and they resent it. No one need be told that resentment in an organization plays havoc with morale. On the other hand, leaders don't lend themselves to flights of bombast. They don't take refuge behind a barrage of six-bit words. They don't use big words to impress their superiority and education upon their men.

The leader uses such expressions as "bunk fatigue," "gig," etc., instead of using less expressive, stilted terms. Why tell a man to "depress the accelerator" when you might just as easily tell him to "step on the gas"? Familiar army slang is generally a lot more expressive of the situation than stereotyped phrases, and if your men ordinarily use it, why try to be pedagogical?

The leader does not, however, use vulgar expressions. The idea that a good officer is one who can cuss along with his men is more fancy than fact. Swearing a blue streak will not make your men think you are tough and virile. It will make them lose respect for you, and respect is a big tough vertebra along the backbone of discipline.

The third point to be made is that language, particularly in military correspondence, should be terse,

pithy, and unambiguous. All statements can be made in more than one way. There is, though, only *one* best way. Back in 1757, Marshal Maurice De Saxe said in *My Reverie Upon the Art of War*, "His (the general's) orders should be short and simple. . . ."

If you were a busy officer in the theater of operations, would you prefer to receive a communication reading, "It is requested that the undersigned soldier be granted permission to proceed in advance of the unit for the purpose of conducting reconnaissance"; or would you prefer to read, "Request permission to reconnoiter in advance of units"? The shorter statement gives all of the information contained in the clumsy, longer statement. In addition, the second wording has the advantages of brevity and clarity. It comes right to the point without beating around the bush.

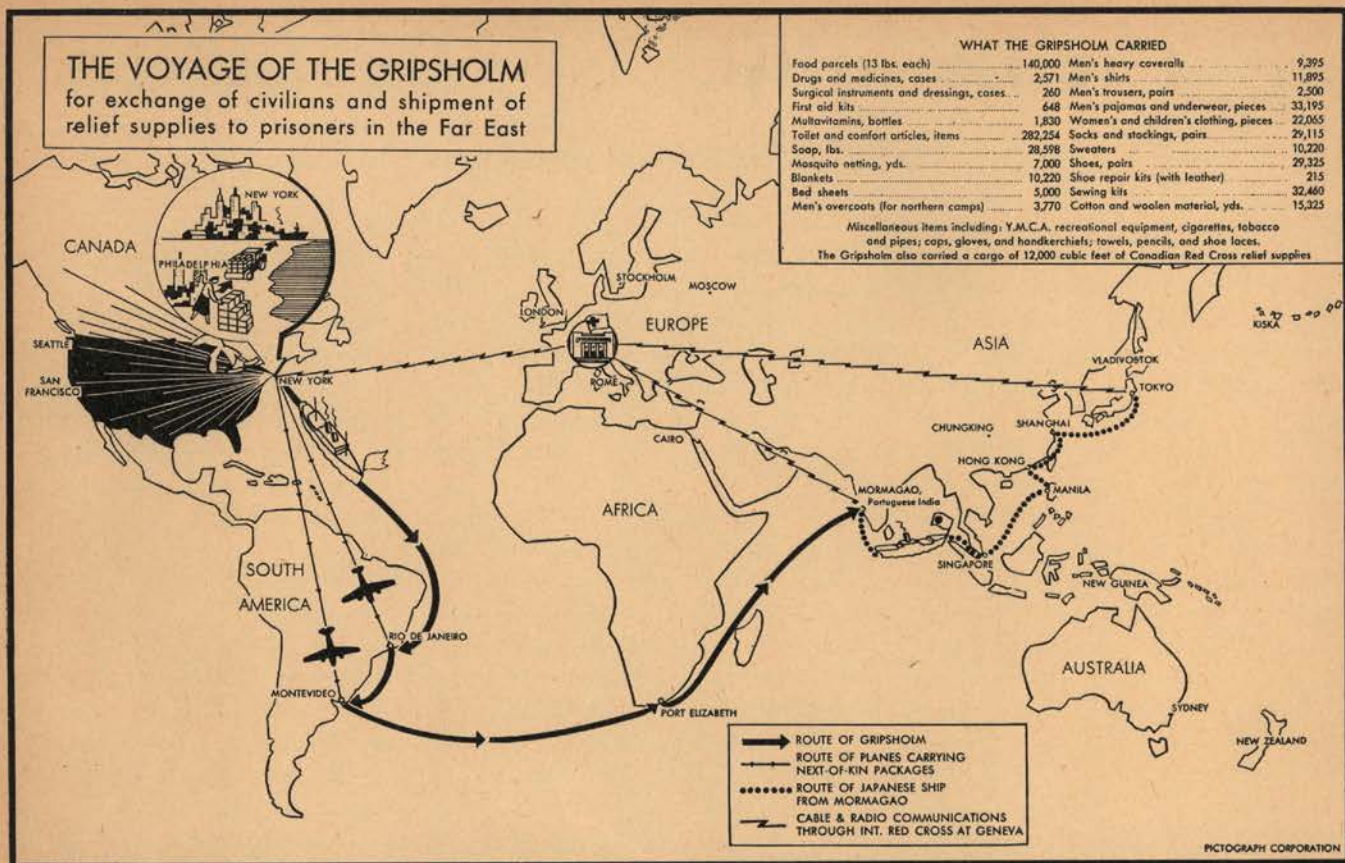
It must be borne in mind, however, that brevity can be overdone and that it may result in ambiguity. Attempts at achieving the so-called telegraphic style, particularly in orders and field messages, may result in obscuring the intended meaning. Western Union may make an additional charge if you add *a*, or *an*, or *the* to a personal message; but field messages impose no such economic restrictions. What is the meaning of, "C.O. — Infantry, assembled troops in bivouac area and fortified sector"? Did the C.O. fortify *the* bivouac area, or did he assemble troops in the bivouac area and *the* fortified sector? The addition of *the* to the original message would have made the meaning clear and would not have permitted variations of the interpretation.

The final and most subtle point is that the leader uses words which convey to the listener or the reader the meaning that is intended. He does not use vague terms, or words that have several definitions. Instead of saying that a regimental review is "good," he says it is "precisely-executed" or "colorful." Otherwise, one of his listeners may picture the review as being precisely executed, while the other thinks of it as being colorful, with the result that each goes his way thinking that something different has been said.

Most people will say that an officer, to be efficient, must be a man of vision; yet the most inept recruit, if he is not blind, has vision. Leaders do not speak in generalities; they use specific language. Military instructors who choose their words indiscriminately or use them loosely will have poorly taught and perhaps actually mistaught soldiers. Orders containing terms that permit varied definitions may be misinterpreted, and misinterpreted orders can lose battles—have, in fact, lost battles.

Words are tools that should be used with craftsmanship. They cannot be avoided; they must be used; therefore, use them well.





# U. S. Prisoners of War

## Gripsholm Cargo Distributed

Washington, D. C., December 23—Word has just been received in the United States that American prisoners in the Philippines began receiving during the first half of December, the food parcels and other relief supplies trans-shipped from the exchange ship, *Gripsholm*.

A cable has been received by the American Red Cross from Geneva stating that the International Red Cross delegate in Japan, Dr. Fritz Paravicini, was making every effort to dispatch in time for Christmas one food parcel for each United Nations military prisoner of war and civilian internee detained in Japan proper, and in Korea, Taiwan and Manchuria.

In Europe, American prisoners of war and civilian internees were sent 10,000 special Christmas packages containing the "makings" of a holiday feast: chicken, cheese, fruit cake, candy, jam, nuts, coffee and cigarettes. Christmas candles and two handkerchiefs were also included. To supplement regular food packages, received weekly through the International Red Cross Committee, 10,000 morale gifts—ocarinas and puzzles—were sent by the Junior Red Cross.

(The letters from which the following extracts were taken have been furnished to the American Red Cross by relatives. All prisoner of war mail is censored by the Detaining Power.)

Zentsuji War Prison Camp (Japan)  
January 23, 1943

"This is my first opportunity of writing, other than my radio message in February 1942 and printed card after arrival at (censored). I was active in the organization of the 121st Regiment and in the defense of the Mountain Province. We had several encounters with the Japanese but were forced in May to evacuate Bontoc for the higher mountain region in Ifugao territory. With the earlier fall of Bataan and Corregidor, orders were issued by General Wainwright to cease all hostilities and for the immediate surrender of the forces of the Mountain Province under Colonel Horan and of General Sharp in Mindanao. Our surrender was effected on June 3rd at Talubin near Bontoc, and consequent internment in Luzon Prison Camps. Most of my



thoughts are with you folks and I am anxious for the time when I shall be back with you."

Stalag Luft III (Germany)  
July 2, 1943

"This has to be a joint letter because we are allowed to write only three letters a month, but can receive any amount, so hope you will all write. I was shot down over France on May 29. Consider myself lucky to have escaped injury—only had a sore jaw and leg from the parachute jump, but all right now. . . . Thank God for the Red Cross—don't know what we'd do without their food parcels. Never realized I would be on the receiving end of that dollar R. C. subscription, which will be a lot more when I go home again."

Stalag Luft III (Germany)  
June 9

"As our evening meal has appeared before me since I decided to write this letter, I'll tell you what we have had tonight. Corned beef, fried potatoes and pudding. This is an average evening meal based on the contents of Red Cross parcels. For lunch we generally have 'Reich Soup' made from dehydrated turnips, beans, or peas. For breakfast we have bread and coffee. So while we have enough for the present, we will some day appreciate ham and eggs, or hamburger and fresh vegetables. I am studying philosophy, as well as German. Now I am reading Lin Yutang's *The Importance of Living*. This is an important subject for indefinitely confined prisoners of war."

Osaka Prison Camp No. 1 (Japan)  
March 4, 1943

"We have been permitted to write an 80-word letter, so don't be disappointed. I have received one letter from you and one from Ed which were very much appreciated. I am in good health and am working. I am looking forward when the war will be over so I can see you all again."

Stalag VII A (Germany)

"I was captured in Tunisia on February 17. Since that time I have endured many things seemingly impossible. My treatment here is very good; food is fairly plentiful; the scenery is nice, and the Red Cross is doing a good job in helping us boys."

Zentsuji War Prison Camp (Japan)  
February, 1943

"Our forces surrendered in Bataan, you remember, in April 1942, and we remained in the Philippines quite a while before coming here, and feel that here health conditions will be better."

Zentsuji War Prison Camp (Japan)  
November 2, 1942

This is the second time that I've had a chance to write, and this letter, the same as the first, must be con-

sidered as being for all of you and Libby. There has just arrived here in camp a shipment of Red Cross materials for prisoners of war. . . . My time during the day is spent in studying Spanish and in reviewing French and shorthand. And I've managed to improve my bridge game a little. . . . (*Zentsuji is among the best of the Japanese camps.*—Ed.)

### Camp Life Souvenir

The War Prisoners Aid of the YMCA has recently sent to the camps a notebook entitled "War-Time Log" in sufficient number so that one can be distributed to every American prisoner of war and civilian internee in Europe. The "log" has a stout binding and contains several hundred pages of blank notepaper of good quality. A note enclosed tells the prisoners that it is a "special remembrance from the folks at home," and that it is "intended to be kept as a permanent souvenir of the present unpleasantness."

In it the prisoner can keep a regular diary, write stories, make sketches or caricatures, write poetry, or even put on paper for later use letters that could not be mailed now. Many other possible uses are suggested, all with the primary object of the "log" serving as a visible link between the prisoner and the people at home.

### Can Openers

Letters from American prisoners of war to their families occasionally ask for can openers to be included in next-of-kin packages. Every fourth package now being made up in the Red Cross Packaging Centers at Philadelphia, New York, Chicago, and St. Louis contains a small can opener so that in due course a regular and ample supply will be reaching the European camps. Can openers were also included in the special Far East food packages shipped on the recent voyage of the *Gripsholm*.

## Prisoner of War Fund

### Organizations:

3d Cavalry (Mecz) . . . . .	\$197.19
317th Cavalry (inactive) . . . . .	100.00
Individual Donations . . . . .	115.00
	<hr/> \$412.19

Help our prisoners of war, by helping this fund to grow. Send your contribution direct to:

*The Cavalry Journal*

1719 K Street, N.W. WASHINGTON 6, D. C.



# South Pacific Campaign

*by Colonel C. Stanton Babcock,  
formerly attached to United States  
Embassy, Tokyo*



*Jap planes fire Allied oil dump during early phase of New Guinea campaign.*

European

## PREPARATIONS

ON the 11th of January, 1942, Imperial Headquarters in Tokyo announced that, "Because of the hostile attitude of the Netherlands Government in aiding the enemies of Japan since the outbreak of the War of Greater East Asia, the Imperial Government is compelled, against its wishes, to treat the Netherlands East Indies as an enemy, and Imperial units are now engaged in attacking certain bases in Dutch Borneo and the Celebes."

The implication was that until after the outbreak of the war, Japan had had no intention of attacking the Netherlands East Indies, in spite of the fact that Holland declared war at the same time as the British Empire and the United States. The conduct of the campaign itself, however, as well as a number of speeches and announcements by military and naval spokesmen, indicates that not only had Japan been planning the conquest of that region for many years, but that its naval construction program had actually provided for a large number of ships of the type that would be needed to carry out such a plan.

The tremendous extent of the area of the field of operations presented many difficulties. At the same

time, that very extensiveness facilitated the operations of an invading power. The Japanese made full use of all factors in their own favor, and so organized their expeditions as to minimize those factors that would benefit their enemies. The long distances involved meant that the Japanese had to maintain extended lines of communication and organize a number of expeditions to strike simultaneously at widely separated points.

Those same distances required the Dutch to defend almost equally long lines of communication and maintain garrisons at a number of different points, none of which was capable of rapid reinforcement once the campaign got under way. The small army, of some 80,000 men, available for the defense of the Netherlands East Indies had to be kept in Java, except for a few troops which were necessary for the protection and operation of outlying submarine and air bases.

In spite of the tremendous size of the South Pacific region, complete control could be obtained by the occupation of some ten key points, none of which was defended by a large garrison. Because the Japanese were on the offensive, they had the initiative and could select the time and place of attack. By concentrating



an overwhelming force they could then reduce any one point long before reinforcements could arrive from Java. The Japanese knew full well that the only thing which could have prevented the success of their campaign would have been a large air force which could attack convoys on the way to their landings, and could bomb captured bases after their occupation, and so prevent the Japanese from using them in preparation for a move to the next point.

#### COORDINATION WITH OTHER CAMPAIGNS

The High Command had divided the conquest of this area into three phases, two of which were very carefully coordinated with the concurrent campaigns in the Philippines and Malaya. The first phase, which included the capture of the American islands of Guam and Wake and the occupation of British North Borneo, had to be completed in the earliest stages of the war. The capture of Guam and Wake would effectually cut the American line of communications between Pearl Harbor and the Philippines and so prevent the troops in the Philippines from being reinforced. It was also necessary for the protection of Japan Proper, and of her communication lines to the Mandated Islands and to the eastern part of the Netherlands East Indies, where her troops would soon be in action. The occupation of British Borneo would remove submarine and air bases which could have been used to attack convoys supplying Japanese troops in the Malay peninsula.

The second phase was the occupation of outlying bases in the Netherlands, of New Guinea, and of the Bismarck Archipelago, which would put the Japanese in position to attack the islands of Java and Sumatra and to assault the mainland of Australia. These operations had to be completed by the time that Singapore fell, so that the troops which had reduced the Malay peninsula could proceed to their next objective, the capture of Sumatra and Java, without unnecessary delay. The first two phases of this campaign, then, were the responsibility of the Navy. The third phase, the taking of the main islands of the Netherlands and of Australia, was to be carried out by the Army with the cooperation of its sister service.

The execution of the first phase required a limited number of men and ships and could be accomplished at the same time that the Navy was busy escorting expeditionary forces to the Malay peninsula and attacking British air bases there to facilitate the landing of army troops. The second phase, however, could not be undertaken until the Army was well established in the Malay peninsula and the planes and aircraft-carriers used in that campaign could be released for other duties. It is for this reason, then, that the Japanese ignored the Dutch declaration of war on December 10, and chose to maintain the fiction that they had no intention of invading the Netherlands. As soon as their troops were well established in Malaya and the fall of Singapore seemed assured, the Navy organized a number of

special attack squadrons, and in a few short weeks had reduced all the outlying bases and was ready to attack the combined Allied fleet and to escort the Army in the final phase of the campaign.

#### THE FIRST PHASE

The Japanese brought overwhelming forces to bear against both Guam and Wake, and there is little of interest to record of their occupation of those unfortified outposts. The garrisons of both islands fought gallantly in spite of the hopeless odds, and the troops at Wake defended the place successfully for six hours, sunk a Japanese cruiser and a destroyer, and caused the invaders unexpectedly heavy casualties.

Japanese accounts are loud in their praise of the way in which the Americans handled the two six-inch guns, mounted near the beach, whose installation was far from complete. According to the report of the commander of the Japanese landing party, the fire control apparatus for the shore defense battery had not yet been set up, and during the action the guns were trained by opening the breech and sighting down the bore. The destruction of two enemy war vessels and the damaging of a transport by two guns fired in this slow and awkward manner excited the admiration of the Japanese officers, and all of the personal experience stories re-

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## The Conquest of the South Pacific from the Japanese point of view.

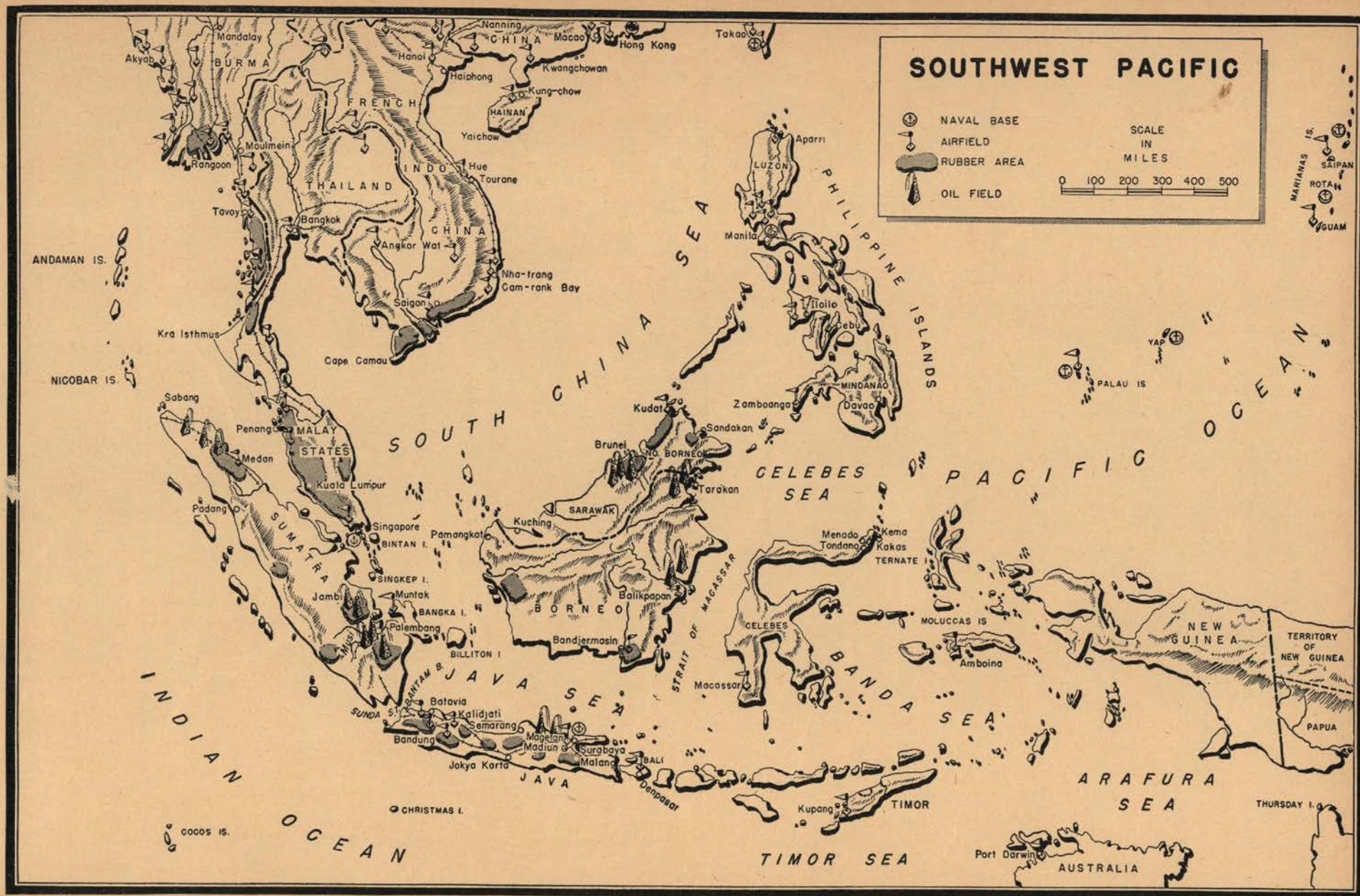
*Like the "Philippine Campaign," the "Hong Kong Campaign," and the "Malaya Campaign," written by Colonel Babcock, this account of operations in the Southwest Pacific is based on information drawn entirely from Japanese sources: official bulletins, news reports, speeches, radio commentaries, magazine articles, and personal experience accounts written by officers and men at the front. The only Allied bulletins used were those quoted in the Japanese press.*

*Colonel Babcock says: "While confined to the compound of the American Embassy in Tokyo from the outbreak of war until June 17, 1942, I was cut off from any outside news. Consequently, the preparation of this paper has not been influenced by information received through any but Japanese sources. It should also be remembered that all dates are one day advanced over those used in the United States."*

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ferred to this extraordinary feat in terms of glowing praise. It is interesting to note, however, that later accounts published by the Japanese Propaganda Ministry belittled the efforts of the defenders, characterized the defense of the island as negligible, and made every





"In almost exactly three months from the beginning of the war the Far Eastern possessions of the United States, of the British Empire, and of the Netherlands, had fallen to the Japanese."



effort to convince the Japanese public that the Americans had behaved in a cowardly manner.

On the 24th of December two small Japanese expeditions landed at Kuching and Brunei in British Borneo, and in a campaign which lasted a little more than a week overcame the few British police forces and obtained control of the entire province of Sarawak. Besides denying the British the use of bases in this region, the Japanese thus came into possession of a fine air field which was to prove invaluable to them some weeks later when they started their drive against the outlying bases of the Netherlands East Indies.

### THE SECOND PHASE

That drive began on January 11, the date of the Imperial Headquarters announcement. The first attack was directed against Menado and was followed by a succession of landings at Balikpapan, Macassar, Ambon, Kavieng, and Rabaul. The landings were carried out by groups which were similarly organized and varied only slightly in strength. A description of each engagement would be repetitious and would not contribute to the value of this report. Typical of the actions, and the most interesting from a military point of view, was the short campaign in the Celebes which began with the attack on Menado.

The Dutch garrison at Menado consisted of about 1200 men and comprised troops of all arms and services. All but 150 were native troops. The strength of the force which the Japanese organized to attack this point is one more example of the policy which they have followed throughout the war—namely, to bring an overwhelming force to bear against every point of attack. The expedition consisted of a naval landing party of 8000 men in three small transports, several cruisers and destroyers, and an aircraft-carrier. In addition, a battalion of about 400 navy parachute troops took off from the captured airdrome near Brunei and were dropped on the Dutch positions an hour or two before the landing party came ashore.

The first indication that the Dutch had of an impending attack was a furious bombardment by thirty dive bombers from the aircraft carrier accompanying the convoy. This bombing attack, just after dawn, was directed against the barracks of the Dutch garrison and the air field at Kakas, and was followed in less than an hour by the arrival of more than twenty transport planes carrying the parachute battalion.

That was the first time that parachute troops had ever been used by the Japanese, and apparently the manner in which the maneuver was carried out left a good deal to be desired. Instead of coming in, as the Germans do, three or four hundred feet over the objective on which their troops are to land, so that the men of a squad will all hit the ground within a short distance of their assembly point, these planes came over at an altitude of more than fifteen hundred feet. As a fairly strong wind was blowing, the men became badly

scattered and alighted at widely separated points, away from their leaders and far from the equipment bags which had been dropped at the same time. Some of the men were blown out to sea; others landed in a thick jungle and were unable to join their unit in time to take part in the fight. The mission of this parachute unit was to attack the beach defenses from the rear and to secure their possession prior to the arrival of the convoy. But because the personnel were so badly scattered, they were never able to organize into units large enough to execute an attack. The action did succeed, however, in throwing the Dutch into confusion, and caused them to divert to the task of rounding up the parachute troops, a part of their force which should have been employed in resisting the attack on the beach.

The convoy arrived off shore at eight o'clock in the morning, and the now familiar assault teams immediately left the first transport and raced for the beach under the protective fire of the accompanying naval vessels. The Dutch troops fought bravely, but the extent of shoreline which they had to defend was too great for the number of troops available, and they had erected practically no fortifications for the protection of their men. Their machine guns and artillery kept up a brisk fire until the leading wave of Japanese boats was about eight hundred meters from shore. Then a well-timed attack by a second squadron of dive bombers completely took the heart out of the native troops, and they broke and fled into the jungle.

The Japanese knew that what they had most to fear in all these landing operations was an air attack

Mountain artillery of the Royal Netherlands East Indies Army march to the front against Jap invaders on Java. The small Dutch garrison stationed on the islands had little chance against overwhelming enemy superiority.



Wide World Photo





Field artillery of the Royal Netherlands East Indies Army practice during maneuvers shortly before the Japanese invasion of the island of Java.

launched from other bases in the islands, rather than the ground troops with which they were immediately engaged, and they realized that it was vital to get men and matériel ashore as rapidly as possible before word of their arrival could get to the nearest Dutch air base at Balikpapan.

The commander of the expedition directed the initial landing party to maintain contact with the Dutch as they retreated towards Tondano and the air field at Kakas, and employed the bulk of his force in unloading the transports and getting supplies and equipment safely ashore. The men worked feverishly in their race against time. By the middle of the afternoon, more than half of the impedimenta had been landed, and the Japanese were in high hopes that their unloading operations might be completed and their ships gotten away before the Dutch bombers came. Their anti-aircraft batteries had been set up on shore, and fighter patrols from the aircraft-carrier were constantly circling overhead, so they felt quite sure that they would not be surprised by a sudden and unexpected attack.

About four o'clock in the afternoon, eleven big bombers came in over the hills to the west of the town, and, flying with the sun directly at their backs, were over the harbor and dropping their bombs on the transports below before the Japanese knew what had happened. As the gunners looked up at the planes roaring overhead they saw painted on the wings, not the Dutch insignia, but the circle and star of the American air force and, as a young officer in one of the anti-aircraft batteries said, they realized for the first time that American reinforcements had arrived in the Far East.

The Japanese admit the loss of two out of the three transports, but make their usual assertion that all personnel were ashore and that there was no loss of life.

In this case, their claims are probably justified, for the ships had arrived in the harbor in the early morning and the attack did not come until late in the afternoon. But personal experience accounts by junior officers present at the time refute official statements to the effect that the American planes were driven off at once, and tell of how they circled over the beaches where equipment was piled up and dropped bomb after bomb on the crowded mass of men and matériel. Five of the attacking planes were shot down; and the Japanese claim that the damage they inflicted so demoralized the American squadron that the attack was never renewed.

The Japanese acted promptly after this bombing, and during the night sent the aircraft-carrier down the coast with instructions to raid the air field at Balikpapan in an effort to destroy the bomber strength located there. According to their version, the raid was a great success. They destroyed four more American planes on the ground, and left hangars, shops, and other facilities a mass of blazing ruin. Whether or not they did in fact accomplish as much damage as they assert, they were not molested again by any planes operating from that base.

Early the next morning, the 12th, the ground troops pushed eastward across the narrow part of the island and pursued the retreating Dutch towards Tondano. On the same day, another small expedition landed at Kema on the east coast of the island about nine miles north of Tondano, and the combined operations of these two columns succeeded in eliminating all Dutch resistance by the end of the day and gave the Japanese possession of the air field at Kakas. Their plans for the occupation of this area and for its use in future operations had obviously been well worked out, and were executed with remarkable dispatch.

On the 14th, a squadron of heavy bombers flew over from Brunei air field and landed at Kakas, where ground crews set to work at once to put the field in shape for use against Dutch air bases to the south. The Japanese now felt more secure, for they were able to counter any Dutch air attacks with land-based planes instead of having to depend on the comparatively few planes borne by their aircraft-carrier.

The operations from that time until the end of February consisted of a succession of attacks by naval landing parties against the key points in this region, which gradually extended Japanese control south towards Java and southeast towards Australia.

The Japanese received only one setback during this period, when the Allied fleet, coöperating with American bombers, encountered a convoy headed south through the Straits of Macassar and caused so much damage that it was forced to return to its port of departure. In this action the Japanese admit the loss of four fully loaded transports, but refute claims made by Allied headquarters of more serious damage and the loss of warships. From the accounts available, it is evident that the losses suffered were severe; but the setback proved to be only temporary and failed to halt the steady march southward.



By January 25, the Japanese had taken Balikpapan, with its air field, and were making preparations to move south towards Macassar and Banjarmassin, the last of the outlying bases which protected Java. In the extreme east, landings at Rabaul in the Bismarck Archipelago and at Kavieng on New Ireland put them in position to extend their operations towards New Guinea and the mainland of Australia.

Shortly after the occupation of Rabaul and Kavieng, the Japanese landed a strong force at Salamaua on the northern shore of New Guinea in the hope of marching overland and capturing the important city of Port Moresby. This operation is the only one in the entire campaign which failed. In June, 1942, the troops were still one hundred miles from their objective, and from all accounts were on the defensive and having considerable difficulty in maintaining their position. The Japanese consistently bombed the harbor of Port

Moresby in an attempt to prevent the landing of American and Australian reinforcements there, but those efforts failed to meet with success.

### THE THIRD PHASE

By February 2, Macassar had been taken, and a Japanese column which had landed at Pamangkat on the west coast of Borneo had pushed overland and occupied Banjarmassin, which is within easy bombing range of Java. When, shortly afterwards, Amboina in the Moluccas fell, the Japanese were able to concentrate their entire naval air strength against the air bases of Java to prepare the way for the great naval and land battles which were to culminate in the reduction of that island.

Every day for two weeks, squadrons of navy bombers coming from the air fields of southern Borneo, and escorted by fighter planes operating from carriers in the Java Sea, flew over the air fields at Surabaya, Malang, Madiun, and Magetan, fought off the attacks of Dutch and American fighters, and destroyed planes and establishments on the ground. The first few attacks met the severest kind of opposition, and Japanese losses, particularly in bombers, were extremely heavy. But as the bombings went on, and a limited Allied air force had to go up day after day to fight fresh squadrons of Japanese planes, the resistance grew gradually weaker. By the middle of February, the Japanese were able to announce that the defenders' air strength had been crushed and that their own air force was now free to attack harbors and military establishments throughout the island.

Even before the fall of Singapore, the Japanese Army had joined in the campaign. On February 14, a regiment of parachute troops was dropped on the air field at Palembang in southern Sumatra. This field had been previously bombed twice, and the Dutch air force based there had been either destroyed or driven away. The mission of the parachute regiment was to seize the air field, and to take possession of the oil wells and refineries in the vicinity before the Dutch could destroy them. The first part of its mission was accomplished after a fight which lasted all day. The native troops which comprised the local garrison were badly confused by the necessity of fighting in small groups and against an enemy who came at them from all directions.

From all accounts, the Japanese appear to have been equally bewildered, and it was a long time before they could organize their scattered units sufficiently to drive the defenders away from the air field. By the time they had done this and moved on toward the city to take possession of the oil wells and refineries, the Dutch had done their work, and fires raged everywhere throughout the area.

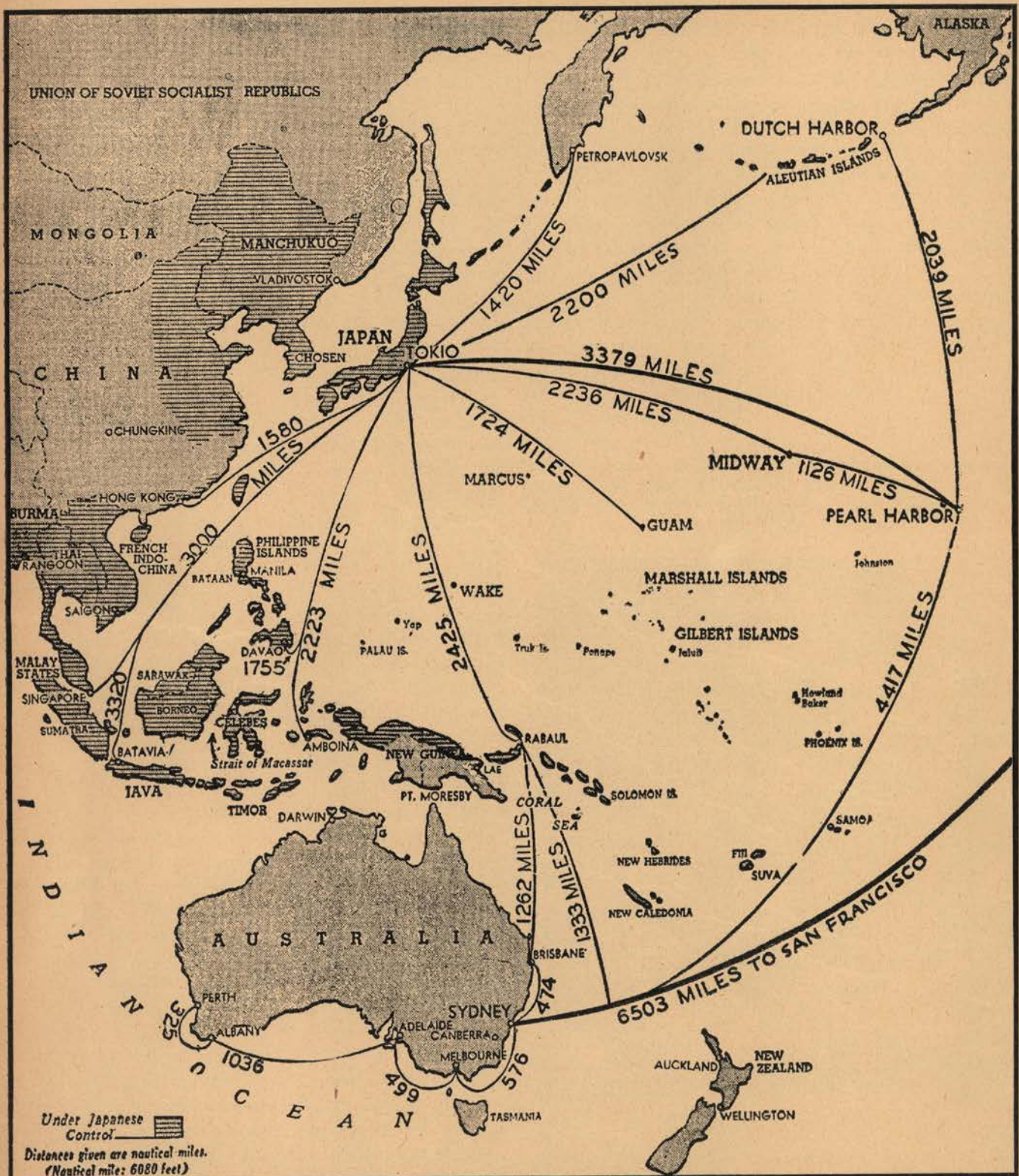
The next day, a battalion or so of air-borne troops was flown in from Malaya to reinforce the parachute regiment, and for the next nine days these troops maintained themselves without any support except what came to them by air.

Burning oil tanks and oil cars greeted the Japanese when they occupied the former Dutch-held Tandjong in Java. Note Japanese soldier in foreground. This Japanese photo reached the U. S. via Brazil.



Aeme





At the end of two years of war, the United Nations have begun to push the Japanese invaders back toward Tokyo—still roughly 3,000 miles away. Above map shows the distances to be covered on the "return trip."

As soon as Singapore fell, on February 16, the Japanese organized an expedition to proceed to their relief and to complete the conquest of southern Sumatra. So well were they organized and so rapidly did they work, that eight days after the fall of the British fortress, the expedition, composed of troops which had taken part in

the Malayan campaign, set sail, and on the 24th a part of it landed on Banka and Billiton islands, and took possession of the rich tin mines there. The rest proceeded to Sumatra, moved up the Musi river, and landed at the city of Palembang, which was occupied without opposition.



and never succeeded in advancing inland at all. It was barely able to maintain its position on the beach until the surrender came a week later.

The units which landed at Samarang overcame the very slight resistance which they met after landing, cut straight south until they came to the town of Madiun, where they too were held until the final surrender. The rapid advance of this force, however, to the point it did reach succeeded in splitting the Dutch army and cutting communications between the forces in the west around Batavia and those defending Surabaja.

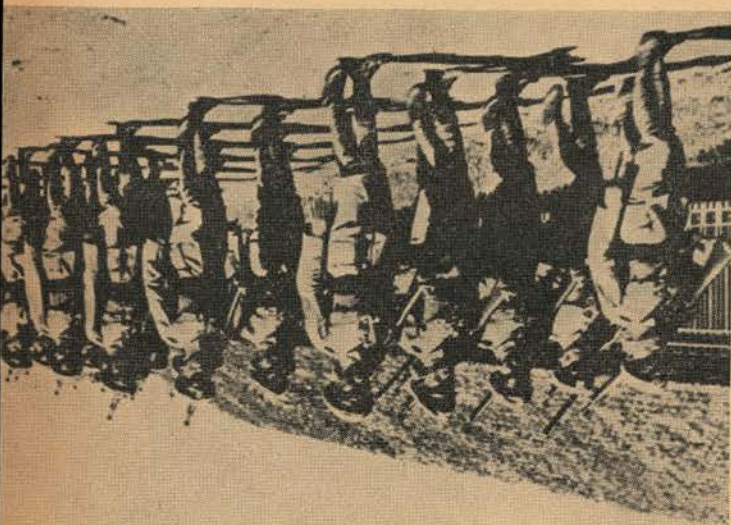
There was little fighting after the initial landing on the west coast. On March 2, Batavia surrendered without a struggle, and the Government moved to Bandung in the mountains, while the Dutch army fought delaying actions against the advancing Japanese who were pressing up the road toward this mountain resort. By the 7th of March the Dutch had been forced back into a pocket in the hills surrounding the temporary capital, and Japanese artillery was shelling the town.

On the evening of the 8th, the Japanese announced that they were ready to launch a general attack against the remnants of the Dutch army, and demanded the unconditional surrender of all the forces in the Netherlands East Indies. The demand was accepted, and the next morning all the troops surrounding Bandung laid down their arms and the Dutch commander issued instructions by radio to his forces around Surabaja to capitulate also.

In almost exactly three months from the beginning of the war the Far Eastern possessions of the United States, of the British Empire, and of the Netherlands, had fallen to the Japanese.

Recent photograph received from Dutch East Indies via neutral Sweden claims to show natives who are being trained by Japanese officers to form part of an army which is supposed to fight the Allies once they have begun the reconquest of the Dutch East Indies.

European



With the arrival of these large Japanese reinforcement, the Dutch abandoned all hope of further resistance, retreated to the southern tip of Sumatra, and fled across the Sunda Straits to join their main army in Java. By the end of the month, the entire southern half of the island of Sumatra was under the control of the Japanese Army.

In the meantime, another Japanese expedition appeared off Bali, and on February 19 landed at Denpasar on the southern tip of the island. The troops met with virtually no resistance, but that night, while they were still debarking, the few Allied bombers remaining in Java, together with three or four submarines, attacked the convoy as it lay in the bay. The loss of ships, men, and matériel was so serious that the Japanese were not able to proceed with the occupation of Bali but were forced to take up a defensive position around the beachhead in order to save what was left of their troops. The force was not relieved until some three weeks later when the collapse of resistance of the main army in Java caused the Dutch troops in its front to surrender. This attack on their convoy by an air force, which the Japanese confidently believed had been destroyed, alarmed them to such an extent that they renewed the bombardment of the Java air fields. For four days they subjected the air fields to a series of devastating attacks which left them such a shambles that no Allied plane ever rose from them again.

The time had now come for the Navy to clear the waters around Java of the Allied squadron and so permit the army expeditions poised at Singapore to land on the island. In a series of engagements lasting from February 27 to March 1, which the Japanese refer to as the Battle of the Java Sea, the Allied squadron was completely destroyed. A large battle fleet, supported by swarms of bombers and torpedo planes, ranged through the waters of the Java Sea and hunted down the Allied cruisers and destroyers, which had been split up into small groups to protect the vulnerable points along the coast. The last fight, on the night of February 28, was at Bantam Bay, where the American cruiser *Houston* and two destroyers were sunk by the navy escort which was protecting the large Japanese convoy then steaming into the Sunda Straits.

With complete control of the air and of the sea, the Japanese had little difficulty in effecting three landings on the island, and in the entire operation lost only four transports, one of which ran onto a reef in the darkness. The main force landed at Bantam Bay on the night of February 28-March 1, and in spite of the fact that the main strength of the Dutch army had been concentrated in that part of the island, the Japanese advanced 6 miles inland on the way to Batavia and established a strong beachhead before dark.

Other expeditions landed at Samarang, in the center of the north coast, and at a point on the eastern tip of the north coast about 16 miles east of Surabaja. This last detachment had a very difficult time getting ashore



# The Road Back

by Edward T. Folliard\*

The Japanese arrived off Rabaul on January 22, 1942, six weeks after Pearl Harbor. They came in warships and troop transports, and the handful of Australian troops in Rabaul wisely took to the hills. The Japs moved in next day without firing a shot.

The Japs then poured southward, down the coast of New Guinea and through the Solomons.

*It was all fairly easy, a part of the whirlwind drive that made Japan look so good in the first six months of the war.*

General MacArthur got out of Bataan and flew to Australia on St. Patrick's Day, March 17, 1942. The situation was very critical, and there was much talk of an invasion of Australia. MacArthur, however, was offensive-minded and he began flying troops and equip-

\*From *Washington Post*, Sunday, December 19, 1943.

*Below: U. S. Marines pause on the beach of Guadalcanal Island in the Solomons before advancing inland against the Japanese, August, 1942.*

Press Assn.



From Oro Bay, New Guinea to Tokyo is more than 3,000 miles.



European

*Above: Allied supplies are brought ashore at a disembarkation point six miles from Finschhafen, New Guinea.*



*Left: Native carriers set out along the track in the Wau-Mubo area in New Guinea.*

European

*Right: Jap pill-box on the New Georgia Island is being sprayed with flame from a U. S. Army infantryman's flame-thrower.*

Acme





# ck in the South Pacific

ment to Port Moresby in nearby New Guinea.

The Japs meantime were storming down the coast of New Guinea, bent on taking Port Moresby.

The first real setback, the first bloody nose for the Japs, came early in May, 1942. They had concentrated a large force of warships, transports and cargo ships at Tulagi Harbor in the lower Solomons. On May 4, dive bombers and torpedo planes from American carriers swooped down on Tulagi and sank seven Jap warships and any number of the merchant vessels. That was the Battle of the Coral Sea.

The much more important Battle of Midway came in the following month.

This was a great victory for the United States, the turning point in the War of the Pacific, since it robbed Japan of the bulk of her aircraft carriers. Still, from the American standpoint, this was a defensive battle, waged to keep the enemy away from Hawaii.

The first large-scale American offensive was the invasion of Guadalcanal early in August, 1942. The remark of a Navy officer, made while he was giving out a

communiqué on Guadalcanal here in Washington, comes back now, a year and four months later.

"The Japs have had the ball long enough," he said. "Now it's our ball, and we are going to see how far we can carry it."

The Army and the Navy, between them, and with the help of Australian and New Zealand allies, have indeed carried the ball a long way.

The turn of the tide in the Southwest Pacific, however, came slowly. While the battle was still raging on Guadalcanal, the Japs were moving down the New Guinea coast and drawing closer to Port Moresby. In mid-September they were only 32 miles away.

*In the meantime, MacArthur was massing more men and supplies at Moresby, and on September 29 he started his counteroffensive in New Guinea.*

The northward surge of the Allies has been irresistible ever since. In New Guinea, they moved up through Buna, Salamaua, Lae and Finschhafen, and then made the spectacular jump to New Britain.

**Below:** A pair of Marines, camouflaged to blend with foliage, search for a Jap sniper on Bougainville.

**Below:** The first wave of soldiers storms ashore on Rendova Island. U. S. Forces took Rendova, June 30, 1943.

U. S. Naval Photo

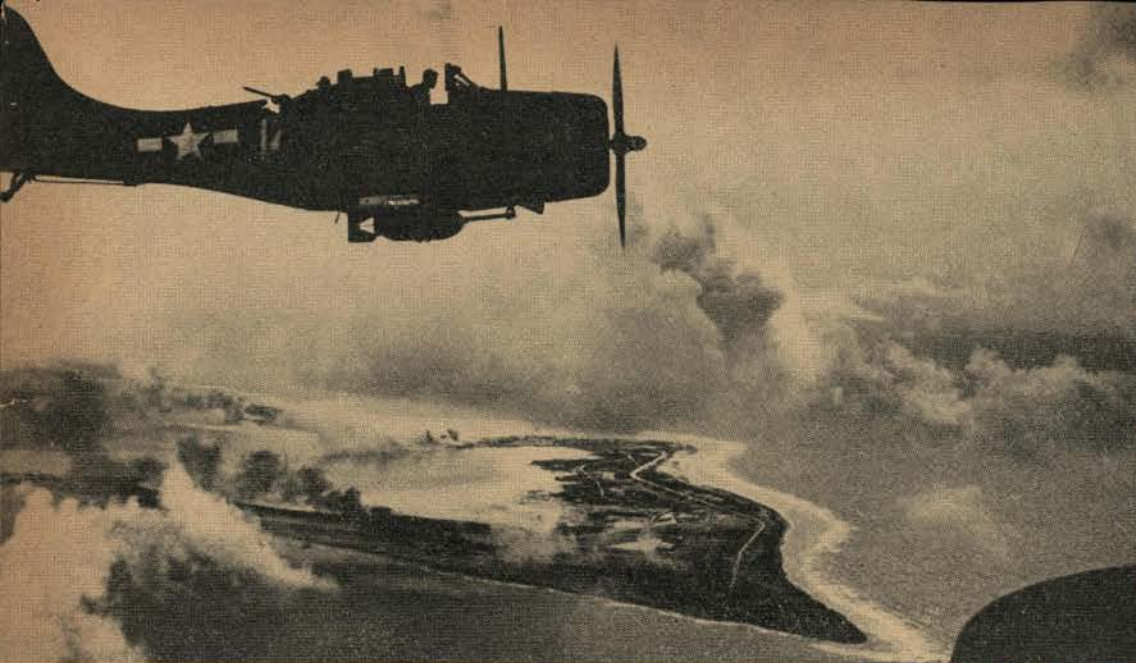


**Right:** Hundreds of paratroopers jumped down to Markham Valley, west of Lae, New Guinea, to block the escape of 20,000 Jap troops. A smoke-screen conceals their action. September 15, 1943.

U. S. Army Air Forces Photo from Acme







Striking on October 6, 1943, a U. S. carrier task force thundered death and ruin on Jap-held Wake Island, once so gallantly defended by a handful of Marines.

U. S. Navy Photo from Acme

The climb up the ladder of the Solomons kept pace with the drive in New Guinea, until the northernmost of the islands, Bougainville, was invaded. Now Bougainville is a claw in the Allied pincers reaching out for Rabaul.

Farther north, the forces under Admiral Chester Nimitz now hold Tarawa and the other Gilbert Islands, and are preparing to storm the Marshalls to the northwest.

All of this, the occupation of New Britain, of the Solomons and the Gilberts, is part of one grand offensive, an offensive which has for its goal the staving in of an outer Japanese barricade and a break-through to victory.

Secretary of War Stimson, in a recent war review, called attention to two successful raids carried out by long-range Army bombers in the Pacific. The targets were Balikpapan in Borneo and Makassa in Celebes.

Balikpapan and Makassa—they haven't figured in the news for a long time now. But once they were sharing the headlines with Singapore, Sumatra, Java and Timor. It was at the time when the Japanese were moving through the Pacific like a typhoon, sweeping all

before them, and causing some people to wonder if they would ever be stopped.

The raids on Balikpapan and Makassa . . . are eloquent proof that we are on our way back.

General Douglas MacArthur has now landed his first big pay-off blow—an invasion of New Britain Island, on the tip of which perches the great Japanese base of Rabaul.

All that has gone before in the Southwest Pacific—the invasion of Guadalcanal and the climb up the ladder of the Solomons, the drive from Port Moresby to the tip of New Guinea, the great sea and air battles—has been prologue.

Now the American forces are hot after the No. 1 prize in the Southwest Pacific—Rabaul itself.

If Rabaul falls, we will have knocked a great 1,000-mile chunk out of Japan's outer defense system.

That in turn would expose Japan's inner defenses—Truk, her so-called "Pearl Harbor"; Palau, and other strongholds in the Central Pacific.

And beyond those lie the Philippines, the coast of China, and the final drive on Japan proper.

These troops on Attu were not connected with the main landing on Massacre Bay, but constituted a flanking movement from a tiny unnamed beach where the drive started that culminated in the seizure of the East and West arms of Holtz Bay. All Jap forces have now been driven from the Aleutians.

Acme







# Battle for the Gilberts

Troops advance on Butaritari Beach, Makin Atoll, which already was blazing from the Naval bombardment of November 20th.

Press Assn.

AS real estate, the Gilbert Islands aren't much to look at. Actually, they might better be described as a group of atolls. Tarawa, for example, consists of nine principal islands and a number of smaller ones. Makin is two large islands and some islets. Abemama is a patch a dozen miles long and five wide. Betio, the member of the Tarawa atoll where the heaviest fighting occurred, is a scant square mile in area and nowhere more than 10 feet above sea level.

In strategic value, however, these bits of coral, sand and palm rank high. For the Japs, they constituted an extreme eastern flank shielding the major nerve centers of their western Pacific naval sphere, and a threat to American communication lines. In American hands, they represent an important new dent in the Japanese defensive perimeter and a springboard for operations in a number of directions which the continuing Pacific offensive must take.

The Gilberts were taken at a heavy price. Probably not since the stonewall at Fredericksburg or Pickett's charge at Gettysburg have American fighting men taken such concentrated punishment. Old hands who had seen the fighting on Guadalcanal said that nothing there had been as bloody as the battle for Betio. Some, with a professional knowledge of such things, held that there never before had been such a call for courage and a willingness to sacrifice.

The casualty list tells the story. At Tarawa, 1,026 died

and 2,557 were wounded. On Makin, where the 27th Division made its landing, the contest was bitter in spots, but less gruelling. Sixty-five died there and 121 were wounded. Abemama, where the Marines went ashore after the main fighting had begun on the two atolls farther north, cost but one dead and two wounded.

Artillery preparation began at 0500, November 20th, west longitude date. The sky was abruptly alight with the muzzle blast from the guns of battleships, cruisers and destroyers. The landing force had the support of the mightiest fleet ever gathered in the Pacific.

Softening by aerial bombardment had begun a week earlier, when the 7th USAAF's Liberators began a series of raids. Their last one took place the morning of the attack, with the naval shells bursting under them and carrier-borne aircraft hurtling down past the formations of heavies to bomb and strafe. Altogether Betio got about 1,000 tons of bombs.

It was a staggering concentration of explosives, but it did little toward knocking out the Jap defenses. They were good. Close-in cannon fire, bangalore torpedoes, grenades and flame throwers were needed to finish them off, and they exacted a prodigious toll among the attackers.

What happened between the beginning of the bombardment and the final Americanization of Betio 76 hours later, as told here, is derived from a variety of dispatches written by several correspondents who went





Press Assn.

Marines found very little protection on Tarawa, but these managed to take advantage of what little cover there was behind a bank on the edge of a lagoon. Note the wrecked amphibious tractors lining the shore in the background.

in with the waves of Marines, and others who stayed at Pearl Harbor to do the over-all picture.

#### GETTING ASHORE AT BETIO

The Marines were scheduled to hit the beach at 8:30 a.m. At first, going in toward Betio, it was easy and quiet. There was even talk that it was going to be another Kiska, with the Japs gone and only demolitions to show where they had been. The remarks about another Kiska stopped when the boats were about 1,500 yards off shore. Land batteries opened heavily against the Higgins boats, already heading in, and against the transports down whose nets the later waves were clambering to their landing craft.

Rough seas and geysers thrown up by shells drenched the Marines, and then the boats began to strand. The coral shelf around the island was not giving them the anticipated draft. The lucky ones got to within 150 yards of the beach. Many became fast 500 and even 600 yards off shore. Smaller craft with shallower draft began ferrying in all they could. Plenty waded—neck deep, chest deep, knee deep. There were not enough of the shallow-draft boats, and those available could not afford to take chances. The best they could do was to bring men in for a shorter wade.

One of the small boat skippers explained that to the Marines piling out of a stranded Higgins boat into his craft.

"It's hell in there," he told them. "They've already knocked out a lot of boats, and there are a lot of wounded men lying on the beach from the first wave. They need men bad. I can't take you all the way in, because we've got to get back out here safely and get some more men in there quick. But I'll let you out

where you can wade in."

It was neck deep where that particular group began its wading.

William Hipple, of the Associated Press, told about the wading part in his story:

"About 400 yards from the beach our boat apparently was out of control. The colonel ordered us out and to head in.

"Just before we climbed over the side the colonel shouted at me and grinned:

"I guess you got a story. It looks like the Japs want a scrap.' A few minutes later the colonel was killed. Meanwhile, I hit the water waist deep; cut off my Mae West life jacket with a knife. I couldn't buckle it. I followed the colonel and the men splashing ahead. We were caught in a crossfire from the right and left—machine guns, rifles and occasionally heavy caliber automatic weapons. The bullets hissed in the water alongside all of us. As the water was now shallower, most of us got down on our hands and knees.



This was a typical battle scene on Tarawa, where unseen snipers hung in trees, and enemy pillboxes were impregnable to all but direct attack.

"We made spurts upright. My head was knocked back slightly. I felt the top of my steel helmet, and it was red-hot where a bullet had creased it. I dived completely under water, as I did many times afterward, and tried to swim submerged as far as possible. The colonel in the lead went down suddenly and never came up again. One of our radio operators also was killed. An officer groaned and went under the water. By the time I approached, he was up on his feet and staggering ahead, although hit in the shoulder."

That was the trip ashore. Within a little more than an hour, six waves had accomplished it—and later, when the tide went out, scores of bodies were visible on the exposed coral. Officer casualties ran high.



## MARINES AT TARAWA

The original beachheads, much troubled by enemy mortar fire, snipers, and Japs, who infiltrated to fire from the shelter of damaged tanks and landing craft in the Marines' rear, were only 125 to 150 feet deep. There were three of them. At one, for a time, the attackers were penned between the water's edge and a log retaining wall only 20 feet inland.

Assault battalions were cut to ribbons. Marines who tried to push inland beyond the wall mainly became casualties—but Marines kept trying. The Jap pillboxes and blockhouses were doing very well for themselves, with much of the deadly sniping coming from their rifle slits. If the shelling had not done overwhelming damage to these fortifications, it had at least stripped the foliage from the palms and eliminated much of that sniper cover.

Nightfall found the Marines indifferently situated, and not too hopeful of being alive in the morning. Their orders were to shoot at anything that moved, and for every man permitted to snatch a little sleep, two had to remain on the alert. For one beachhead, first daylight brought a flank attack by Japs who had worked their way into the shelter of an old wharf 150 yards down shore. An infantry and tank rush drove them off.

An officer, wounded in the fight for the wharf, stayed in action for 60 consecutive hours notwithstanding. That tended to be the way with the wounded. Men with gaping abdominal wounds begged surgeons to fix them up somehow so they could stay in the fight. A captain shot through both arms and legs sent a message to his commanding officer for "letting him down."

The second day, matters began to mend a little for the attackers. Reserves coming in from the boats during the morning took a beating just as severe as those who had been in the original assault; but like the first waves, the reserves kept coming. The situation they relieved is reflected in a report from Colonel David Shoup, who had set up regimental headquarters 30 yards inland against a Jap blockhouse of log and steel. Messaged the colonel, "We're in a mighty tough spot. We've got to have more men."

By 1300 o'clock there was definitely a turn for the better. Light and medium tanks had gotten ashore, and so had half-tracks mounting 75mm guns. The pattern of naval bombardment was improving, and the incessant aerial strafing and bombing was beginning to tell. Millions of rounds of small arms ammunition had been fired.

The blockhouses began to fall to tanks and half-tracks that fought with the muzzles of their cannon shoved within a few feet of the firing apertures, and to Marines who crept up to thrust bangalore torpedoes in upon the Japs.

The Jap blockhouses consisted of a concrete emplacement five feet thick. Superimposed on the concrete were eighteen-inch diameter palm logs. Outside

the palm logs were angle irons of railroad rails, and over all was from 10 to 12 feet of sand and coral.

Describing its toughness, General Smith said later, "Nothing but a direct hit from a 2,000-pound bomb would cave in or destroy that blockhouse. A number of them stood up like a house in the sky, silhouetted, and practically every one had been hit by a projectile.

Despite the failure of the bombardment to destroy these strongpoints, however, General Smith contended that it did render the Japs unable to counterattack effectively at any time after the battle began.

By nightfall of the second day, the crucial period was past. The speed of the Marines' advance was increasing. The third day, the Japs began to fall apart. The final push was across the airstrip, Betio's most valuable installation and one which the Americans restored to operating condition within a few days after consolidating their victory. Reinforcements, landed at the west end of the island, finally pushed to the assistance of the men held up at the eastern extremity by concrete and log positions.

Some of the Japs ended their lives with their own rifles when the Marines' victory became inevitable. Most of them fought to the death, and estimates of the number killed have ranged from 3,000 to 6,000. However many were wiped out, the attackers were up against the Japs' first team. Betio was held by the Imperial Marines—the elite branch of the Tokyo military team.

A great percentage of the Marines who took Tarawa were battle-trying veterans. They comprised the 2d Marine Division, and many among them were graduates of the Guadalcanal Campaign. They took with them into battle the calm assurance of men who know what they are about, and how to do the job.

The Japanese used these British-built Vickers 5.5 and 8-inch naval guns, brought to Tarawa Island from Singapore, against the U. S. Marines landing on Tarawa.





Jan. 7 (AP).—Robert P. Patterson, Under-secretary of War, announced here today that a total of only 377 Japanese prisoners have been taken by United States forces to date.

Secretary of the Navy Knox quoted an estimate made by Admiral Halsey that 10 Japanese have been killed for every American lost in the Pacific area. . . .

In the Cape Gloucester area, 2100 dead Japanese have been counted, while only 117 Americans have been killed. . . .

On Guadalcanal, where the Japanese dead total 17,330, American dead in land operations, including airmen, totaled only 1950. In addition, in the Guadalcanal operations, it was estimated that between 25,000 and 28,000 Japanese troops were lost on transports sunk in the Guadalcanal area.

#### INFANTRY AT MAKIN

Northward, at Makin, the 27th Division was making its fighting début. It was no Tarawa, but it was no push-over, either.

Sergeant Walter Schliessman, an NCO in the 165th Infantry, told a correspondent about the landing there. Said Schliessman:

"Japanese machine guns opened up when we were 500 yards off shore. Slugs hit the hull, so we debarked into hip-deep water. Quite a few men were hit while wading to the beach. We were in the first wave of the assault platoon. Jap fire stopped when we were about 65 yards off shore. They must have retreated to new positions.

"My squad pushed 20 yards into the brush and re-organized, then cut directly across the island, splitting the Jap positions. The opposition here was very light, just rifle fire. I got seven Japs I know of—five by rifle fire and two by grenades. That was after we crossed the island and began moving west.

"We came upon a Jap machine gun nest. I threw in three grenades, heard some jabbering and knew someone was down there. After the third grenade, four Japs came out. I got two with my rifle, and other fellows got the other two."

As usual, the Jap proved to have his fantastic moments as a fighting man. Sergeant Schliessman told of encountering one inexplicable enemy who was hard to kill.

"Down the trail," said the sergeant, "a Jap, well dressed and wearing a wool hat, came running toward me screaming. He had a new rifle but made no attempt to fire. I hit him with my first rifle bullet at fifteen feet and dropped him ten feet away with two more bullets. He was carrying his rifle at the port arms position and had plenty of ammunition. It puzzled me why he didn't fire. Maybe it was because he was hysterical."

Lieutenant Colonel James Roosevelt, USMC, was another to tell of curious Jap behavior on Makin. Colonel Roosevelt had gone in with the 27th Division soldiers to give them the benefit of his Makin Island experience, gained when he landed there more than a year ago as a member of Carlson's raiders. His account concerned a counterattack by about 100 Japs.

"It was led by four officers in full dress with feathers in their caps and each armed only with a sword," Colonel Roosevelt related. "They closed in on our front line for hand-to-hand combat. One young American got a bad slash across one wrist, nearly severing his hand. 'The kid got the sword away from the Jap officer, though, and ran him through several times in spite of his own wound.'"

#### TEAMWORK

Narrow margins of safety were the rule when carrier-borne planes gave close support to the ground forces. On one occasion at Betio the Marines had to back up to make way for bombers working on Jap fortifications, and even so they left only a 200-yard leeway for error.

The Navy fliers were in action during most of the daylight hours of the three days the battle lasted, and the only naval vessel lost was the escort carrier *Liscome Bay*.

An analysis of the battle and what won it was made subsequently at Pearl Harbor by General Smith:

"There is one thing I would like to stress. The capture of these islands was the result of teamwork; that is, naval gunfire, air forces and ground forces. It is my honest belief that never in the history of our country has there been closer coöperation and coördination and mutual support than in this undertaking."

Japanese soldiers died in and on their pillbox on Tarawa Island. Note the dead Japs at the left and on the pillbox. Many other Japs were buried alive in the fortification.







The Australian Army Pack Transport Unit carries stores to men at forward areas over some of the roughest country in New Guinea. This unit has travelled more than 7,500 miles and has often been strafed by Japanese aircraft. Picture shows a general view of a pack team as it sets out along the track.

## Australian Pack Transport in New Guinea\*

JEEPS are known to Australians as "busy little motor-cars that go places"—nearly all places, but not quite all.

In New Guinea even the Jeep at times cannot penetrate the baffling jungle country. That is where Army Pack Transport Unit, using several hundred horses and mules, comes into the picture.

The nucleus of the units was formed of horses on the island. Already acclimatized and accustomed to grazing on local pasture, these horses have given particularly good service on difficult tracks. On one very bad road it was common to see mechanized vehicles completely bogged, while fully laden horses trudged steadily by, sometimes through mud up to their bellies.

Often the firm bottoms of creeks are used. Sometimes five miles at a stretch have been covered in water up to three feet deep.

Feeding in areas where grass is unobtainable presents a big problem. Animals negotiating difficult trails for long distances have to carry fodder as a big proportion of their pack load.

In crossing high-banked streams it is frequently necessary to unpack the animals, manhandle the loads and saddles across, or rig flying foxes, then lead the animals over, wash them down, saddle up and re-pack the loads.

On many tracks, cut with axes and heavy knife bamboo is plentiful, and care has to be taken to ensure that men and horses are not spiked by the sharp-pointed canes.

*Glissades*—steep clay banks, up to 100 yards in length—have to be crossed. Down these the horses sit and slide, while the men help to reduce momentum by taking quick grips on saddlery as the animals pass. Going up, animals pause and rest every few yards. Frequently, while taking such breathers, they lean against trees.

Where undergrowth is not particularly dense, horses sometimes wander off the tracks and become caught by their packs between the trees. They have learned to stop instantly, back out and return to the track.

Pack transport men claim that their animals show a reciprocal understanding. They will travel independently, with the reins thrown over their heads, and will fearlessly follow wherever the men lead. They say, too, that when men are injured and carried back on their horses, the horses travel with more than ordinary care.

The medium-sized mule is said to be better at picking his way than a horse, and also more sure-footed. The mule will carry a horse-load.

But there is one catch about the mule that many soldiers know. He will eat anything—camp and all, if there happens to be a camp and close watch is relaxed.

\*Department of Information, Commonwealth of Australia.



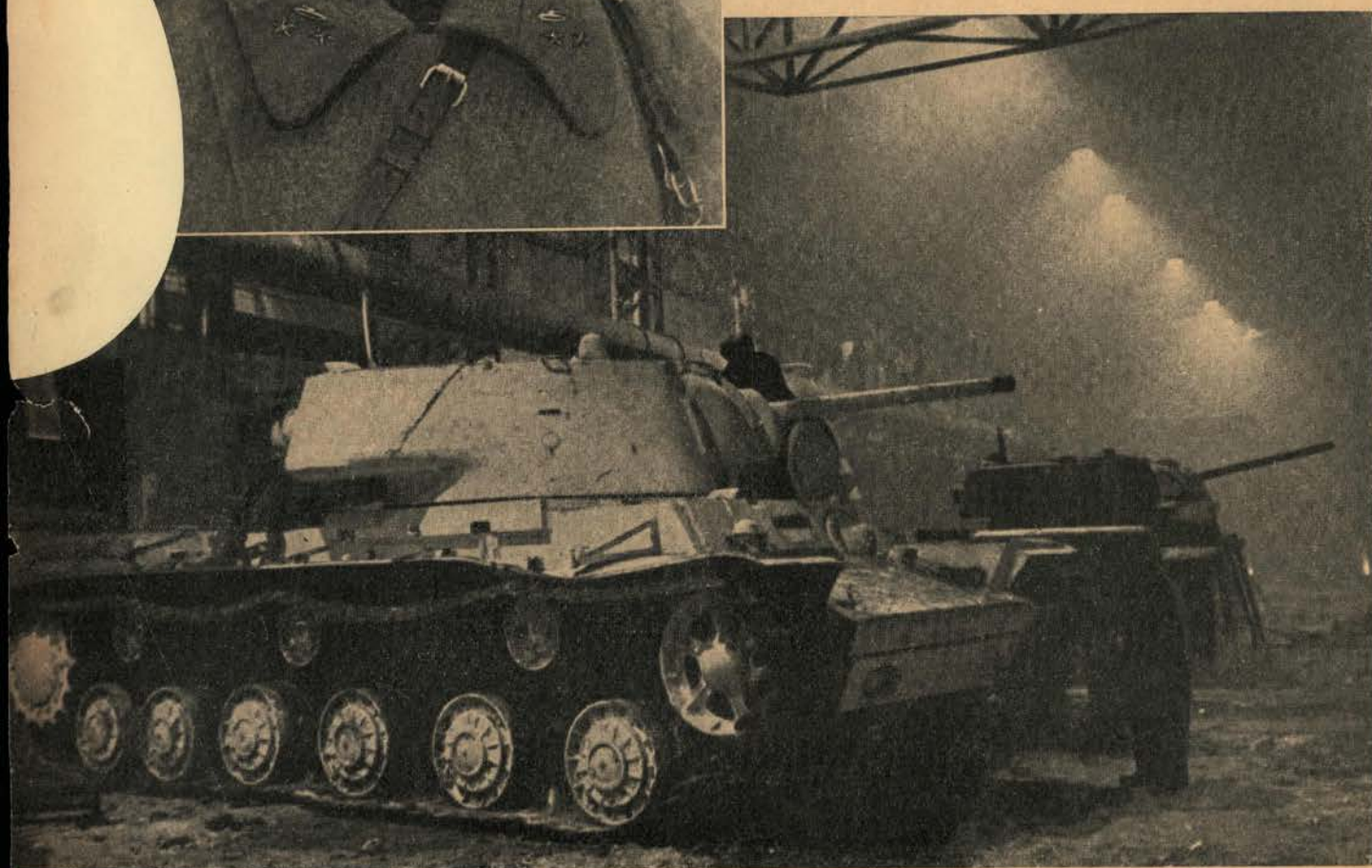
# SOVIET TANK F

*by Major General  
Mikhail Katukov, Red Army*

TODAY the Red Army possesses more tanks and other technical means of warfare than in the first months of war. It has acquired more experience and skill. Cadres of tank and antitank men have grown up—men who have a perfect command of antitank rifles and can well wield combustible bottles and antitank grenades.

Tank engineering works, which have been evacuated into the far interior of the country, are producing more machines on their new location than they did on the old. Many of them were evacuated in sections, and each section was set up in a different city. Now, in place of a single huge works, there are five or six that function at full capacity. On literally waste land, huge shops and factory blocks sprang up in the course of a few weeks. Produced there are the T-34's or medium tanks, which are the most numerous in the army; also, the invincible KV's which strike such terror into the German soldiers.

*Left: Guards Major General Mikhail Katukov, commanded a Soviet Tank Division in the 1942-43 winter offensive. Below: Young tank builders, assembling KV tanks, compete in speeding up the output. The KV's shown here have the new all cast turret.*





# FIGHTING

Tank crews from the front very often arrive at the factories to take over a consignment of machines. Here, in the shops, they tell the workers what improvements and alterations in the construction of the tanks have been found necessary by the "battle tests" to which the tanks have been subjected. The constructors take these remarks and instructions into account in their further work, and the tanks consequently become ever more formidable and powerful.

In the actual course of battle, Soviet tankmen have gained experience and applied new methods of fighting—tank ambushes in defense, shock-group maneuvering, employing tank-borne infantry during attacks, interspersing tanks among storming groups when charging against forts and pill boxes, etc.

## TANKS IN ORGANIZED ATTACK

At the beginning of the war, the Red Army tank troops were organized into divisions. Battle experience has shown, however, that these units were unwieldy and inconvenient for managing. The tank divisions have since been broken up into smaller units and reformed into brigades that are more pliable on the battlefields.

On one of the sections of the Western Front, the 10th German Tank Division had succeeded in wedging into the defensive units of the Red Army, and the high command ordered a small tank unit to wipe out the enemy wedge—no easy job, since the Germans had had time to entrench themselves firmly in this position.

Two villages, situated at the edges of the wedge, had been turned into strongholds by the Germans, who had constructed pill boxes, dug tanks into the ground, fitted out blindages, set up barbed wire fences, and laid mines around the approaches to these villages.

According to the plan of the high command, seventeen tanks were to take part in the attack on the entrenched German line, and the whole attacking group was to form in four sections.

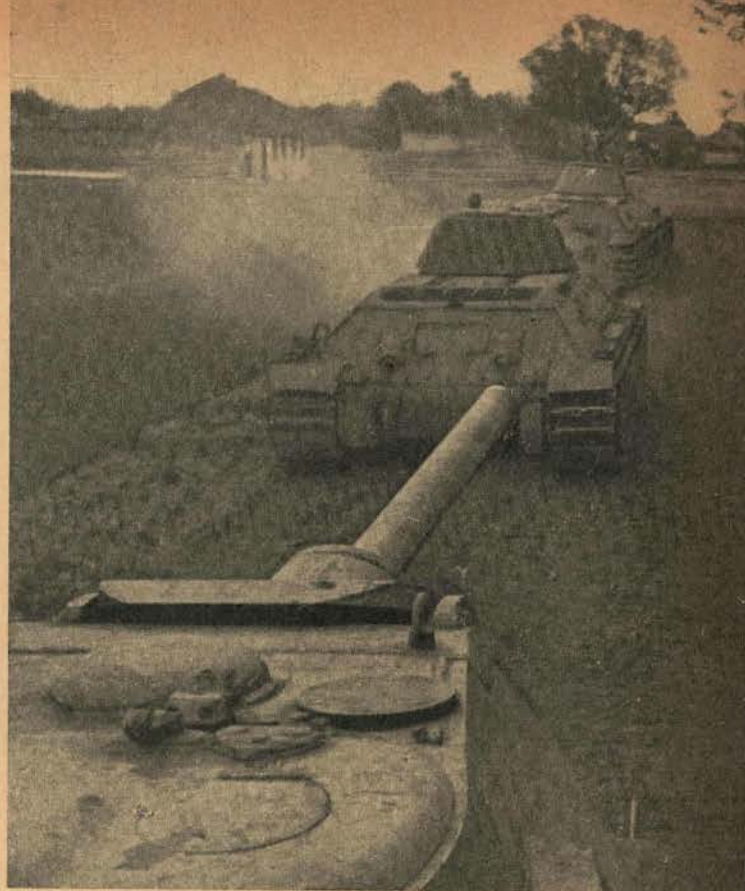
Three tanks were to advance forward for purposes of reconnaissance and bear the brunt of all the enemy fire in order to establish the location of the German guns.

The next two tanks, maneuvering all the while, were to support the first three with their guns.

The third section of six tanks was to crush the enemy's antitank defense.

Following them would come the fourth group of six tanks, whose job it was to insure the advance of the attacking infantry that would follow right after the tanks.

The command of the tank unit was applying here the tactics of quick, forceful darts. *The tank troops*



Sovfoto

Three T-34's move into action on the Southwestern front.

*acted very much like the Cossacks—those in front dart forward, while those in the rear support them. Those in front withdraw, and those in the rear advance.*

The tankmen prepared for these offensive operations with the greatest care. Each machine was carefully tested. Fire extinguishers were examined and made easily accessible. Turrets were given a fresh coat of white paint to insure their camouflage against the snow.

The morning scheduled for the attack was cold but clear. The motors of the tanks began to hum. Attired in white camouflage suits, the infantry parties came up with their tommy guns slung across their chests. At exactly 9:30 A.M., the first bursts of the artillery sounded. Soon, everything fused into a single roar of ever increasing explosions.

At 10:00 A.M., the first three tanks started off in third gear along the highway. They opened up a running fire, and a rain of missiles came in answer to their shots. The Germans put up a solid line of fire before the three tanks. Antitank guns, tanks that had been dug into the ground, and soldiers hidden in dugouts built in the village cemetery—all opened fire at once. A heavy enemy shell hit the turret of the first tank, and it began to burn, but the crew used the fire extinguisher and put out the flames. Two German long-range guns were observed set between two dug-in tanks to the left, and with a well aimed shot from the tank's gun, one of them was put out of commission and its gunners killed.

Under cover of tank fire, Soviet infantry now advanced boldly. The Germans first met them with heavy fire from their dugouts and concealed gun emplace-



ments. Soon the Germans started to counterattack with their own infantry, marching in erect formation, and all the while, kept a running fire from their tommy guns. One company of their tommy gunners was mowed down by the tanks' fire, and the rest turned and fled. The German counterattack had failed.

The fierce battle continued right until the tankmen had driven the Germans out of their entrenched line. In this one day's fighting, the tanks and infantry in organized attack had destroyed 21 tanks, 8 antitank guns, 2 heavy guns and had captured 3 tractors, 2 antitank guns, 14 trench mortars, guns and other armaments.

#### A TANK BRIGADE IN DEFENSE OF MOSCOW

At the beginning of October, 1941, Guderian's German tank forces broke through to Orel and took the city. The Soviet command found itself with one tank brigade available, and it was this brigade that was assigned the defense of the roads to Tula and Moscow, pending the concentration of other troops.

For eight days the tank brigade engaged in fierce fighting with the enemy, which flung against this one brigade two of its tank and one motorized division—a total of three divisions against one brigade. The Soviet tank unit accomplished its task and inflicted heavy losses on the enemy.

This success was due primarily to excellent reconnaissance, which by virtue of the unit's exposed flanks, was conducted along a wide front; a system of pseudo positions; close interaction of all classes or arms comprised within the brigade; able and efficient interspersing of motorized infantry among the various battle units; tank ambushes; and the maneuvering from far

Captain Alexander Burda, whose tank exploits won him the distinction of "Hero of the Soviet Union."



behind the lines, of groups of tanks that constantly attacked the enemy from the rear.

#### TWO BT-7 TANKS ON RECONNAISSANCE

On reconnaissance duty, tankmen frequently make long runs behind the enemy lines and often penetrate as far as 50-60 kilometers to the rear. The scouting troops seldom return without some catch and consider it a disgrace to come back to the unit with empty hands.

On a certain November day, two BT-7 tanks, with a party of reconnaissance scouts on board, made their way far behind the enemy lines. After making sure by their observations and questioning that German tanks and infantry were present in the near-by villages, the group started back. But not far from the front lines, they learned that there was an endless row of enemy tanks and cars moving along the highway.

The Soviet tanks came out onto the highway and, seeing the fresh tracks of armored cars, set out in pursuit. Soon the light BT 25's—"Betties"—overtook two German armored cars. The crew of one of them fled in panic, and the other was hit by a shell and went up in flames at once. The German crew hadn't even time to get out of the car. After stripping the remaining car of its guns and taking all the documents, the reconnaissance tank returned to base unharmed.

At six the next morning, the same reconnaissance tank set out on another mission.

The weather was very bad, and visibility almost nil. At twenty meters nothing could be distinguished. The snow, swept into the tank by a cold wind, covered all the instruments with a thick layer, and every 50 meters, the driver had to stop and again grope his way forward.

On approaching a village, the reconnoiterers noticed a 7-ton truck and five Germans rummaging around it. A round of machine gun bullets finished the whole group, and the truck proved to be half full of poultry and other local products of which the Germans had robbed the population. After returning these stores to the villagers and questioning them as to the movements of German troops, the tankmen took the truck, along with engineering equipment and secret mine locators, back to their unit under its own power.

#### A COMPANY OF TANKS ATTACK FROM AMBUSH

When Captain Alexander Burda, commander of a company of medium tanks, received orders to reconnoiter the German forces advancing on the Soviet town of X, he covertly led his tanks along the highroad and camouflaged them in the woods.

According to the scouts' reports, it was at this spot that the German troop column would pass. This information was correct, for at exactly 8 A.M. the Germans began moving towards the town.

Like a venomous snake, the German column emerged onto the road. In front crawled the panzer vehicles hauling antitank guns. These were followed



# 65 Germans Tow Stalled Vehicles\*

THE magnitude of the difficulties that may be encountered in salvaging stalled combat vehicles has been clearly revealed in the campaigns in Poland and Norway, on the western front, in the Balkans, in Africa, and especially in Russia with its severe winters. In peacetime training and maneuvers, such problems could be solved with the equipment at hand, since the standard towing truck, especially the eight and eighteen-ton tractors, had all the power that was needed. Under war conditions, however, it is often necessary to salvage vehicles so badly damaged that their resistance to towing is several times that of a vehicle that is merely "out of order." In other cases, vehicles may be so wedged between trees or sections of masonry that it is impossible to move them by simply attaching a tractor.

The only salvaging equipment that has been found suitable for such work is the 18-ton tractor, which has a tractive force of about 20,000 pounds and is provided with a winch having a maximum tractive force of about 15,400 pounds. This tractor is designed to function as an auxiliary, and its tractive force has met the requirements under all normal conditions; for example, in the towing of equipment for the artillery. However, the provision of additional strength necessary for salvaging operations presents many difficulties, and in the case of tractors not used for salvaging, such added strength merely becomes a load to be carried.

In many cases the regular winch, when correctly used and supplemented by a loose pulley, can give very good service. Not only can the tractive force of the winch be exerted in various directions by means of pulleys (the cable should pull as much as possible in a direction parallel to the axis of the tractor), but on the principle of the bottleneck, the tractive force may be doubled or trebled whenever several pulleys are available.

An overloading of the cable itself should by all means be avoided. To prevent this, the older types are provided with a safety device employing the shearing principle, while the newer ones have a slipping coupling. Sharp edges and knots must be avoided, and the cable must be handled carefully and given regular attention.

In working with the winch, special attention must be given to the anchoring of the tractor and the firm attachment of the pulleys so that the tractor will not be pulled toward the object which is to be moved. This may be done by means of steel cables or chains attached to a tree or to stakes driven into the ground.

If the tractive force of one tractor is not sufficient, it is not always necessary to resort at once to the double or triple pulley, especially when there are several tractors available. Two tractors may be employed in tandem

simply by attaching the leading tractor to the front coupling of the rear tractor by means of a cable or towing rod. If additional tractors are used they must not be hooked on ahead, for in that case the tractive force of all the leading tractors would be exerted through the rear vehicle, and the front and rear cross members of the frame are not capable of taking such a pull.

When it is necessary to use more than two tractors, care must be taken that each exerts its force where it is needed. In any case an easy, steady pull by all tractors is necessary, and this must not be left to the drivers alone but must be directed by means of signals from one place.

A loose pulley belongs with every chassis. Stakes for driving in the ground, hooks, shackles, and steel cable and chains are easy to obtain, although one can never have a sufficient quantity of them. Provided with this equipment, any heavy tractor can be employed as a salvaging tractor and, except in special cases, several together will be able to meet all demands fairly well.

This photo, received from Berlin by way of neutral sources, gives a graphic idea of what the German Army had to contend with on the Russian Front. Note cable towing truck.

Wide World Photo



\*A digest of a German article in *Die Panzertruppe* September 1942, translated at the Command and General Staff School, Fort Leavenworth, Kansas.



# With Tank Attack

by Major F. Abolin\*

# SOVIET S

NO tank attack should be launched unless full information is available about the enemy defenses. This information is obtained by means of deep reconnaissance by sapper-scouts, who are distinct from sapper-engineers. Both branches of sappers send observers to the perimeter of the enemy defenses to locate the positions of the German mines and determine the type of their defense.

Then the commanders of the tank and sapper units, with a detailed chart of the enemy's defenses and mine-fields before them, map out the route for the tanks. Bridges and corduroy roads are built to the outer line of the enemy defenses, and signposts are set up to mark the route.

It must be admitted that tank attacks are not always prepared as carefully as they should be. Close coordination is sometimes lacking between tank troops and sappers. A striking example of this was the case of one of our tank units that got stuck before they reached the perimeter of the enemy's defenses. This would not have happened if the commanders of the tank unit and the sapper engineer detachment had attended to the essential preliminaries and laid proper roads for the tanks.

In order to correct the mistake during the course of the battle, two lieutenants of the sapper unit first selected three routes. Then working under enemy fire after dark, their men made brushwood roads and built four bridges. The following morning, the tanks, accompanied by the sappers armed with mine detectors and explosives, moved forward with little difficulty.

Thereafter, whenever the column reached a mine-field it halted. The sappers jumped from the leading tank and put the mines out of action. Then they blasted away the steep walls of German antitank ditches and

laid fascines which enabled the machines to proceed.

The wisdom of including sappers in tank attacks has been thoroughly proved. The sappers, however, must be protected from enemy fire and should be carried inside the tanks whenever possible; else, they should be hidden securely behind the turrets.

In a recent offensive operation, a sapper with one of the tanks hopped out when the tanks came to a mine-field, and with the aid of two other men put 15 anti-tank mines out of action. While these sappers were at work, the tanks neutralized the fire from enemy machine gun nests, automatic riflemen, and antitank guns.

This particular tank unit had a sapper reserve that proved extremely useful after the machines had forced their way into the enemy defenses. As the Germans retired before Soviet tanks and infantry, they had hastily laid mines among the thick grass and growing crops without any special concealment. The sapper reserves, going forward rapidly, put 250 of these mines out of action and set up beacons along the main routes of the advance to indicate safe passages for the rest of the tanks.

During this retreat the Germans had mined a bridge, which blew up as soon as the leading Soviet tank began to cross. Fortunately, the tank was not damaged, and the bridge was not wrecked sufficiently to prevent the tank from proceeding across. A platoon of sapper-engineers, carried in the following tanks, quickly erected a makeshift bridge. Where the roads were bad, they laid logs about two feet apart, and where necessary placed ready-made mats about four or five yards long and a yard wide. The tanks moved forward over this route and continued to harass the retreating Germans.

It was this coöperation between sapper-scouts and sapper-engineers that on several occasions contributed to the final success of the tank attack.

\*Red Army.

Sovfoto



Northwest of Stalingrad, Sappers remove mines to clear the way for advancing troops.



# SAPPERS

## On Independent Missions

by Lieutenant Colonel A. Alexeyev\*

HOW does the sapper artillery operate? Its basic materials are rocks and inflammables. Hurling out with great force by a powder charge, they sweep away everything in their path for a distance of up to 100 meters. In the absence of rock, the "rock-and-flame thrower" is loaded with metal scrap and pieces of rails. As shown in the course of recent battles, besides destroying barriers and wiping out manpower, these rock-and-flame throwers have a big psychological effect on the enemy. There have been cases when, lacking the necessary shelters, his troops have run in a panic when the rock-and-flame throwers were set off.

During one offensive operation in the foothills of the Caucasus, the sappers were set the task of making passages through barbed wire entanglements and mine fields located about 50 meters from the German gun emplacements. This work had to be carried out just before the attack and over a broad front.

The commander of the sapper battalion tackled the problem as follows:

For four days the engineering scouts made a careful study of the terrain, and calculated the number, size and location of the rock-and-flame throwers to be used. The night before the attack, the sappers crawled over to the enemy entanglements and under cover of their own artillery and mortar fire, which drowned out the noise of their work, set up 100 rock-and-flame throwers in two rows on a two-kilometer stretch. They were placed in such a way as to strike at the German troops, besides clearing paths through the barbed wire and mine fields.

At the fixed hour, a red rocket flew up, the signal for the sapper artillery to go into action. Two massive curtains of burning rock and flame poured down on the Germans with terrific force, and under its cover the Soviet tanks and infantry went into attack. Before the Germans had time to recover from the shock, they found themselves cut off from their second line. All their attempts to resist were unavailing.

### BURROW INTO DEFENSES

Underground mine warfare is another method used by the sappers in fighting for important heights and for separate buildings constituting powerful strongpoints within towns.

On one sector of the Central Front the Red Army units captured the outskirts of a large inhabited point. The Germans were entrenched in a number of brick buildings with a strongly fortified one in the center. Soviet forces attacked three times, but could not drive the Germans out. The sappers laid two charges of 50 kilograms of explosives under the building wall, and made a breach of about 10 meters in diameter, but even then enemy fire prevented our infantry from taking the building.

It was then decided to dig a tunnel under the building and blow it up together with its defenders. A shaft was sunk in a hollow some 40 meters from the building, and a tunnel 110 by 90 centimeters and 43 meters long dug beneath the frozen ground. The earth was carried out in munitions crates to a near-by house, to be removed during the night and hidden under the snow in shell holes and ditches. The tunnel was built without supports of any kind. Under the two-story building over an area of 46 by 34 meters the sappers laid charges of explosives weighing some 1,200 kilograms. After the explosion all that was left of the building was a huge pit.

Sappers often have to resort to ruses in the course of their work. On one sector last autumn, six boats were loaded with rock-and-flame throwers and detonator caps, and sent over the river to the enemy side under sail one night when the wind was blowing toward the Germans.

The boats went off with a roar as the detonators exploded one after another, creating the impression of steady firing. The fascists opened a torrent of fire at the boats and sank one of them. But the rest did their work. A hail of flaming rock flew at the enemy.

As a result of this operation, the artillerymen were able to locate a number of hitherto elusive German gun emplacements, which they wiped out the same day.

\*Moscow News.

Sovfoto



Soviet Sappers clear a road of mines.



# Tank Destruct



Sticky Grenades, or other expedient demolitions, are good ambush weapons.

Ambush Site shown at right is only fair. Lacks sufficiently confining terrain, woods. Road, ideally, should be in ravine; however, combat will not often offer ideal setup.



by

*Lieutenant Donald G. Merritt\**

THE tank ambush is one of those handy tricks employed by competent soldiers that so often mean the difference between victory and defeat in today's fast-moving war. The ambush was used to advantage by the Russians in wooded country; also by the British in the early stages of the African campaign, when small groups of Nazi tanks were cut off and destroyed in desert wadis.

American forces, too, have employed ambush tactics. In one Sicilian incident, parachute infantry bazooka teams knocked out five of eight Nazi tanks from a hastily prepared ambush. Indications are that, with our forces gradually advancing into close European terrain, the ambush will assume even greater importance in combat planning.

The tactics department of the Tank Destroyer School has taught tank ambush fundamentals both as an expedient method of tank destruction and as a means by which small groups of determined men can adequately protect likely tank approaches to bivouac areas or gun positions, cover dead space in fire sectors, limit tank movement in close or wooded country, harass small tank reconnaissance units, or continue the mission of tank destruction should the primary TD weapons be disabled.

The instruction given at the TD School is designed to present a general ambush plan from which officers and men will be able to set up an ambush to meet any conditions presented in combat. The first requirement is an ambush team. Such a group may consist of men who have lost their vehicles, men from the tank destroyer pioneer platoon or available overhead, or a set group of especially trained men within the battalion. Every man in the unit, however, should be sufficiently versed in ambush tactics to be able to take part after receiving the necessary details about the particular ambush at hand.

For instruction purposes, the TD School uses two possible teams. The first consists of a security section and a TD section commanded by a platoon sergeant. This gives twenty-three men—enough to take care of four tanks. The team has easily concealed transportation, a good knowledge of close combat weapons, and sufficiently heavy armament. Its equipment includes appropriate arms and demolition equipment to enable it to perform its mission.

The second group is made up of one complete reconnaissance platoon with equipment. On occasion, ambush teams may even consist of but one security section. The size of the group depends largely upon the number of tanks involved.

\*The Tank Destroyer School.



# ion from Dismounted Ambush

## TRAINING

The special training given is standard tank destroyer instruction, greatly intensified. The habits and limitations of tanks are studied carefully. Thorough familiarity with the organization of the tank crew, its weapons, visibility, and armor is stressed, as well as vulnerable points, and the dead space that lies around the tank itself. The men are trained in the use of the close combat weapons and in making demolition expedients. The type of terrain favored or avoided by tanks is discussed, with an eye to picking good ambush locations.

Ambushers are mentally and physically prepared for the technique of the ambush itself. A practice site is picked, and the assignment and exact spot for each member of the team are designated and marked for rehearsal purposes. The fundamental rule of the ambush is surprise, and the basis of surprise is often the absence of strict rulings or set procedure. After the essential procedure is learned, every ambush must be a rule unto itself. Plans and technique should be flexible enough to vary with the unexpected. It is a battle of wits and initiative, not of tactical dogma.

## GENERAL REQUIREMENTS

On the other hand, there are certain general guides which provide the outline for each ambush plan. The following should be provided for, according to the demands of the situation and the *time available*, before the ambush is to take place:

1. All-round security, with observers or scouts to front, rear, and flanks, and the establishment of an efficient and practical method of communication with the main ambush party.
2. A means of disposing of the enemy reconnaissance elements after they have passed the ambush area.
3. A method of stopping the tanks.
4. Smoke between tanks to isolate them from each other, and to allow the ambush crew to get in and use their weapons.
5. A team of men assigned to the destruction of each individual tank and crew.
6. Complete concealment of men, vehicles, and weapons.
7. The placing of machine guns to delay enemy motorized infantry which may be following the tanks.
8. Designation of a rallying position.
9. Rehearsal.

There are several points that require special attention.

Prior to planning the actual engagement, thorough dismounted reconnaissance of the ambush site and the surrounding area should be made by the key men of the ambush party. All weapons, equipment, and vehicles must be inspected closely before leaving the bivouac area. The terrain between the site and the rallying po-

sition is also reconnoitered, and all information given to the ambush team. Orders should necessarily be clear and simple, so that there is no chance of misunderstanding.

All personnel must be familiar with the plan as it concerns all phases and teams. To insure coordination, all men must know the mission and actions of their fellow teammates. Lastly, every installation in the ambush should be checked personally—signals, location of weapons, disposition of men, and above all, concealment. No stone can be left unturned, for once the trap is set, success depends on the correct functioning of all details. Central control is gone when the action starts. The commander has to depend on his men, and they must be able to depend on themselves.

## PLAN OF EXECUTION

The reconnaissance element for a platoon, or less, of tanks may be one or two motorcycles or other light reconnaissance vehicles. They should be eliminated noiselessly by a detail posted just past the ambush site. This can be done by three men with small arms, plus a steel cable for motorcycles, or an effective barricade for wheeled vehicles.

Stopping the first tank in the ambush is not difficult. From a concealed foxhole or from natural concealment as near the road as possible a man pulls a mine chain across the road—timing his pull when the tank is within fifteen feet so the first tank cannot avoid the mines. The mine chain consists simply of AT mines tied one foot apart on a rope. If no mines are available, a pivoted board loaded with explosives can be used.

M10 Tank Destroyer, in defilade here, is primary TD weapon; can be used in dismounted tank destruction plan with the 3-inch gun covering possible avenues of escape.









As additional insurance, when the ambush is staged in a defile, a mine chain can be pulled behind the last tank, and the trap closed. Any side roads, or breaks in terrain or growth along the ambush site that would allow tanks to escape, can also be blocked with mines or by a bazooka team. If there is ample concealment, AT guns, towed or self-propelled, can also be spotted at these avenues of egress, laid on the opening.

The placing of smoke pots between tanks is worked simply by stationing men at the estimated interval left between tanks when the tank column is halted. These men must not fail, as any tank left unscreened will get covering fire from the tank behind.

A vital factor in the coordination is the designation of a specific team for the destruction of each tank. A team of not less than three men should be charged solely with the destruction of one particular tank, and each team member must have a specific responsibility.

The teams are placed as near as possible to the road, covered and concealed, and at the place where their particular tank will probably stop. Number 1 man pulls the mine chain, stops the tank, and closes in with sticky grenades, pole charges, or other demolitions. As soon as the tank stops, number 2 man attacks it with automatic small arms fire to keep it buttoned up and to prevent the escape of the crew. Number 3 man sets the smoke screen and, coming up through the undergrowth from the rear, closes in with Molotovs or incendiaries—concentrating on air louvers and intakes.

The action must be conducted simultaneously, swiftly, and smoothly with the assault on all tanks taking place at the same time. Hand-picked men, hard training, rehearsal, and coordination show up here.

A study of the employment of enemy tank forces indicates that a tank platoon used as a column point or on reconnaissance is supported by motorized infantry. The ambush plan should include some means of delaying this force. One or preferably two machine gun teams can effect this delay. The guns should be given the best possible field of fire along the route leading into the ambush. Their mission is to delay infantry or any support following the tanks, force it to deploy, and pin it down for the few minutes necessary for the destruction of the tanks. The signal system must be planned especially to enable these guns to move out in time to join the main ambush force at the rallying position.

All-round security is another essential of the ambush plan. The machine guns covering the rear must be supported by flank scouts. These security men guard against mounted and dismounted enemy reconnaissance elements ahead of the tanks. They also warn of the approach of the tanks themselves. Foolproof voice or other prearranged signal systems must be devised for these scouts, and the entire ambush crew made familiar with them.

Next in importance to the success of the ambush itself is the safe withdrawal of the personnel and ve-

hicles. If the ambush is well planned and rehearsed, if surprise is complete, and the men are capable of dealing with the unexpected turns of action that inevitably arise, the casualty list should be negligible. If the withdrawal is equally well planned and rehearsed, the loss in men and vehicles should not be increased.

Each man should be aware of the fact that less than five minutes elapse between the stopping of the first tank and the completion of the destruction. All members of the party withdraw as soon as their particular mission is completed. The location of the rallying position itself and the alternate routes must be explained clearly to all. The rallying position should be as close as is feasible. This depends upon the terrain, tactical situation, and location of friendly and enemy troops.

The last step in the general plan is the rehearsal. The time available, after the ambush is planned and set up, determines the nature of the rehearsal in actual combat. Many circumstances do not allow for rehearsals of every ambush on the ground, nor can they always include the details peculiar to the situation. But whenever possible, and especially in training, a rehearsal should be planned and executed.

Although surprise and the resulting confusion to the enemy are the basic elements of the tank ambush, they both depend on clear planning and the confidence, initiative, and ingenuity of the individual. It is the elemental, almost primeval, instinct of planning and springing the trap on the unsuspecting game upon which the success of the engagement depends. Clever, wily, and courageous, the tank ambusher in reality fights a man-to-man battle. That is what makes it a sporting venture, as well as a handy ace to have up one's tactical sleeve.

**Dismounted Tank Destroyer in foxhole awaits signal to heave Molotov and follow through with small arms fire on ambushed enemy armor.**





# The THREE C's - Cove

by Captain George E. Price, Cavalry\*

THE soldier's job is to stay alive and continue fighting. Simple, protective methods for concealing himself by artificial and natural means will enable him to keep on living, shooting, and killing.

Instruction should stress the old fact that the enemy has little chance to hit what he cannot see. Cover, concealment, and camouflage are vital subjects. Continued throughout the training period, effective camouflage practices must become second nature to every man in

\*Instructor, The Cavalry School.

Figure 1. All equipment must be painted—any shiny surface reflects light.



the unit. The earlier the soldier gets the "Know Why" and the "Know How," the earlier his unit can take the field and fight effectively.

There is only one way to make sure of it.

*What men do in training, they will do in combat.* The truth of that statement has been established by authoritative reports of our observers on the fighting fronts.

During training, nothing should be taken for granted. Men in combat do not suddenly acquire the ability to do things that have been omitted in their training. The activation of the instinct of self preservation cannot be depended upon by unit commanders to make up for deficiencies in their instruction. Second nature actions and reactions are initiated only by drive, foresight, sweat, and uncompromising attention to the smallest details in training.

For the fast-moving cavalry troops, the two *fundamental* requirements of concealment are:

1. Choice of position.
2. Camouflage discipline.

The normal method is camouflage by natural means. Artificial means are resorted to only in cases of necessity.

## THOROUGH INDOCTRINATION

To insure the success of concealment and camouflage training, leaders first must be indoctrinated. If they are convinced that the need for such training is a matter of simple logic and common sense, the training of soldiers will be conducted with the required amount of initiative and energy. Training area inertia is a fault for which leaders are responsible. Laziness in training means lives needlessly lost in battle.

Camouflage discipline is no good unless it is one hundred per cent effective. One careless or lazy man can be the cause of the destruction of an entire unit. Soldiers in training must be impressed with that fact. It is one thing to put out orders and instructions pertaining to camouflage, and quite another thing to see that they are complied with uncompromisingly and continuously. Reliance should not be placed upon the inspection reports of even trained subordinate camouflage specialists. That is a "back door" method. The drive and the impetus necessary to overcome indifference to proper cover, concealment, and camouflage practices during training must come from the top down through the channels of command. It must be relentless and exacting. *All* tactical training must be conducted under conditions as nearly approaching combat as possible.



# Concealment - Camouflage

How does the average soldier react to the camouflage requirements during training? The well-disciplined soldier always is cautious of his personal appearance. He wants to look neat and smart at all times. Unless camouflage training is given early, it is difficult to get him to subordinate this desire to the need for camouflaging himself and his weapons. He is slow to appreciate the necessity for smearing mud on his face, dulling the high shines which certain items of his equipment have acquired under "spit-and-polish" routines.

Unless the "Know Why" is brought out strongly, the average soldier, having been required to mottle his clothing and equipment during tactical exercises, relaxes and becomes somewhat careless in taking care of his uniforms and equipment. Organization commanders should demand that their men live up to the highest standard of smartness when on pass or performing garrison duties. However, time should not be wasted by requiring men to shine or remove mottling from equipment for the usual Saturday inspections. Such a requirement is characteristic of things which in the training period retard a unit's readiness for combat. Distinction should be made between *appearance* and the *operating efficiency* of weapons and equipment.

From the viewpoint of a unit commander, to demand smartness at a sacrifice of combat principles is as wrong as insisting upon the use of close order formations in battle. Lack of smartness in a combat situation will not damage discipline any more than dispersion, which

after all is a battle necessity. *We must train the way that we fight.*

## CONSTANT PRACTICE

Good camouflage discipline requires more than indoctrination. It requires *practice*. Each man's initiative and proficiency must be such that in the absence of orders he prepares himself, his clothing, his weapons, and his vehicles or animals according to the instruction he has received. He will darken his exposed skin with mud or dirt. He will mottle his clothing and web equipment to harmonize with the environment. He will break the regular silhouette of his rifle or carbine barrel with strips of burlap. He will dull everything that shines and destroy the outline of his helmet with brush and leaves.

To make sure that the junior leaders of cavalry units understand and believe in the effectiveness of fundamental camouflage practices, the Cavalry School teaches camouflage where it should be taught—in the field. Under the supervision of the Department of Tactics, demonstration areas have been reserved and developed. They contain training aids constructed locally at a small cost. Similar areas can be laid out by field units.

## INSTRUCTION

In the demonstration area instruction is conducted as follows: Students are transported or marched to an adjacent *assembly* area. Here they are oriented thor-

Figure 2. Good camouflage blends the individual with his background.







Figure 3. Camouflage Demonstration Areas. (See legends.)



## Legend for Area "A"

No.

- \*1. Real ¼-ton truck parked first incorrectly, then correctly.
2. Concealment measures for skin, clothing, and equipment for individuals.
3. Turnoff.
4. Headquarters Section ¼-ton truck model.
5. Supply half-track M3A1 model with 1-ton armored trailer model.
6. Headquarters Section ¼-ton truck model.
7. Alarm, gas.
8. Supply half-track M3A1 model with 1-ton armored trailer model.
9. Latrine, straddle trench.
10. Headquarters Section ¼-ton truck model.
11. Path, dismounted, summer.
12. Path, dismounted, winter.
13. Turnoff.
14. Headquarters Section armored car model.
15. Turnoff.
16. Latrine, straddle trench.
17. Alarm, gas, improvised.
18. 2½-ton truck model with 1-ton cargo trailer model. 3 dull-finish water cans on 3 gasoline water heaters. 1 soakage pit. 1 solid-garbage pit. 1 water sterilizing bag. Demonstration of mess-line operation.
- 18a. Example of incorrect concealment of fox hole, shelter tent, and individual equipment.
19. Half-track M3A1 model with 1-ton armored trailer model.
20. Turnoff.
21. Headquarters Section armored car model.
22. Turnoff.
23. ¼-ton truck model.
24. Maintenance Section armored car model.
25. Maintenance Section ¼-ton truck model.
26. Turnoff.
27. Maintenance Section half-track model.
- \*28. ¼-ton truck model in open under cut brush to break up man-made form and shadow.
- \*29. Machine-gun emplacement.
- \*30. Half-track model dug in under low drape.
- \*31. 2½-ton truck model in open under drape.
- \*32. Track made by light tank.
- \*33. Light tank under tree.
34. Park for visiting vehicles.

NOTES: Items marked \* are not a part of the Reconnaissance Troop Headquarters bivouac. Fox hole is present for each member of the crew of each vehicle in the Reconnaissance Troop Headquarters bivouac.

No drape is needed on any vehicle in the Reconnaissance Troop Headquarters bivouac in the present state of foliage shown; in winter time drapes almost certainly will be needed.

## Legend for Area "B"

No.

35. Mountain wagon.
36. Concealment measures for skin, clothing, and equipment of individuals.
37. Rifle Platoon squad picket lines.
38. Kitchen in operation including:  
2 cavalry pack cooking outfits and/or 2 gasoline water heaters.  
Dulled utensils.  
Soakage pit.  
Solid-garbage pit.  
Traffic control tape at kitchen.  
Mess-line operation demonstrated by serving hot meal to demonstrating troops.
39. Troop Headquarters picket line.
40. Machine-gun squad picket lines.
41. Rifle squad picket lines.
42. Rifle squad picket lines.

NOTES: Prone shelter for each person above or beside his squad picket line.

Equipment generally between prone shelter and picket line.

Latrine per squad to one side of prone shelters.

Gas alarm at kitchen and one near upper end of the draw near "42."



Figure 4. Trail leading into Area "B." (See Figure 3.)





oughly. Each student is provided an aerial photograph of the terrain (Figure 3). The purpose and scope of the exercise are stated. The camouflage discipline required of them during the period is explained in detail. The instructor then outlines the assumed tactical situation for a bivouac. This affords the opportunity for a thorough review of security measures that normally would be taken.

The importance of the time of entry and departure is stressed. It is pointed out that air observation is ineffective during the two low visibility periods—dawn and twilight. Ground troops can and should move in this half light. It is further pointed out that these periods of half light or low visibility vary with the climate, topography, season, vegetation, and of course the weather.

The importance of prior reconnaissance cannot be overemphasized. It is essential that the best troop area available be selected and that each element of the unit be assigned a subarea which will facilitate its tactical employment when the maneuver is resumed. The march of the unit into the bivouac area should be uninterrupted by congestion of the entryways. An element should not have to halt or close up.

#### INITIAL POSITIONS

March to the designated subarea should be made at intervals consistent with the tactical situation. For the purpose of this exercise each student is designated a leader of a billeting party and as such is required to make a reconnaissance of the entire area. He must note terrain characteristics with reference to landmarks. He must select initial positions for guides to conduct platoons to their respective subareas.

The location for the kitchen is determined by considering the following factors:

1. Centrally located if possible.
2. Best available overhead concealment.
3. Covered routes for movement of kitchen equipment, rations.
4. Water supply.
5. Good surface drainage.
6. Mess line formation.

After reports are made and discussed, the instructor conducts students to the several installations within the Area A in the order shown in Figure 1.

#### AREA A

Demonstration Area A is developed to represent an overnight bivouac for troop headquarters of a reconnaissance troop, mechanized. Aerial photographs of the area were taken before and after the installations were made. Similarly, it was checked by aerial observers during all stages of its development. Dead ends, turn-

Figure 5.—Entrance to Area "A." (See Figure 3, No. 3.)

Figure 6.—Trail leading into the area from Figure 5.

Figure 7.—An entrance or exit to Area "A."

Figure 8.—Half-track with trailer (wooden model).



around, visible turn-offs, and widening of existing routes were avoided. Turn-offs are concealed from air observation by overhead foliage. (See Figure 5.) The entrance shown in Figure 5 was selected because the large tree (center of illustration) affords ample concealment from the air and is located near the main trail. The effectiveness of an entrance of this kind can be damaged seriously by careless driving and turning. Personnel and vehicles use only the *covered entrance*. This area (see Figures 3, 5, 6, and 7), however, has more than one exit. It is located far enough from the main road to insure against normal noises being heard at that distance.

The model vehicles shown in figures 8 to 10 inclusive are constructed of wood to prevent excessive scarring of the terrain. This was considered expedient because of the necessity for scheduling successive demonstrations. Before the dummy vehicles were moved into the bivouac location, real ones were moved into and out of the area once in order to produce realistic scars on the ground and to emphasize accessibility of the area.

All routes into and through the area have been wired off to prevent unnatural scarring by personnel. (See Figure 6.) Students, as well as demonstrating personnel, are required to observe camouflage discipline. They are not permitted to widen existing trails or make new ones. The entire area is fenced in to prohibit trespassing or use of it for other purposes. Figures 1 and 2 show the extent of the individual camouflage required of the individual as a part of the exercise and demonstration. In situations where camouflage suits are not available, a few dabs of paint and scraps of tape and cloth will do the job.

During the supervised tour, the features of each installation are discussed by the instructor. Students have at all times the privilege to comment and ask questions.

#### AREA B

Area B is a model installation complete with trained personnel from the 29th Cavalry Regiment (Composite), assigned to the Cavalry School. The mounted rifle troop, completely equipped for the field, is shown in bivouac. During the course of the demonstration, this troop is fed a hot meal prepared in the bivouac area. Mess-line operation—handling of mess kits and kitchen utensils in daylight—according to recommended concealment practices, are demonstrated.

Earlier in this article it was stated that for fast-moving cavalry troops, the two fundamental requirements of concealment are choice of position and camouflage discipline. It is believed that the use of demonstration areas, such as those described, is the best method for impressing junior leaders and other cavalry personnel with the logic and the common sense of camouflage and concealment practices.



Figure 9.—Half-track with trailer (wooden model).

Figure 10.—Half-track (wooden model).

Figure 11.—Squad picket line.

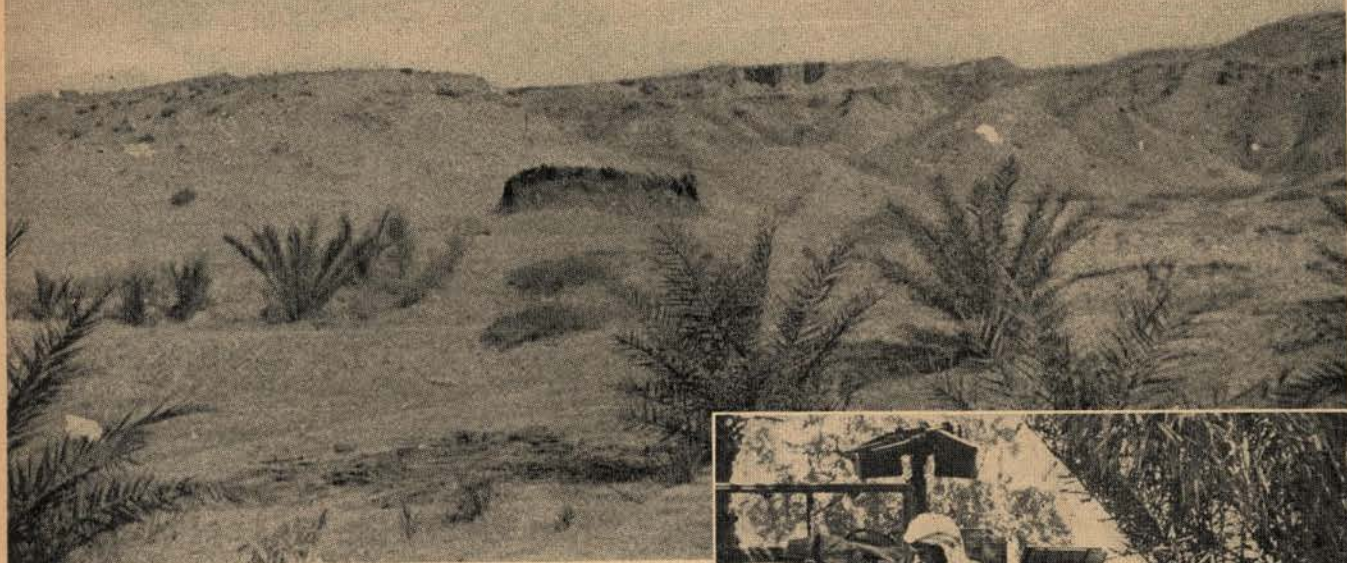
Figure 12.—Squad picket line.



CARDED

# A Desert Reconnaissance

by Captain Marvin H. Smith



The desert south of Negrine. After one examination of this terrain, Captain Smith decided to go ahead without his half-tracks.

AFTER the German smash through Kasserine Pass on February 17, 1943 was halted, we were catching our breath in bivouac near Elma el Abiod, south of Tebessa when our battered reconnaissance company received orders from II Corps Headquarters to seek contact with the enemy to the south—a mission that was to develop into a blistering nightmare across uncharted desert sands.

We had no idea that within the week we would be feasting on camel steaks and be saved from stalling in a small desert outpost by a mysterious cache of gasoline, miles from the nearest supply depot.

The company was ordered to move at once 35 miles south to Bir el Ater, set up headquarters there, and dispatch reconnaissance platoons southward in an effort to maintain contact with the enemy.

Remnants of one platoon that had suffered heavily in men and vehicles at Kasserine were sent north to maintain liaison with the French forces. The pioneer platoon was to guard a minefield in a mountain pass just west of Elma el Abiod.

At 1600 hours, the remaining two reconnaissance platoons and headquarters platoon moved out in open column formation on our new assignment, while the



A friendly Arab examines a weapons carrier mounting twin-fifties, as the men eat C rations beneath a date palm at Negrine.

rest of our battalion remained at Elma el Abiod. We were forced to close up the column to maintain contact in the blackout-driving after sundown.

At the end of a wearisome 10-hour trip over dusty, wind-swept, rocky roads, we reached Bir el Ater at 0200 hours. So far no enemy had been sighted. At daylight, after only a few hours of sleep, our platoon was further ordered to push south and west some 40 miles to Negrine and reconnoiter that area for possible tank approaches and determine proximity of the enemy forces.

It was believed that the French occupied Negrine, but we were warned that enemy patrols had been operating between our position and this little town, a fact we digested slowly as we moved out.

Rather sleepy-eyed from lack of rest and still somewhat dazed by the quick turn of events, we moved

\*Tactics Department, Tank Destroyer School.

EDITOR'S NOTE: Captain Smith and the members of his reconnaissance platoon of the 701st Tank Destroyer Battalion were awarded the *Fourragere*, representative of the French *Croix de Guerre*, for their participation in actions with Company B, of the same battalion.



out at 0500 on the second day of our mission. Prepared for anything, and not sure whether we would meet enemy patrols or friendly French, we now advanced by covered bounds from terrain feature to terrain feature. Our relief was great when we ran into a very dejected French driver standing beside a stalled ¼-ton truck a short way out of Negrine. In his exuberance over his rescue by Americans, the Frenchman jabbered at such a rate that my meager knowledge of the language, based on two years' study in high school, didn't have a chance. By use of gestures and a plentiful sprinkling of sand drawings we were able to learn—at least we hoped we had learned—that Negrine was outposted by the French.

Somehow the Frenchman had yanked the ignition wires under the dashboard and was at a total loss as to what caused his motor failure. Within a few moments one of our mechanics had the truck purring again. It was truly a crowning achievement in Franco-American relations.

It had been a profitable meeting all around. The Frenchman rode away blessing the mechanical genius of Americans, and we moved forward, relieved by the knowledge that we would meet friendly troops at Negrine.

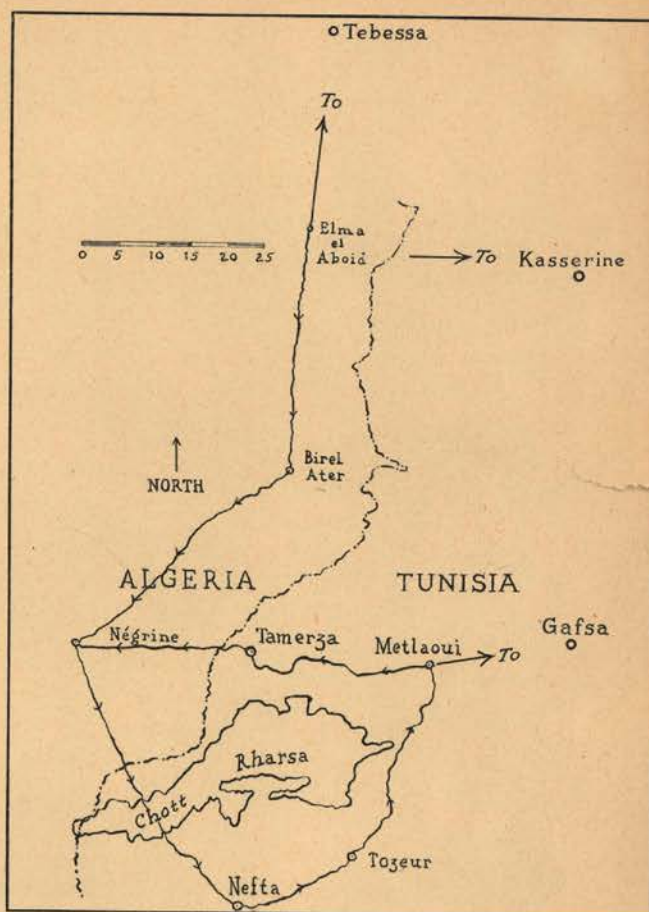
Late that afternoon, we nosed into Negrine after playing tag with frolicking herds of wild camels during the late stages of the advance. Negrine was a mangy settlement of some 30 or 40 adobe huts and concrete buildings built in a defensive circle on the edge of the desert. French information that the Germans had displaced southeast across the desert some 50 or 60 miles to Tozeur indicated the futility of obtaining enemy information at Negrine.

More than 50 miles to the south across shifting desert sands was Nefta, the lone French outpost between Negrine and Tozeur. For a week no word had been received from this outpost, though it was hoped it still existed.

Three days before we arrived, two French officers were killed when their ¼-ton truck struck a German mine as they attempted to reach Nefta. Fifteen enemy tanks were reported at Tozeur, and lively enemy patrol action had been met throughout the area to the south. After the jeep incident no further efforts had been made to reach Nefta.

At Negrine we met Lieutenant Heller, a French officer with whom I was to become well acquainted. Together we pored over maps of the area—French maps with a superimposed British grid.

Orders had been "to seek contact with the enemy to the south." So far, we had not been able to do this. But because we had pushed more than 30 miles south of the company headquarters at Bel el Ater (far out of range of our only radio, the SCR 510). It had been impossible to keep superiors informed. Under these circumstances I made a command decision in keeping



Route of the Reconnaissance Company, 701st TD Battalion.

with my interpretation of my original orders. I decided to try to reach Nefta, and if possible, Tozeur. If 15 enemy tanks were at Tozeur, I knew the company and battalion officers wanted to know it. If I waited for messengers to run back to Bel el Ater and return with new orders, much valuable time would be wasted. It was under these conditions that I decided to take the responsibility for pushing farther south and east.

Lieutenant Heller, in spite of doubts expressed by his colleagues as to the sanity of the trip, offered to accompany me. With his help, we persuaded an Arab scout, who had recently made the trip by camel, to act as our guide, though neither of us had much faith in him.

The half-tracks were left in Negrine, since they would be unable to negotiate the soft sand of the desert, and we proceeded south with only the six jeeps. In the event that radio contact could not be reestablished, the party left behind was to send a cycle rider back to company headquarters to inform them of our plans.

As we pushed deep into the desert, our lack of effective communication increased. It was now two days since we had been in contact with battalion headquarters at Elma el Abiod. At the end of this weird desert journey we were to learn that two days after we left the half-tracks at Negrine, the entire party was given up for lost—all because of a breakdown in com-





Captain Marvin H. Smith, the author, dressed in the combat garb of the desert. The gloves, he explains, were for protection on cold desert nights.

munications. A searching party actually was formed to recover our bodies.

(Right here, it should be emphasized that long-range radio sets are as vital to reconnaissance as ammunition is to guns. At least an SCR 193 or a similar radio is recommended for each reconnaissance platoon.)

Despite the risks described in the proposed push on to Nefta, all of the men wanted to make the trip. They expected plenty of action and pleaded for a chance to avenge the drubbing taken at Kasserine Pass.

After the men who would make the Nefta trip were selected, those left in the Negrine party were put under the command of a section sergeant, with instructions to inform the Bir el Ater headquarters of our plans and to attempt to maintain radio contact with us.

Our party of 16 men, one Arab, one French officer and myself pushed off on the morning of the third day after we had left Elma el Abiod. We navigated by compass, since no landmarks existed in this vast expanse of shifting sands. Our top speed was about 15 miles an hour through the soft, hot sand. It was necessary to stop frequently to check compass readings, for in crossing small dunes we had a tendency to veer to the right and, unless we had made corrections for these turns, we would soon have been going at a tangent to our desired route.

Our progress was further hampered by the need for continued foot reconnaissance from the sand dune crests. Before crossing each major crest, the men in the leading jeep dismounted on the rear slope and went forward on foot to reconnoiter the area of our projected advance. Now that there was no road to follow, we traveled in staggered column formation with mutual fire support, ready to meet anything over the next dune.

The thermometer must have soared to 120 degrees, and the oppressive heat bore heavily upon us. Motors soon overheated in the heavy going in low gear, and the men shed all but the bare essentials of clothing.

Many of the dunes were so high that the jeeps stalled before reaching the top. We would back off a few hundred yards and, with motors wide open, hit the dune again. It soon became a game for all concerned except the Arab. Unused to traveling in jeeps, he was in a perpetual state of terror. He held on for dear life and offered prayers to his God in loud wails.

The only human contact that we made during the first blistering, searing day came in midafternoon as we topped a mountainous dune. Below us spread a ragged array of tents from which spewed a stream of screaming women and howling dogs. It was an Arab village and apparently the men were off getting water. The column was halted, and the vehicles arranged behind a crest to cover the advance of two men with tommy guns. Once they determined that no enemy were present, we pushed ahead.

It was about 1600 hours when our next break came. We were becoming apprehensive. Certainly, we thought, we had gone far enough to reach Nefta. We were continually assailed by the fear that we had missed the French outpost, a mere dot in the sandy wilderness. Suddenly, we saw spread in front of us a clump of palm trees growing on the edge of a lake. We estimated the distance at about five miles and pushed forward with everybody in high spirits. We traveled for half an hour, but our oasis was no nearer. Thinking it was farther than we had estimated at first—distances are very deceptive in the desert—we pushed ahead once more. After the second such stop, we determined that we had been fooled by a mirage—as realistic a one as I ever hope to see.

As it turned out, we were approaching the huge Chott Rharsa, a flat salt lake bed with surface so smooth and hard that for the first time we could let our jeeps go and make real speed.

We rechecked our compasses and continued on, a downhearted crew. At about 1730 we saw several men running along the top of sand dunes about 1000 yards to our right front. Two jeeps were dispatched in pursuit, but they were unable to find these ethereal men. A few minutes later a radio call was received from the last vehicle reporting that it had been fired upon. The driver wanted to know what to do. After it was ascertained that nobody had been hit, we continued our advance.



Darkness overtook us, and we were still at a loss as to our distance from Nefta, though it seemed as if we had traveled far enough to reach the outpost and return to our base. In these vague circumstances, we decided to spend the night there on the dunes. The platoon was drawn together in a tight Indian circle of no more than 50 yards in diameter and a walking guard, armed with tommy guns, was posted. We ate a distasteful cold supper of C rations in the piercing chill that clamps down upon the desert as soon as the sun goes down.

All was quiet until 2100. At that hour we heard vehicles moving slowly north to the east of us. We saw a bright flash of light, and then just darkness. All we could do with our meager force was to wait and see what happened. Soon the noise faded in the distance and we returned to sleep. Forty-five minutes later the same motors were heard some two miles on the other side of us, moving south. Once again our patrol sounded the alarm. We all came to the conclusion that we were being looked for by someone, probably a party sent out by the men who had fired upon us the preceding evening. Again the noise faded and we returned to our blankets, but the turn of events had created some uneasiness.

At dawn on the fourth day, after another cold meal



Lieutenant Heller, the French officer who accompanied Captain Smith on the reconnaissance trip, is pictured beside a wrecked Allied plane that was found and reported to higher headquarters.

of C rations, we moved out. The Arab was slowly becoming educated to eating the American food, though he was showing no enthusiasm for it. But neither were we. With high hopes of entering Nefta within an hour, we moved forward in the same staggered column formation that we had used previously.

We had traveled about three miles when a soldier was seen approaching on foot. As I dismounted and went forward on foot to investigate, the patrol immediately spread out and covered me with their machine guns. This stranger wore an overseas cap, a long flowing cloak with a red ammunition belt at the waist, and sandals. He carried a rifle. We approached each other cautiously—myself with a tommy gun ready in my hand, and he, as I afterward learned, with his finger on the trigger of his rifle. Through Lieutenant Heller, it was learned that the stranger was a French member of the Arab Desert Command, and his entire patrol, lying just behind the next sand dune, was likewise covering his approach.

After a brief discussion with Lieutenant Heller, the officer agreed to accompany us the remaining 10 miles to Nefta, while his patrol continued on its routine desert mission. It was one of his men who, mistaking us for Germans, had fired on us the day before. And it was they who had been looking for us the night before.

We reached Nefta at about 1000 hours on the fourth morning after we had left our battalion headquarters at Elma el Abiod. Our gasoline supplies and rations were running dangerously low.

Nefta was a cluster of Arab mud huts and a small French brick fortress. We found the entire French garrison of four officers and 12 men outside the building to greet us with two machine guns and eight rifles trained upon us as we roared joyously into the city. They had seen nobody for a week and thought we were the Germans.

Once it was determined that we were Americans, they threw their arms about us in joy and invited us into their headquarters. They bombarded us with questions on the turn of war to the north. They said they were prepared to fight to the last man, since they had no gasoline and only one broken-down American 2½-ton truck. That news about no gasoline didn't bolster our spirits. Our original supply of full gas tanks and an added five-gallon can for each jeep was dwindling after our buffet with the desert sands. It was lucky that a couple of the jeeps had two instead of only one five-gallon gasoline can, or we would have been stranded there.

When we spoke of pushing on to Tozeur, they told us of three men who had left the previous night in a ¼-ton truck and had not been heard from since.

We told them we would go there as soon as we had something to eat and try to learn what had happened to their three men.

Lieutenant Heller and I accepted an invitation to eat with the officers. They served a tasty meal of wine,





A French civilian stands at a distance and gazes curiously at the men of Captain Smith's platoon as they arrived at the Nefta garrison. The French tri-color can be seen in the background waving over the garrison gate.

celery tops covered with oil, French bread, a few olives, and a meat course.

Only after we had finished the meat did they tell us that it was camel steak—the only meat available at this outpost. It was delicious.

We were plenty worried about our gasoline supply that afternoon as we pulled out of Nefta with the good wishes of the garrison and one of the largest French flags I have ever seen. We were to tie it onto the lead vehicle as we approached Tozeur as a sign of friendly troops to the French patrol that had preceded us—if that patrol was still alive.

At Negrine the French commander had told us that we would never be able to enter Tozeur with jeeps. He was certain that the town was occupied by Germans and that it would fall only after a fight.

We carefully avoided a small road that led in the direction of Tozeur. We had gone too far to run chances of setting off German mines at this late date. After three hours we saw Tozeur in the distance. We stopped about five miles from the city and fastened the flag to the leading jeep. It extended as high as the radio antenna. If the French, providing they were still alive, could not see that flag, they certainly would not have been good enough marksmen to hit us anyway.

The patrol spread out as we approached the town. We were within 800 yards, when a vehicle came scooting out from between two buildings. The patrol stopped, and all gunners manned their guns. We were ready to put up a fight; but it proved to be the French

patrol. Lieutenant Heller soon learned that the Germans had left the town but 12 hours before. It was nearly sundown when we were taken to the center of the town and introduced to the mayor.

Much to our amazement, we found that Tozeur was a resort town with one modern hotel. That night each man had a room and private bath to himself. What luxury! A paradise in the middle of the desert.

We posted a guard about the vehicles in the hotel courtyard and turned in for the night. But our sleep was of short duration. At about 2400 a French soldier pounded loudly, persistently on the front door of the hotel. He said he had a message for Lieutenant Heller. He said the lieutenant was wanted at the railroad station at once. It was pitch dark, and we thought it was a trap, but we decided to go. We took one jeep with a loaded machine gun, and Lieutenant Heller and myself each carried a tommy gun. As we approached the railroad station, we noted several parked vehicles. We went to the station entrance with our tommy guns at full automatic, but to our relief we learned that a French caravan had arrived to take over Tozeur. We never were certain where it came from, but we were mighty glad that it was there.

With the next town of Metlaoui more than 30 miles away and with our gasoline supply almost depleted, no word from company headquarters, and with only one day's rations left, we found ourselves in a nasty jam, until the natives miraculously came to our aid.

From caches in the desert, the natives dug up several



50-gallon drums of 100 octane gasoline. Stories of its origin varied from one that the British had buried it when the Germans approached, to another that it was saved from a wrecked transport plane and hidden before the Germans could reach it.

We took on all the gasoline we could carry and began a search of the Tozeur area for mine fields—a rather tricky business at best. We found no mines but made notes on all the information that we had gathered, preparatory to moving out the next day—the fifth since we had left Elma el Abiod. Still no word from Negrine or any of the other bases.

Pushing on toward Metlaoui the next morning, we traveled off the roads as usual to prevent running over German mines. When we came upon a bridge, about 15 miles from Tozeur, we fanned out about two miles and dismounted to reconnoiter the area on foot. We found that the Germans and Italians had cut all the telephone wires in the vicinity and had placed the telephone poles through the spans of the bridge to prevent anyone from driving across it. One of the men discovered three grenades hanging on a single thread of wire from one of these telephone poles. That was enough; we moved off at a distance in a hurry and set off the grenades by rifle fire.

We crossed the creek at a ford and continued on our way. As we approached Metlaoui, we noticed scattered letters, ration cans, and some ammunition and clothing lying on the ground, signs of hasty withdrawal by the enemy. Only two cars went into the town. The rest of the party, left at a road junction just outside the city, was instructed to remain there for two hours and, if we did not return within that time, to go back to the base camp at Negrine, directly west of this point.

As we approached the city, we were spied by five children playing in the streets. They immediately ran screaming to their homes, and we proceeded into the town. As soon as we were recognized as Americans, the residents came pouring out of their houses, to form a cheering mass in the streets that immediately halted our progress. They climbed upon the jeep, shook our hands, patted us on the back, gave us wine—good wine—and cried with joy. A pretty French girl hugged and kissed every man in the patrol, which made nobody angry.

We were told that the Germans had left the town only four hours before we arrived. We were gaining on them, but we still had not caught them.

We drove through the streets to the center of this town of some 5,000 persons and conferred with the officials. We had neither the gasoline nor food for further pursuit, and it was necessary that we get the information collected back to battalion headquarters. After searching the town for mines and booby traps, I returned to the road junction where the remainder of the patrol had been left. When the men at the crossroads learned of the reception in town, they set up a howl for a second reconnaissance.

It was about 1400 hours, and we decided we must head toward our base camp and get our information back to Elma el Abiod headquarters. After four hours of uneventful traveling in a general westerly direction, we arrived at Tamerza where we found the garrison hastily erecting fortifications. They had heard the Germans were coming. We assured them the enemy was moving east in the direction of Gafsa. Whereupon they dropped their work and decided to take up pursuit of the Germans. Members of the party who had been left at Negrine were in Tamerza preparing to go out in the desert and hunt for us. It had been three days since we had left them, and we had been out of radio contact for all except the very early hours of that period. They informed us that company headquarters at Bir el Ater had given us up for lost three days ago.

We returned to our base at Negrine where we picked up our half-tracks and then headed almost north to company headquarters at Bir el Ater. From there our reconnaissance report was radioed to battalion headquarters at Elma el Abiod. Headquarters was very much pleased with it, for our reconnaissance showed that the entire southern area was now clear of the enemy. Just a few days later, the Germans, who had fled from Metlaoui before we arrived, were shoved out of Gafsa, and the British Eighth Army continued its unrelenting push up the Tunisian coast.

#### CONCLUSION

This patrol brings out several pertinent points:

*First, the need for better communications for reconnaissance units.*

*Second, the advisability of using the smallest number of men and vehicles possible to accomplish a mission.* In the above reported case, it would have been futile to have attempted to continue beyond Negrine with the half-tracks.

*Third, much can be gained by a reasonable show of initiative.* By moving on south of Negrine we cleared up doubts about a broad area at a great saving of time. Since it was found that danger of enemy action no longer existed in that section the battalion was relieved for action elsewhere. This could not have been learned had our reconnaissance stopped at Negrine.

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*Watch for The Cavalry Journal's new book on*

#### RECONNAISSANCE

—a collection of outstanding articles and excerpts published during 1942-43.

For publication date and price, see next issue.

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British Official Photo

The Reconnaissance Corps, the "armed eyes of the army," seeks out the enemy and establishes preliminary contact. Dispatch riders play an important part by taking messages and keeping in touch with the various units.

THE Reconnaissance Corps is not only the eyes and ears of British infantry divisions, but is also prepared to serve as a clenched fist. One battalion of the corps is attached to each division, and has as its main task the gathering of information, by aggressive means if necessary. Thus the corps fills a rôle which used to be that of the cavalry. Its regiments, feeling their way forward and throwing a screen in front of the advancing army, are careful to let the main forces know with what enemy strength they are confronted.

Fighting for information is the Reconnaissance Corps' chief function, and a regiment must expect to find itself far in front of the main forces. Widely extended, it searches likely localities for trouble, or watches the enemy's movements. Again, it may be called upon to capture or defend important ground, or to send out patrols to give warning of the enemy's approach. The only circumstances in which the corps is not called upon to operate are those, such as prevailed at El Alamein, when the opposing armies found themselves in close contact. The moment that battle is given, while the forces maneuver for position, the Reconnaissance Corps comes into its own.

The Corps did particularly impressive work during the Tunisian campaign. In the first stages of the operations of the First Army, reconnaissance regiments moved two hours ahead of the infantry divisions to which they belonged and acted as an armored screen. Sometimes they advanced as much as 40 miles ahead of the main forces on their tireless search for the enemy. With the enemy found, their job was to overcome him if the opposition was light, and thus clear the way for the infantry advancing in their wake. If this was impossible,

# British Re

they would pin-point and make contact with the enemy so that on the arrival of the infantry they could promptly and accurately be put in touch with the position.

With such a rôle, it will be seen that the regiments of the Reconnaissance Corps have to be specially equipped for both speed and striking power. In fact, each regiment has a great fleet of mechanized vehicles of various types which include armored cars and Bren carriers, troop-carrying trucks and motorcycles. In Tunisia armored car patrols often averaged between 50 and 60 miles an hour at their work. The armament of a reconnaissance regiment includes antitank artillery, batteries of mortars and great quantities of Tommy guns and light machine guns. It is, in fact, equipped with all the infantry weapons, with an especially high percentage of automatic arms.

During training, great care is taken in seeing that the Reconnaissance Corps lives up to its reputation as a "corps d'elite." Trainees are chosen with great discrimination, and after basic training are sent to the specialists' squadron where "talent scouts" keep close watch on them during the early stages of their work, so that in due time they can pick the right men for the right job. The company which produces signallers, motorcyclists and mechanics has the first choice of the personnel available.

Wireless is the life blood of reconnaissance in modern warfare, and the signallers are the most important trainees in the corps. In three months, recruits master three different types of wireless sets which send information from the smallest sub-unit to regimental headquarters. Messages must be transmitted on the Morse Buzzer at rates of 12 to 15 words a minute. Scores of motorcyclists are also used by each regiment for intercommunication. The mechanics are trained intensively and in three months master a trade which could not be learned in less than a year during peace time.

Other companies train men for work with the armored cars and carriers. These crews must learn enough of tactics to take their place in an operational scout platoon when posted away from the training center. The correct procedure for transmitting messages to a receiver over 20 miles away must be mastered. Crews must also be well trained in map reading, in field engineering, demolition, and mine clearing, among other subjects.

Assault infantry are trained in another company. They are taught to swim rivers and scale rocks in full kit and are hardened by intensive drill, physical training, and long marches and exercises on the scantiest of rations.

The men produced in this hard school have proved superbly effective in action. Many stories are told of their work in Tunisia, in which not only their re-

\*Prepared by the Joint Liaison Committee.



# Reconnaissance Corps

markable speed but also their hitting power proved to be important factors in hard fought engagements. After the first advance from Algiers, one troop with a battalion in the First Army was given the task of racing forward to seize and hold a bridge beside a small village. The bridge was tactically important as it commanded a road, access to which was necessary for lines of communication. The troop was ordered to seize the bridge, if possible, before the Germans took it, and, if too late to do that, to drive the enemy from it. The armored cars went forward at top speed with the Bren carriers behind, and the unit reached the village in the early hours of the morning, eager to go into action for the first time.

On approaching the bridge, the troops decided that the best way to hold it was to go some two miles beyond it and make their dispositions there, on the far side of the village. They dug weapon pits, posted sentries, and settled to wait for the Germans. As they were not attacked that night they decided at first light to send out a fast armored car patrol to discover the whereabouts of the enemy. Some 10 miles from the bridge this patrol spotted the Germans, put down a smoke screen to cover their retreat, and got back in time to warn the troops holding the bridge of the enemy's approach. As a result, when the enemy attacked that afternoon with a force five times as strong as that holding the bridge, the troop's plans were made and it was able to repel the attack with very severe casualties to the enemy and with but slight loss to themselves. The troop was able to hold its position until ordered to withdraw by the division commander.

Among other stories of the deeds of the Reconnaissance Corps in Tunisia is one that shows how a fighting patrol goes to work. It happened that near Medjez el Bab the enemy had penetrated into a valley that was of great tactical importance. They had occupied several farms in this good tank country where there was much open ground with few obstacles. A troop of the Reconnaissance Corps was given the task of attacking one of these farms which had proved extremely troublesome. Its task was to see if it were held by the enemy, and if so, in what strength. The spearhead of our attack was formed by two heavy armored cars which approached the farm along a very open track with a hill on one side and thick bushes on the other.

The leading car was within 200 yards of the farm when two German antitank guns opened fire on it. The leading car was hit three times and completely knocked out. The second car also was hit, the turret damaged, and three members of the crew wounded. The driver of this car, however, was uninjured, and he promptly made for the farmyard, thrust his Tommy gun through

the driving vizor and did not cease firing until he had polished off the crew of the German machine gun. Then he swung his car back across a ploughed field and around the rear of the antitank guns which were still firing at him, and thus made his way to our lines. During the return trip his car had received two more direct hits, and when he finally returned, it was almost completely wrecked. This exploit was a typical example of how the Reconnaissance Corps goes to work. It fought for its information, found out that the enemy was on the farm, where his guns were, and how this strong point could best be attacked.

The Reconnaissance Corps also succeeded in capturing a good many of the German parachute troops during the Tunisian operations.

It is clear that every man in the Reconnaissance Corps must be an individualist, capable of taking the initiative into his own hands, as he may have to do vitally important work while temporarily out of touch with his officers.

One of the youngest units and one of the most highly mobile in the Army today, the Reconnaissance Corps gave a superb account of itself throughout the Tunisian Campaign. It fought for information and got it, and ably acquitted itself in the three other main tasks which fell to it. It protected the main flank of our forces; it seized and held ground needed for the advance of our divisions; and finally, it repeatedly sent out far reaching patrols which gave due warning of enemy approach.

This line of Humberette scout cars, proceeding along a country road, are alert against possible air attack.

British Official Photo





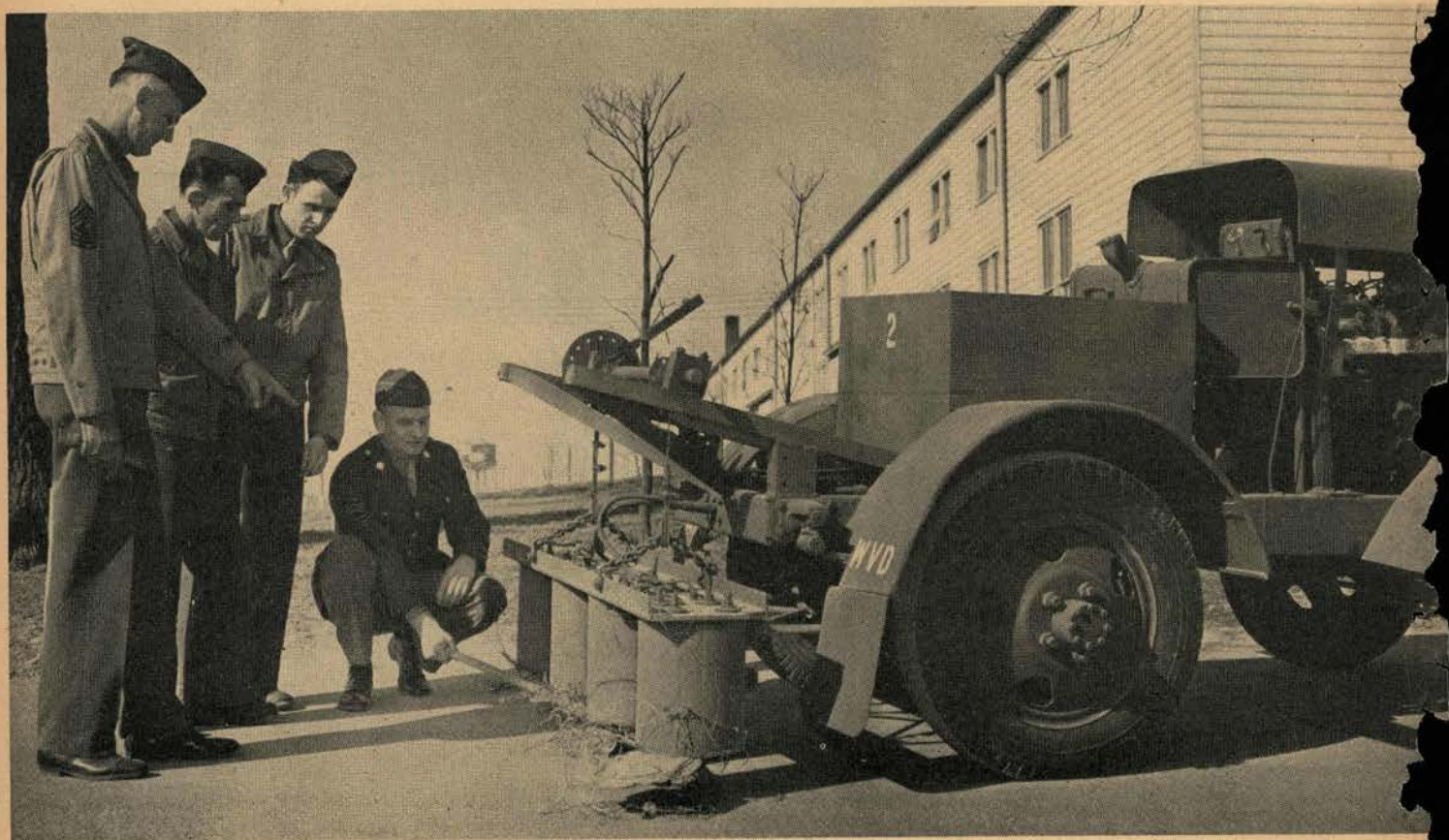
# The Armored Saves Tires and

A BOON to the national rubber conservation program is the queer, helpless looking, yet terrifying gadget constructed in the Wheeled Vehicle Department of the Armored School at Fort Knox.

The whole idea grew out of the increased incidence of punctures and cut tires in the Armored School area, which two years ago was literally blanketed with buildings 10%, 25%, and 50% complete and a few just finished. The accompanying menace of nails, wire and miscellaneous metal oddities loomed very large at a time when rubber was becoming increasingly valuable and its care imperative.

The device which aided materially in solving the tire destroyer problem at Ft. Knox was created according to a single specification—that the device be capable of attracting and holding a 100-pound anvil. This was to insure enough magnetism so that no mere nail would ever go unnoticed within two feet.

Two views of the Armored School's big new road magnet, which picks up nails, wire and other metal that might damage tires. Above: rear view—the tractor in background furnishes the motive power. The "guts" have been removed from the differential housing on the "bug's" rear axle. Below: The men who built the road magnet. They are, left to right: Master Sergeant C. A. Bonnarens, Private C. R. Stone, Private B. R. McNamara and Master Sergeant B. Pelton, all of the school's Wheeled Vehicle Department.





# Armored School's Road Magnet

## Salvages Scrap

Consisting of a stubby frame (salvage), an old engine (reconditioned), a DC generator, with rheostat (cost \$80.00), and four magnets, the completed whatyou-maycallit has many times repaid its cost with the amount of metal scrap it has picked up as well as tires it has saved from punctures.

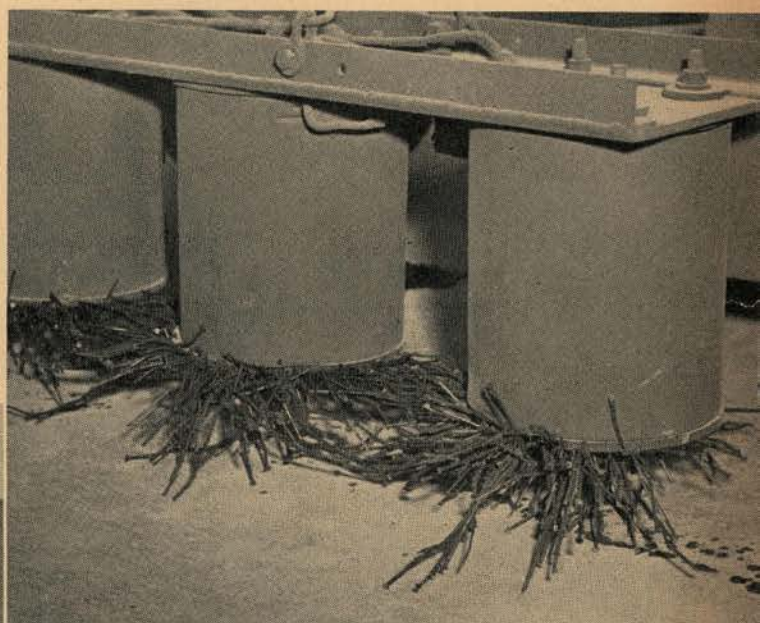
The first step in the construction was to cut down an old 4 x 2 chassis (I.C.'d) by taking a section out of the center and leaving frame and wheels with a 60-inch wheelbase. A dead axle was substituted for the live axle. A good strong hitch was added. The engine was mounted on the front half, and the generator on the rear half of the chassis. A machined flange was bolted directly to the flywheel with a flexible coupling on the shaft between the flange and the generator. A 54-inch bracket was added to the rear of the frame to support the magnets. A windlass incorporated into the bracket allows the magnets to be raised and lowered as necessary.

Each magnet consists of a 4 x 4 mild steel core with corners rounded. The core is welded to a 12-inch circular section of old boiler plate and is wound with No. 8 wire from the salvage yard, brazed at the splices. Each coil of a pair is connected to the other of the pair

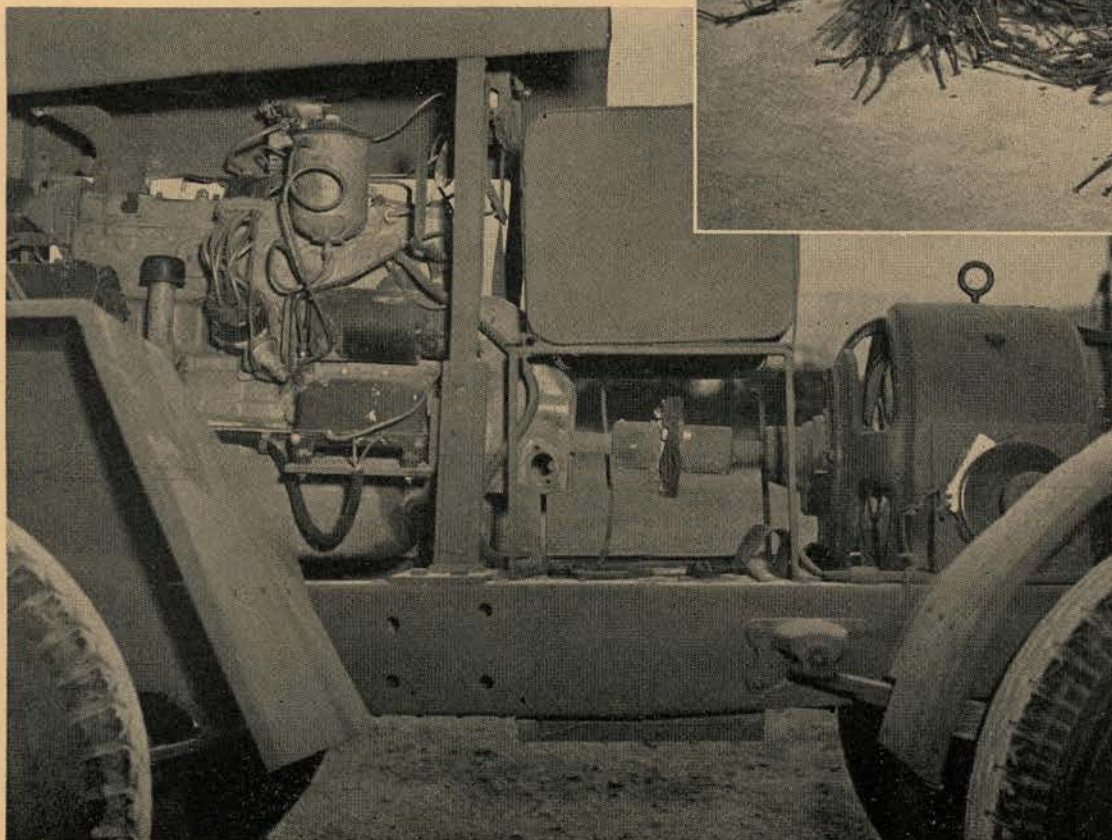
in series, and the two pairs to each other in parallel. One magnet can actually lift the anvil 6 inches by attraction.

Statistics show that during 70 hours of operation in the Armored School area the machine has picked up 1017 pounds of metal, mostly nails and short pieces of wire. It was borrowed by the Post Engineer, who ran it over an area where old buildings had been razed, and in one and one-half hours picked up 1500 pounds of nails, which proves that it has the additional advantage of being able to salvage critical scrap as well as protect precious tires from unnecessary injury.

In the miscellany collected was a battered gallon bucket, a "STOP" sign, 3 second lieutenant bars, and 41 rubber heels complete with nails.



Above is a close-up of magnets and bracket. Only about 45 amps of the generator's 80-amp capacity are required.



Side view at left shows the weld in the frame and the flexible coupling. The battery is just visible behind the weld.



# Jeff—The Army's

reclamation. The manufacture of hand-sewn ambulance harness followed after the completion of the reclamation program.

The harness and leather shops were not found wanting in the development of new techniques and fabrication of new items when the United States entered World War I. Demands of that war made it necessary to enlist the coöperation of many leather manufacturing plants under contracts processed by the Jeffersonville depot.

In the early twenties much of the metal, leather and textile machinery had been transferred to this depot from the Rock Island Arsenal as the result of the assumption by the Quartermaster Corps of many articles formerly handled by the Ordnance Department. This greatly facilitated the experimentation, modification and development program of army equipment.

There is nothing in its history of which the Depot is prouder, or has achieved wider fame, than the Phillips Pack Saddle, developed by Colonel Albert E. Phillips, (Cav.) QMC, a veteran of forty-five years of military experience, and the recognized originator of indirect machine gun fire as well as the organizer of the first machine gun troop in the American cavalry.

Upon Colonel Phillips' return from France in 1919 (where he was Chief of the Ordnance Small Arms Service on General Pershing's staff), the War Department placed on his shoulders the responsibility for the development of a pack saddle suitable for all branches of the Army. The Phillips Pack Saddle for cavalry gaits won out in competition with the pack equipment of all first-class military powers.

Colonel Phillips not only designed the pack saddle, but also designed the carriers and hangers which permit the saddle to meet the needs of all branches of the Army. There are two types of Phillips pack saddles—the Cavalry Pack Saddle, and the Cargo Pack Saddle adopted for pack artillery and pack trains.

Where motors cannot go, pack units can. This view shows Phillips Pack Saddles being assembled at the Jeffersonville QM Depot, ready for service on the world's battlefronts.



A trained pack horse with a cavalry machine gun troop takes a hurdle on maneuvers. Equipped with Phillips Pack Saddle, the horse transports the gun without difficulty.

*by Lieutenant Otto H. Frederickson*

THAT mechanized warfare has far from eclipsed the importance of animal transport can readily be seen when it is considered that two large plants are supplementing the Jeffersonville Quartermaster Depot in the manufacture of Phillips Pack Saddles alone.

Press reports of operations in China, New Guinea, as well as Tunisia and Sicily have "spotlighted" the usefulness of pack animals in supplying our troops and those of our allies with the sinews of war. In the jungles of the Southwest Pacific, and the mountainous terrain of Europe and Asia, pack artillery and pack trains have been pressed into service when the going became too tough for mechanized units.

No single activity stands out more vividly than the procurement and fabrication of saddlery and harness equipment in the long and colorful history of this depot, situated at the falls of the Ohio River, in Southern Indiana. Since its establishment seventy-nine years ago, it has been identified with the purchase, storage and issue of harness, horse drawn vehicles, hardware and kindred items.

The Spanish-American War witnessed the ever-widening use of harness and harness parts in warfare. Virtually all the equestrational equipment used by our cavalry and other arms and services in that war were procured or fabricated at Jeffersonville. Harness turned in by organizations mustered out of service at the close of that conflict was shipped to this depot for repair and





# Saddlery Center

Basically different from that of any of the world's pack saddles, the design of the Phillips Pack Saddle permits a quick and easy adjustment of the pads to fit the types of animals for which the saddles were created. As developed, the frame will carry rope-hitched cargo loads, top loads, or side hanger loads. The breeching is a unique feature, and even the method of cinching is different. As issued, the saddles will fit from 90 to 95 per cent of the animals without pad adjustments.

As Consultant on Saddlery and Harness at the Jeffersonville QM Depot, Colonel Phillips was keenly aware of the rôle to be played by pack equipment on the various battle fronts, by both American and Allied forces, particularly in the Pacific and Far East, and China where a lighter class of animal prevails.

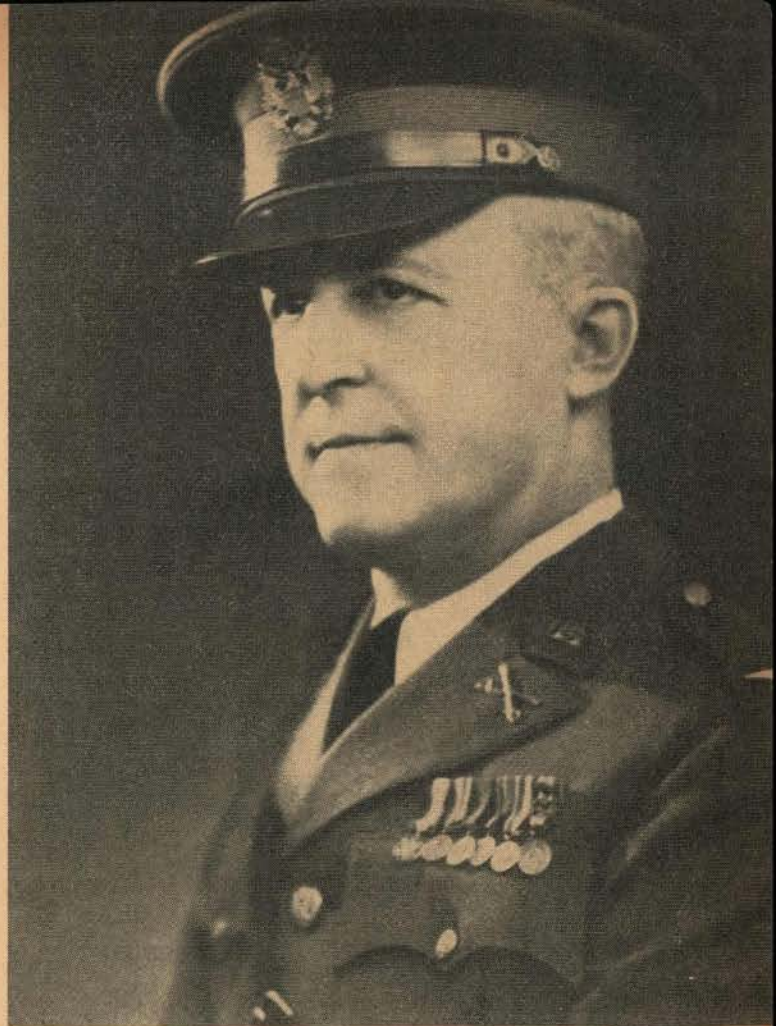
As a result of his research, there was announced in August of this year the design of a new Phillips Pack Saddle, Cargo, Modified, which was specifically designed for the light type horse and mule weighing approximately 900 pounds. At present the Jeffersonville depot is the only plant tooled to manufacture the new saddle.

For China, Colonel Phillips designed a modified form of the Cavalry Pack Saddle for packing American 75mm howitzers on the Mongolian 800-pound ponies. Thousands of these saddles are now in China.

The Phillips Military Officers Saddle, the first forward seat saddle in America, is the pride of the trained rider. The 1941 model is the fully developed saddle.

Of the seventy-four classes of supplies listed in the Quartermaster Supplement to the Federal Standard Stock Catalogue, the Jeffersonville Quartermaster Depot is charged with the procurement and/or manufacture of eleven. Tentage and manufactured canvas articles comprise the largest purchase. Other supplies include the following: mess furniture, field safes and

Design of Phillips Pack Saddles is basically different. Pads may be adjusted quickly and easily to fit the types of animals for which designed. This scene shows craftsmen in the Harness and Saddlery Shops at JQMD stuffing the pads.



Colonel Albert E. Phillips, who has been stationed at the Jeffersonville Quartermaster Depot as Executive Officer since January 30, 1941, in an appropriate ceremony given in his honor September 26, 1943, was presented the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding service in connection with development, procurement and administrative activities." A cavalry officer of the Regular Army, Colonel Phillips has forty-five years service, spent partly with the infantry and ordnance. For the past seventeen years he has served with the Quartermaster Corps, where his time has been devoted largely to developing Army equipment—numbering hundreds of items of military importance. He retires from active duty in January.

camp tables; lighting apparatus; harness, saddlery, pack equipment and various leather items; hand-tools except for motor transport; tableware; bake-shop apparatus and kitchen equipment, including "Outfit, Cooking, Cavalry Pack"; field ranges and bake ovens; hand and animal drawn vehicles; agricultural implements; individual equipment, such as canteen covers, shelter-half tents, canteens, meat cans, canteen cups, haversacks, cartridge belts, etc. Altogether, the depot stores over 27,000 articles and procures or fabricates 500 more.

Each of our nation's conflicts has witnessed intense activity at Jeffersonville. The requirements of the present war dwarf by comparison any of the previous demands placed upon this quartermaster depot. Today it is charged with the fourfold functions of procurement, manufacture, research and development, and the general storage and issue of supplies to America's armed forces.

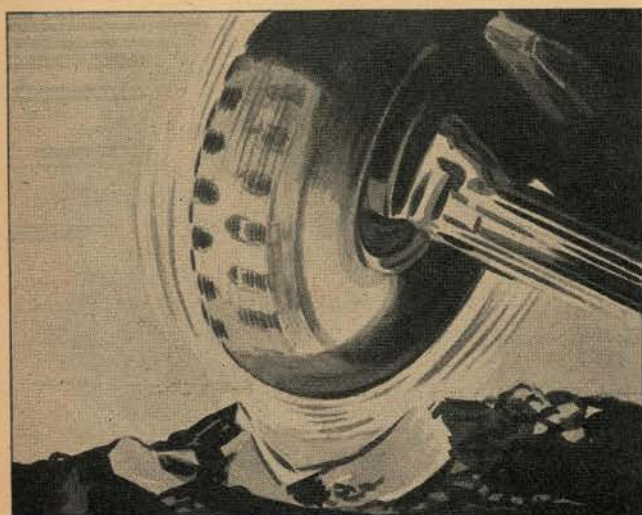


# DO'S *and* DONT'S ON Tire Care

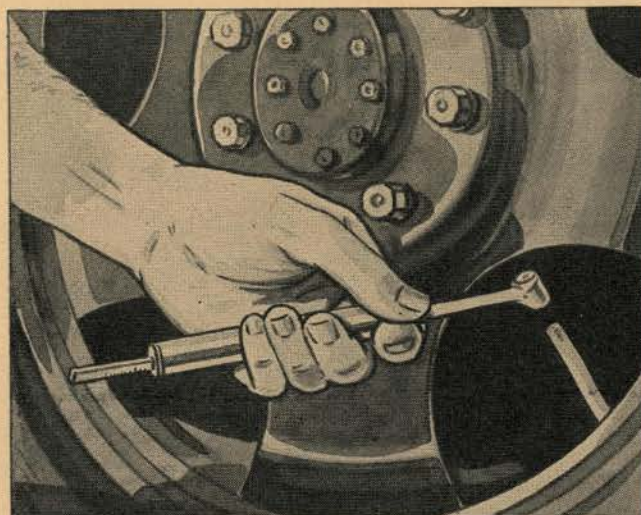
Tires now rank higher than ever among critical items. Army trucks in the U. S. must depend mainly on recaps in 1944. New tires must be saved for combat zones. These tire tips, from TM 31-200, are vital. Have you read *your* copy lately?



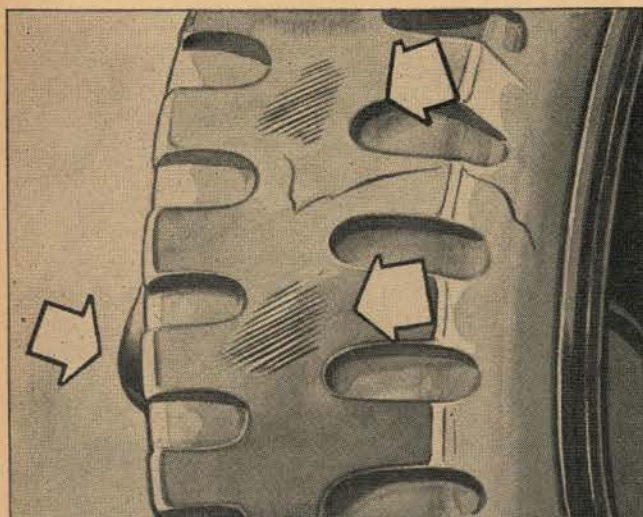
"Avoid "jackrabbit" starts and jamming on brakes. These practices tear rubber like a grindstone.



Avoid stones, ruts, holes and curbs. Obstructions damage a tire's cord body, causing tire failure.



Check tire pressures daily. Pressures too high or too low will ruin casings—make them unfit for recaps.



This tire, blistered, worn through to the cord, is unfit for recapping. Inspect tires! Recap in time!

MILES PER HR.	PERCENT OF NORMAL WEAR
35	
40	86%
45	72%
50	61%
55	51%



Watch your speed, particularly on turns. The rate of wear mounts when you pass army speed—35 miles per hour.



# Book Reviews

**TOTAL PEACE.** By Ely Culbertson. Doubleday, Doran & Co. \$2.50.

A year ago Mr. Culbertson published his *Summary of the World Federation Plan*. This book was the fruit of many years of study and experience. Six universities and three revolutions contributed their share toward his understanding of mass psychology and power politics.

The author describes his second book as follows: "*Total Peace* is more than a mere elaboration and improvement of the *Summary of the World Federation Plan*. . . . Although a modern plan for collective defense and an international police force is the main purpose of this book, many chapters present new principles of United States foreign policy and are designed to help an intelligent reader find his way in the complex mechanisms of power relations among nations."

The same balanced, shrewdly analytical mind that produced the forcing system of contract bridge is evidenced in every chapter of this fascinating book. It is particularly interesting to note that many of the same principles that apply to contract are equally true when applied to power relations in the world.

✧ ✧ ✧  
**WORLD WAR II.** By Frank Monaghan. J. G. Ferguson & Associates. \$7.50 Deluxe Edition; \$5.00 Regular Edition.

The author of this book is now a major in the Army of the United States. He was formerly assistant professor of history and fellow of Calhoun College, Yale University. He commences his book where any authoritative history of the present war must begin, at the Treaty of Versailles. He covers in detail the incidents, great and small, that have aggregated to produce the present conflict. From this point the events of the war are chronicled through 1942.

It is freely admitted that there is much that cannot be told at this time, but Major Monaghan maintains that these omissions are superficial, and that fundamental facts remain the same.

Plans are in progress to write the second volume when events have completed it.

✧ ✧ ✧  
**THE GROWTH OF THE RED ARMY.** By D. Fedotoff White. Princeton University Press. \$3.75.

Mr. White has an enviable reputation for remarkable fairness among both Reds and Whites. He has utilized his objective attitude to excellent advantage in this history of the organizational growth of the armed forces of the Soviets.

This is not a tactical study, and it does not deal with exploits. Rather, it is an effort to approach the Red Army as a striking social phenomena of the times, peculiarly indicative of the trends of the nation itself. For the present this book stands alone as the only study of its kind.

**THE NAVY AT WAR.** William Morrow and Company. \$4.00.

*The Navy At War* is a book of paintings and drawings, not only of the navy, but of the army as well, by Lt. Commander Griffith Baily Coale, Lt. Dwight C. Shepler, Lt. Mitchell Jamieson, Lt. William F. Draper and Lt. Albert K. Murray. Of this project, Admiral Hepburn said: "These men have not done their painting in ivory towers, nor have they used the war as a test tube for new theories of art and expression. They have risked their lives, as have the men behind the guns, in order to give, in a simple graphic medium, a better appreciation and a more complete insight into what is being done by our fighting men on the world's far-flung battlefronts."

Lt. Jamieson has done excellent work in the North African Theater. His work, even as a student at Corcoran, showed marked ability, and his maturity in both color and composition is most interesting.

Lt. Draper's paintings and drawings on the Aleutians exhibit a markedly different technique, more dependent on color than line for its power.

Lt. Shepler is definitely at his best in portraiture.

Commander Coale's work is primarily an example of what happens to a potentially good artist when he confines himself to drafting for too long.

✧ ✧ ✧  
**EMPIRE.** By Louis Fischer. Duell, Sloan & Pearce. \$1.00.

A powerful book, founded on facts, giving figures and authorities, and compiled with logical exactitude of thought, always warrants serious attention.

Mr. Fischer, in this small volume, deals with the problem that he feels is the greatest deterrent to the successful avoidance of a third World War—the practice of empire building and maintenance.

He turns to history to show that no mother country has ever considered its colonies able to rule themselves. Yet when free to solve their problems, the colonies have frequently not only smoothed out past difficulties, but have been of increasing instead of static value to the world. Mr. Fischer points out that the conditions prevailing in a subjected Asia are a detriment to the world at large.

*Empire* may never go beyond the shelves of the libraries of advanced thinkers, but in years to come the truths propounded in it must inevitably come into their own.

✧ ✧ ✧  
**CONDITION RED.** By Commander Frederick J. Bell, U.S.N. Longmans Green & Co. \$3.00.

*Condition Red* takes its title from the signal of impending attack in the South Pacific. While it is essentially the story of the ship commanded by the author, the narrative gives a general picture of destroyer action in battle, in convoy, and on patrol.







**BLITZ GERMAN.** By Dr. Rudolf Brandl. Military Service Publishing Co. \$.75.

A companion to *Blitz French* and *How to Say It In Spanish*, this book meets the growing demand for a superficial knowledge of German. These books do not attempt to teach a thorough knowledge of the language. They endeavor to supply a good workable vocabulary of words and phrases essential to a person entering the country. Even those who have a slight knowledge of German should find this pocket-size guide, with its English-German, German-English listing, a great convenience.

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**A SOLDIER'S CHRISTMAS READER.** Edited by George Macy. Heritage Press. \$.95.

It is most unfortunate that this book, and its companion, *A Sailor's Christmas Reader* did not reach the booksellers until the mailing date for service men abroad had passed.

The book contains 9 full length books, 12 short stories, 15 essays and over 250 poems. As in all anthologies, many features are hackneyed to the avid reader, but all of the inclusions are interesting examples, sufficiently varied in type to supply a general appeal.

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**A BASIC MANUAL OF MILITARY SMALL ARMS.** By W. H. B. Smith. Military Service Publishing Co. \$2.00.

Military men, collectors, manufacturers and designers will be equally interested in this manual. It covers arms from Austria, Belgium, Great Britain, Denmark, Finland, France, Germany, Hungary, Italy, Japan, Mexico, Soviet Union, Spain and the United States. The drawings are excellent, and the photographs are not only deliberately posed to show how to handle and care for the weapons, but also to show the parts from so many angles that they may be identified easily during dismounting and reassembling.

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**TALES OF THE PIONEERS.** By W. A. Chalfant. Stanford University Press. \$3.00.

Whether your ancestors were pioneers or not you will be interested and certainly amused by Mr. Chalfant's collection of stories of the California-Nevada border—stories he has heard recounted, or has seen occur in his fifty-five years as editor of *The Inyo Register*. "Law As It Was Administered" should certainly be included in any anthology of American short stories.

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**THE ARMY READER.** Edited by Lt. Colonel Karl Detzer. Bobbs-Merrill Co. \$4.00.

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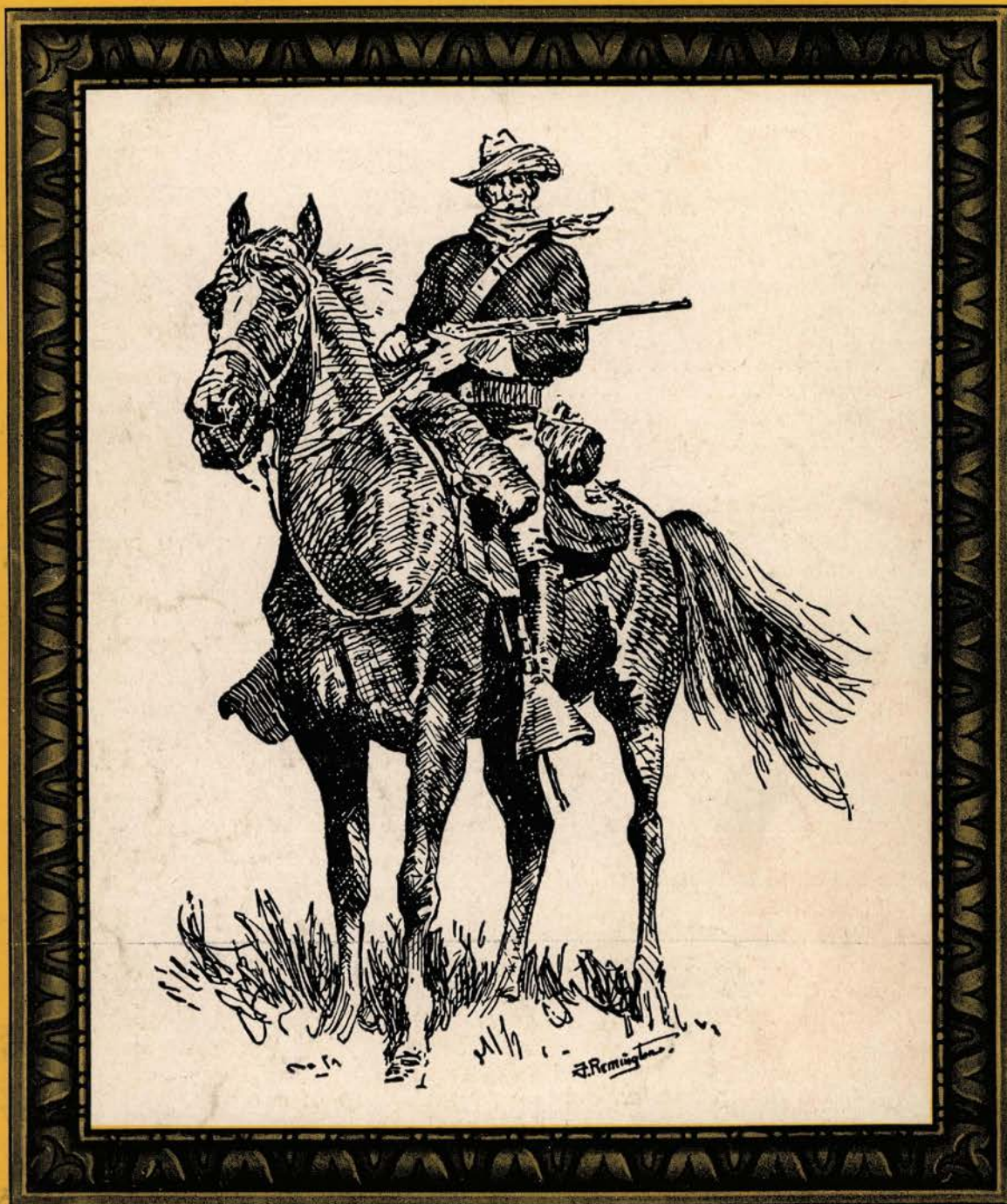
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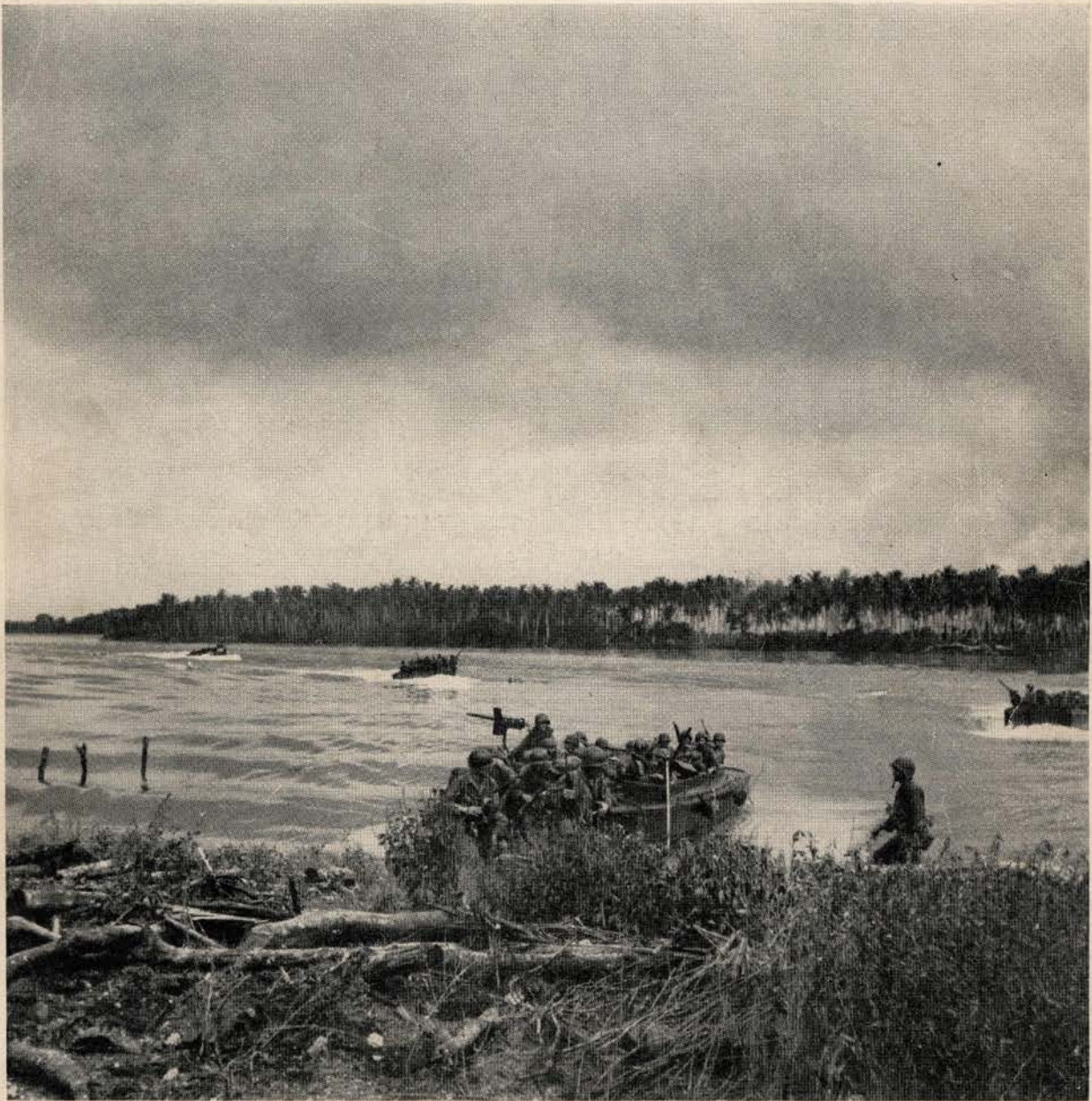
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# Red Army's Use of M

## Cavalry As Offensive Arm\*

by Colonel P. Kolomeitsev

REPORTS of the participation of large forces of cavalry in the offensive operations of the Red Army are being received more and more frequently from the front. Cavalry formations are pursuing the retreating enemy, giving battle to counterattacking tanks, helping to breach the enemy's defenses and capturing bridgeheads across strongly defended rivers.

There is hardly a form of warfare in which the Soviet cavalry is not taking part at the present time. Its technical equipment has reached such heights that even massed action by aircraft and tanks is powerless to prevent it carrying out its operational assignments.

### CAVALRY AND TANKS

Experience has shown the particular effectiveness of coördinated action by cavalry and tanks. Last year, for

---

**The cavalry and tank combination is a potent trump in the Red Army's modern mobile action. Colonel Kolomeitsev, well-known tank officer of the Red Army says, "The principle of Soviet tactics in the employment of cavalry is not to be influenced by the respective merits of horse and motor but by their aggregate merits."**

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example, cavalry corps helped motorized and tank units to encircle the German grouping at Stalingrad. After this grouping had been liquidated, the mounted units

struck in a western direction and played a major part in routing the forces sent to the relief of the German Sixth Army.

The operations of the Soviet cavalry have proved just as effective in the current offensive of the Red Army, particularly in the south. It is well known that a deep outflanking movement carried out by a combined cavalry and tank group was decisive in smashing the German defenses along the Mius River, which was followed by the rout of the enemy's Taganrog grouping.

### CAVALRY ATTACKED BY AIR

When the Germans discovered that Soviet horsemen were operating in their rear, they threw large forces of aircraft to smash them. In the course of one day alone nearly 1,500 sorties were made by the Luftwaffe. Although suffering certain losses, the cavalry proved that it was no more vulnerable to air attack than infantry or any other ground force.

True, it is easier for infantrymen to adapt themselves quickly to the terrain and take shelter from bomb splinters. On the other hand, however, the cavalry is more mobile, which enables it to maneuver to evade air attacks, rapidly break formation and move through sheltered localities. Moreover, *Soviet cavalry units are equipped with powerful antiaircraft guns*, so that enemy raiders are forced to keep at a respectful altitude and drop their bombs without proper aim.

The large forces of Soviet cavalry operating west of Taganrog were also supported by fighter and bomber aircraft. The fighters fought off bomber attacks, while the bombers pounded away at ground objects in the path of the horsemen. This close coördination between the cavalry and aircraft was maintained throughout the raid.

### CAVALRY ATTACKED BY TANKS

The Germans also threw large forces of tanks against the cavalry. Here, too, however, the horsemen showed that they were no lamb before a wolf. The panzers encountered heavy fire from powerful artillery, organically part of the cavalry units, as well as other antitank weapons from grenades to cannon of various calibers.

The battles with the German tanks were exceedingly bitter. Yet the enemy was unable to halt the Soviet cavalry, for its protection against tanks has grown tremendously since the beginning of the war.

Of course, it would be a grave mistake to underestimate the danger of an armored enemy, but I repeat that this danger is in no way any greater for the cavalry than for any other arm.

\*Moscow News.



# Mobile Forces



A Soviet cavalry charge. So successful have been Soviet cavalry tactics that Germany has been forced to reconstitute its own cavalry—but good cavalry cannot be created overnight.

## HORSE AND MOTOR

Although the most valuable quality of the cavalry is its extreme mobility, that of the mechanized forces exceeds it. How effective then is close coördination of the horse and the motor, which is widely practised in the Red Army? The principle of Soviet tactics in the employment of cavalry is not to be influenced by the respective merits of horse and motor but by their aggregate merits.

It is not difficult to imagine the force represented by a cavalry and tank group raiding deep behind the Germans' lines. The tanks, moving on the flanks and in the vanguard of the cavalry, break down the enemy's resistance. When the defenses are very strong, the cavalymen dismount and, supported by their artillery, attack like infantry with the tanks. Then, mounting again, they regain their mobility and set off together with the tanks in hot pursuit of the retreating enemy.

## FORCING RIVERS

In the course of the present offensive operations of the Red Army, the basic quality of the cavalry—its ability to carry out swift maneuvers in all directions and in any terrain passable to man and beast—has been used with great effect in forcing rivers. Suffice it to recall the exploits of the cavalry corps commanded by Major General Kryukov, which, breaking through the enemy's lines, captured a bridgehead on the western bank of the Desna River and held it until the arrival of infantry despite four days of desperate counterattacks by German tanks and motorized infantry, supported by large forces of aircraft.

Many more examples could be cited to show the great force that the Soviet cavalry has become in the course of the present war. This old and tried arm has proved its power even in the epoch of a war of motors.

## Tank-Cavalry Tactics\*

by Colonel V. Tereshchenko

IN tanks, cavalry has acquired a steel shield with which it can cover itself during battle and become a powerful battering ram for breaking and destroying the enemy's combat formations.

For the employment of tanks with cavalry, the Red Army has worked out a number of tactical rules. The most important of these are:

1. Mass utilization of fighting machines.
2. Close and clearcut coördination and mutual relief.
3. Support of the tank-cavalry attack by all artillery resources available.

An example of the close and clear-cut coördination between these two arms was displayed in action in the southern sector in 1943. Cavalry was assigned the following task: Working in close coördination with tanks, it was to get into the enemy's rear and cut off his line of retreat to the west. Preparations for this operation started with a clear-cut plan of combat assignments to both cavalymen and tankmen. The situation required that the right flank and rear of the cavalry should be covered and secured by action of the tanks, inasmuch as the cavalry, after entering into the breach, would descend to the south and inflict its blows in a southeastern direction.

The commanders of both cavalry and tank units found the right solution to this problem. At the moment when the breach was entered, the tanks inflicted

\*By cable to The CAVALRY JOURNAL from War Department, U.S.S.R., Moscow.





Sovfoto

Massed utilization of fighting machines is one of the fundamental principles of Soviet mobile tactics.

their blow strictly in the northwestern direction and thereby widened the breach for the cavalry to pour into the enemy's rear and draw his reserves upon itself. In the progress of this struggle, the cavalry, by its bold offensive action threw itself forward and after crumbling the enemy's defense, wedged into his rear and cut his lines of communication.

The enemy tried to stop the Soviet cavalry by drawing his reserves to the districts which the cavalry had penetrated, but his design proved abortive. The tank units, after making a blow in the northern direction and forcing a passage for the cavalry in the districts indicated, broke away from the enemy and, going into his rear, followed the cavalry to the right.

This movement of tanks safeguarded the right (western) flank of the cavalry against possible attacks by the enemy's distant reserves. The outcome was the inevitable result of two arms of the service effecting a raid in precise coordination. When the German reserves came up to the right flank, the Soviet cavalry and tanks, by a sudden attack, inflicted losses on them. Subsequently, the German units were surrounded and smashed.

---

"In Russia I talked to many Russian cavalry officers. Their idea of a perfect cavalryman was the American civil war fighter, General J. E. B. Stuart. They know of his raid around McClellan's army in 1862 and of his raid into Pennsylvania later in the year. They have studied his methods. When you talk to them of modern cavalry in other armies, with its motorized artillery and hundreds of trucks, they will tell you to study Stuart.

—*The Russian Army*, by Walter Kerr.

---

Another example, showing the application of all three tactical principles, is represented in the following action:

The retreating enemy clutched at an advantageous line which he hastily adapted to his defense against advancing Soviet units of cavalry and tanks. The main base of this defense was a large village where the Germans concentrated a great number of their forces.

A frontal attack on this position was inadvisable. It would have involved heavy sacrifices and might have protracted the battle for a long time. It was decided, therefore, to tie up the enemy from the front by the actions of one dismounted squadron, while two-thirds of the cavalry forces, also dismounted, were directed to outflank the Germans in the village.

The path of the flanking group was intersected by a marshy brook, so sappers were provided to fix a crossing for it. Reserves, ready to act with the cavalry formation, were placed in the nearest grove. Also concentrated in the grove were tanks, which would rush forward as soon as the dismounted cavalry crossed the brook. Then, overtaking the cavalry, the tanks would proceed to flank the village.

Up to the time that the brook was crossed and the cavalrymen emerged beyond it, the battle developed exactly according to plan. At that point, however, a change occurred in the order of combat for flanking the village. From behind the height west of the brook, the enemy threw in reserves—a small group of tanks with several self-propelled guns and about two companies of infantry.

The commander of the cavalry unit decided first



to smash the enemy's reserves and then to attack the village. For this action, all of the antitank fire and all of the rest of the artillery was directed at the German tanks and self-propelled guns, while machine gun and minethrower fire was thrown on the enemy infantry. The tanks and cavalry were sent back into the bushes and ordered to do nothing that might make their presence known, but to be ready to open fire should the enemy succeed in approaching within a distance of three or four hundred meters.

The fight with the reserves did not last long. The enemy tank group, having fallen into the zone of artillery fire, lost three tanks and one self-propelled gun, whereupon it took to its heels. After the retreat of the enemy's fighting machines, the cavalry directed its fire against the German infantry, which was unable to stand and so turned back. The Germans in the village also attempted to retreat in the direction of their reserves.

The moment to decide the issue of the battle had arrived. It was necessary to act swiftly and resolutely. The commander of the cavalry unit called out the men in charge of the horses and hidden reserves, and ordered the commander of the tank unit to attack the village jointly with the cavalry. As soon as the horses were brought up, the cavalry mounted and took the offensive. The tanks, keeping within a distance of from three to four hundred meters, skilfully crushed the enemy's gun emplacement on the outskirts of the village, and in this way, facilitated the rout of the enemy. After a short struggle, the Germans surrendered.

Losses among the Soviet cavalrymen were quite insignificant, as the battle was fought at a very fast pace and in a manner entirely unexpected by the enemy.

## Battle for a Railroad Junction\*

*by Captain G. Ponomarev,  
Red Army*

**B**YELORUSSIA is a country of bogs and forests. A greater part, situated on the upper reaches of the Dnieper, Pripet, and Berezina Rivers, is called Polesye, which in Russian and Byelorussian means "region of woods." The chief characteristic feature of this section is the small number of lines of communication and road junctions.

The Germans tried to stem the Soviet advance into Byelorussia by building strong points of resistance on the most threatening sectors, because the force which occupied the key positions on roads and heights would be able to put up formidable resistance without erecting long complicated lines of defense.

When Soviet troops forced a crossing of the Dnieper and captured Retchitsa by means of an enveloping movement, the theater of operations in the region of Mozyr and Kalinkovichi became particularly important to the Germans, who had concentrated dumps and distribution points of their Second and Ninth Armies at the big railway junction of Kalinkovichi. When developing the initial success, Soviet troops moved up the Berezina River, cut the Zlobin-Kalinkovichi rail-

\*By cable to THE CAVALRY JOURNAL from War Department, U.S.S.R., Moscow.



The Red Army's use of cavalry for flanking attack has been of prime importance in accomplishing wide encirclements of the enemy. Above column is on the march, September, 1943.

Sovfoto

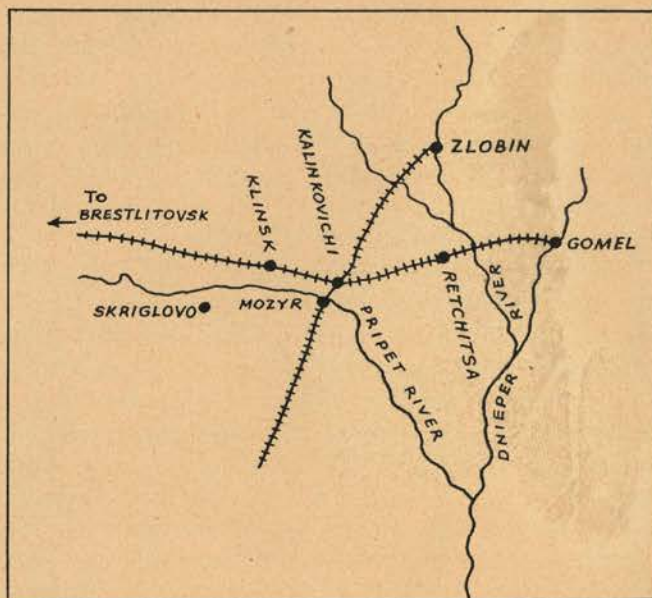


roads and created a threat to this junction from the north.

In December, the enemy made attempts to regain the lost ground and restore the original situation. They employed considerable forces in an attempt to recapture the railroad, but all their efforts to consolidate their positions on this sector proved of no avail and, after losing 250 tanks, they discontinued their assaults and took up positions for defense. How vital the Mozyr-Kalinkovichi terrain was to the Germans is indicated from the fact that they had been erecting defenses in that sector for some time past, and had massed there five tank and four infantry divisions, not counting numerous SS battalions.

The Soviet command adopted the following plan of operations:

At a good distance south of the sector where the Germans expected the attacks, Soviet scouts discovered a comparatively weak spot in the enemy's defense. After



Sovfoto

On a hill hidden behind the dense woods is the enemy's line of fortifications. Soviet infantry have approached their objective unseen, and at the moment when the final assault is to be made, bombers put up a smoke screen for the attacking ground troops.

accounting for outposts, the Soviet cavalry began to concentrate. By traveling across forest paths in pitch darkness, small parties of horsemen infiltrated into the rear of the enemy and massed secretly at an appointed place. The enemy did not expect the Soviet attack at that point, and soldiers of the garrison and a small police force were exterminated before they could put up any resistance. The main force of cavalry emerged from Mozyr and cut a number of highways leading south and southwest.

On the bank of the Pripyet River, the cavalry moved in two directions. One party turned westward along the bank of the river; the other attacked Mozyr.

On the night of January 11th, a strong party of mounted scouts rushed the village of Skriglovo and

engaged a battalion of Germans posted there. Sleepy and in their underwear, the Germans ran out of the cottages and attempted to flee, but were chopped up by the cavalymen. Very few succeeded in escaping across the thin ice of the river to seek shelter in the woods.

On the morning of the 11th, one group of cavalymen was already waging battles on the approaches to Mozyr, where the Germans occupied positions for all-round defense. This group of horsemen, attacking dismounted, captured a number of populated localities west of Mozyr. As soon as the cavalry commenced fighting in earnest on the western approaches to Mozyr, other Russian units launched a concentrated attack from the north and east and pierced enemy defenses.

Meanwhile, the main blow was being delivered on the railway line from Zhlobin to Kalinkovichi. This

Tanks, closely supported by infantry make a frontal attack while cavalry cuts into the enemy's rear and severs lines of communication.



SIB Photo





SIB Photo

The enemy's resistance cannot always be smashed by a cavalry charge, but cavalry are trained to fight dismounted and to use various kinds of weapons.

operation was by tanks, artillery, and air force working in close coöperation. Artillerymen accompanied the tank commanders in their machines, and if obstacles stood in the paths of the tanks, the observers immediately reported the target and corrected the artillery fire. Representatives from the air force followed with the infantry and directed Stormoviks and bombers to targets. Despite bad weather, Soviet pilots attacked from low altitude.

Abandoning their arms and ammunition, the dazed enemy began a hasty retreat. They put up very stiff resistance on the left flank in the hope of withdrawing remnants of their troops from the right flank to beyond the Ipa River, where, under cover of the swampy banks, they might be able to stem the advance and regroup. But Soviet tanks and infantry units, attacking incessantly, fought their way forward for fifteen kilometers, and by the end of the day had knocked out 21 tanks and killed 2,000 Germans. The enemy hoped for some respite during the night, but the harassing attacks continued.

On the morning of January 12th, the Germans again counterattacked with a battalion of self-propelled guns and from 15 to 20 tanks. One of their infantry battalions found itself pressed into the swamps by a Soviet tank unit and infantry which had been hurried to the scene. The Germans went into a counterattack three times in an attempt to break through the ring. German Tommy gunners attacked furiously under cover of 15 tanks and shell fire, but Russian tanks crushed them with their tracks, and Soviet infantry mowed them down with rifle fire. After a desperate battle, the battalion was practically annihilated. Four hundred Germans were killed;



With sabers drawn these cavalrymen descended on a surprised enemy and accomplished their mission.

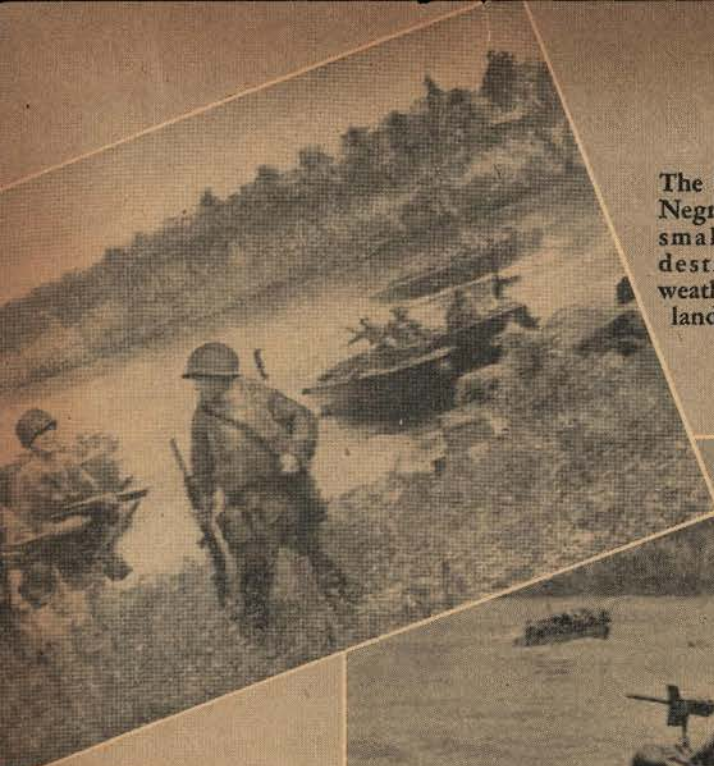
four ferdinands, five tanks and 50 lorries were destroyed.

On another sector, the Germans, abandoning 22 machine guns, many rifles and large supplies of ammunition, fled under cover of a smokescreen.

On January 13th, the fighting was even more desperate. Soviet cavalry continued battles for Mozyr; while infantry, operating from the east, fought their way through to the approaches of Kalinkovichi. Resisting stubbornly, the Germans attacked with as many as 18 and 20 tanks with supporting artillery and gunfire from an armored train.

Northwest of Kalinkovichi, Soviet units, advancing steadily, pressed the enemy toward the Kalinkovichi-Brest railroad and tightened the loop around the Mozyr and Kalinkovichi theaters. Finally, on January 14th, Soviet troops stormed the enemy positions from the railway junction at Kalinkovichi and captured the town of Mozyr.





The landing on Los Negros was made by small boats from destroyers. Rainy weather shielded the landing operations.



Members of the first wave of the invasion force composed of elements of the 1st Cavalry Division approach the shore on Los Negros Island.

Members of the 1st Cavalry Division invasion force dig in after landing at Momote Bay, Manus Island.

Official U. S. Signal Corps Photos

# Jungle Operations

AS a result of the first staggering series of Japanese victories in the Far East, there appeared a vast amount of literature designed to explain the revolutionary tactical doctrines employed by the Jap. To a great extent, the information was both spectacular and ill advised, in that it built up in the minds of those entrusted with the training of our troops the legend of the Jap super-soldier.

After this phenomenal build-up, history was largely forgotten and the immutability of the proven principles of war was momentarily scrapped in an effort to devise the means of out-Japping the Jap. Innumerable SOPs were designed to suit every jungle situation, and it was not until we were brought back to earth by the performances of the Marines on Guadalcanal and of army troops in the Papuan Campaign, that training once more assumed a realistic attitude. Then and then alone was it realized that the mysteries of jungle operations were an open book to one whose basic tactical training was sound, and that the teachings of the service schools, when applied with due consideration for terrain, climate and logistics, still applied.

Another factor, which has resulted in a change of attitude, came as a result of the initiative passing over to forces of the United Nations. Air and naval superiority combined to make the Allies the aggressors—gave them the opportunity of carrying the fight to the enemy instead of conforming to his strategic aims. Today, with the Jap admittedly committed to the defensive along the far flung reaches of his perimeter, it is known that only by a properly supported and vigorous attack can the forces of the United Nations succeed in driving him out.

Combat experiences gained in the past year against some of the best forces of the Japanese Empire have resulted in realistic reports which both enlarge on enemy doctrines and correlate the problems of jungle combat with our own methods. This article simply reiterates certain items of importance to all those who will meet the Jap on his own ground.

*Pin-pointing the Enemy.* As soon as contact is gained, every effort must be made to locate with precision elements of the enemy position. Small and aggressive



# Elements of the 1st Cavalry División (dismounted) Land On Manus and Los Negros Islands in Admiralty Group



Official U. S. Signal Corps Photos

An advanced patrol of the 1st Cavalry Division nears a Japanese machine gun position guarding Momote airstrip. Picture was made just five minutes before the strip fell into American hands.

*"We have landed in the Admiralty Islands, which stand at the northern entrance to the Bismarck Sea, almost due south of Guam and 1300 miles from the Philippines.*

*"Elements of the 1st Cavalry Division (dismounted) were put ashore from destroyers in the early forenoon, covered by naval and air bombardment.*

*"The enemy's surprise was complete.*

*"Momote airfield is in our hands and the enemy's resistance is being rapidly overcome." — Official communiqué, Allied Headquarters Southwest Pacific, March 1.*

by

*Lieutenant Colonel Roy W. Cole, Jr.\**

patrols, working around the enemy flanks and into his rear areas, coupled with close-in patrols feeling out the enemy front, will pin-point enemy installations. If it is desired to maintain standing patrols in the rear of the enemy position, they should be strong enough to be self-sufficient and able to meet the attack which will result from their discovery. As a general statement, the small patrol will give better information, since a large force is both difficult to move and to maintain when out of contact.

**Fire Power.** Once the enemy position has been pin-pointed, and the location of pill boxes, headquarters installations, and automatic weapons plotted, the attack must be prepared by every means available to the commander. Fire power is the key which opens the lock, and massing the fires of both organic and supporting weapons will be the rule rather than the exception. From recent experience in the European theater, it has been found that if the situation warrants, the entire division artillery may be concentrated in support of the attack of a single unit. Commanders of all echelons must be made to employ every means of fire power within their disposal, and to remember to include

the possibility of air support to further their preparation.

**The Assault.** After the position has been pin-pointed and the plan of supporting and preparatory fires agreed upon, the troops must begin their movement under cover of artillery and mortar fire. The truism that it is better to take 1% casualties from our own weapons than 10% from the enemy should never be forgotten. Under ideal conditions, troops can crawl to within a comparatively few yards of their artillery barrage without danger. As soon as the last rounds are on the way, the troops must be either on the enemy position or in the shell holes caused by their barrage before the enemy has a chance to recover from the shock of the preparation and man his weapons. This process should be repeated until the enemy works are gained. The success or failure of an attack will be determined by the manner in which subordinate leaders initiate the assault, and hesitation will inevitably result in avoidable casualties which can never be justified.

**An Island of Resistance.** Should isolated pill boxes hold up a part of the attack, reserves must be committed through the gaps made in the enemy position. Flame throwers, bazookas and AT grenades, supported by smoke, small arms and automatic weapons fire, will prove to be invaluable in reducing these pill boxes. If the bunker is not isolated, it is well to remember that the Jap usually organizes with one forward pill box supported by the fire of two in its rear. Hence, the other bunkers capable of firing at the operators must be cov-

\*Hq., 8th Cavalry.



ered as well. The caliber .50 machine gun has been found to be well suited as a supporting weapon.

*Continued Pressure.* Once the enemy is driven out of his position, he should be kept off balance by a continuous pushing that allows him no chance to get set. The Jap has been found to break under such continued pressure, because his small units tend to become confused when not specifically instructed as to what they should do.

*Digging In.* Defense should be organized as soon as the objective has been attained. This fact must be made an actuality in the shortest possible space of time. During this phase, if the enemy position cannot be made tenable and it is necessary to dig in, the men must dig in lying down. There have been too many casualties from snipers caused by men digging in while standing up, for even after the Japs have been expelled from a position, there will still be snipers waiting to take a crack at anything that moves. Although the marksmanship of the average Jap is generally poor, some of their snipers are excellent shots.

*Mopping Up.* When the enemy position is gained, special mop up detachments must clean out all trenches and dugouts overrun in the assault. Other troops must be given antisniper missions both in and after the assault, as the tree snipers will pick the leaders who are the main-springs of success. When the nature of the jungle permits, during the last stages of the fire preparation it is wise to have the machine guns spray the trees left standing on the enemy position, as an added protection against snipers.

It has been found that meal formations are favorite times for snipers to fire; also, that they are prone to engage small groups, say three or four men walking along a track, but will pass up any larger group in the belief that it is too dangerous.

*Countersniping.* In countersniper operations, it has been determined that only predesignated men should do the firing. When in bivouac, the three-man team of sniper-observer-sniper should be used. These men should be emplaced on the extremities of the area. Other groups should be used in trees to supplement the ground posts. These groups will systematically return all sniper fire by engaging likely looking trees and positions in the general direction from which the fire originated.

Another successful method of combating snipers, especially in a mobile situation, has been to send out a three-man patrol under cover of an harassing fire to work into position close to the enemy sniper.

*Enemy Counterattack.* If there is one principle of tactical training which has been substantiated in every battle, it has been the Japs' unvarying practice of counterattacking after having been driven from a position. Such attacks will usually come as soon as the Jap can reorganize, and more often than not will take the form of isolated attacks launched as the leaders work their men up to it. The coordinated attack is rare in circumstances.

*Jap Methods.* Prior to the Jap attack, a diversion in the form of firing and noises of various kinds can be expected, but the attack itself will come from another direction. During the hours of darkness, the crawling attack is generally made, although the probability of the headlong rush should not be discounted. On New Britain, the Jap has made no attacks whatever during the day, so it appears that he believes that his best defense against our firepower is still the night attack.

*The Jap Night Attack.* Under no circumstances should automatic weapons be used to fire at enemy noises, as the Jap is endeavoring to locate our automatic weapons.

Regarding Jap night assaults, the decision must be made by the front line commander in the threatened sector as to whether or not the Jap is launching a general attack. Once the decision to fire is made, everything must be poured on at once, both for the shock action that such a volume of fire will bring and also for preventing the discovery of isolated weapons.

*Infiltrations.* In close fighting against infiltrating Japs, troops often wait for them by lying in their holes and, in order to shield the muzzle blast of their weapons, fire up from their positions as a Jap comes into view over them. This is an example of the extremes to which our troops go to prevent their positions from being discovered.

*In the Enemy Rear.* In contrast to the first stages of the war, the Jap is very nervous when anyone is operating in his rear areas. In fact, he is more worried about it than we are, as we are better prepared for it mentally. Apparently, the discipline of the Jap behind his lines, both in lights and talking, is poor, and to date it has been an easy job to ambush Japs without loss to ourselves.

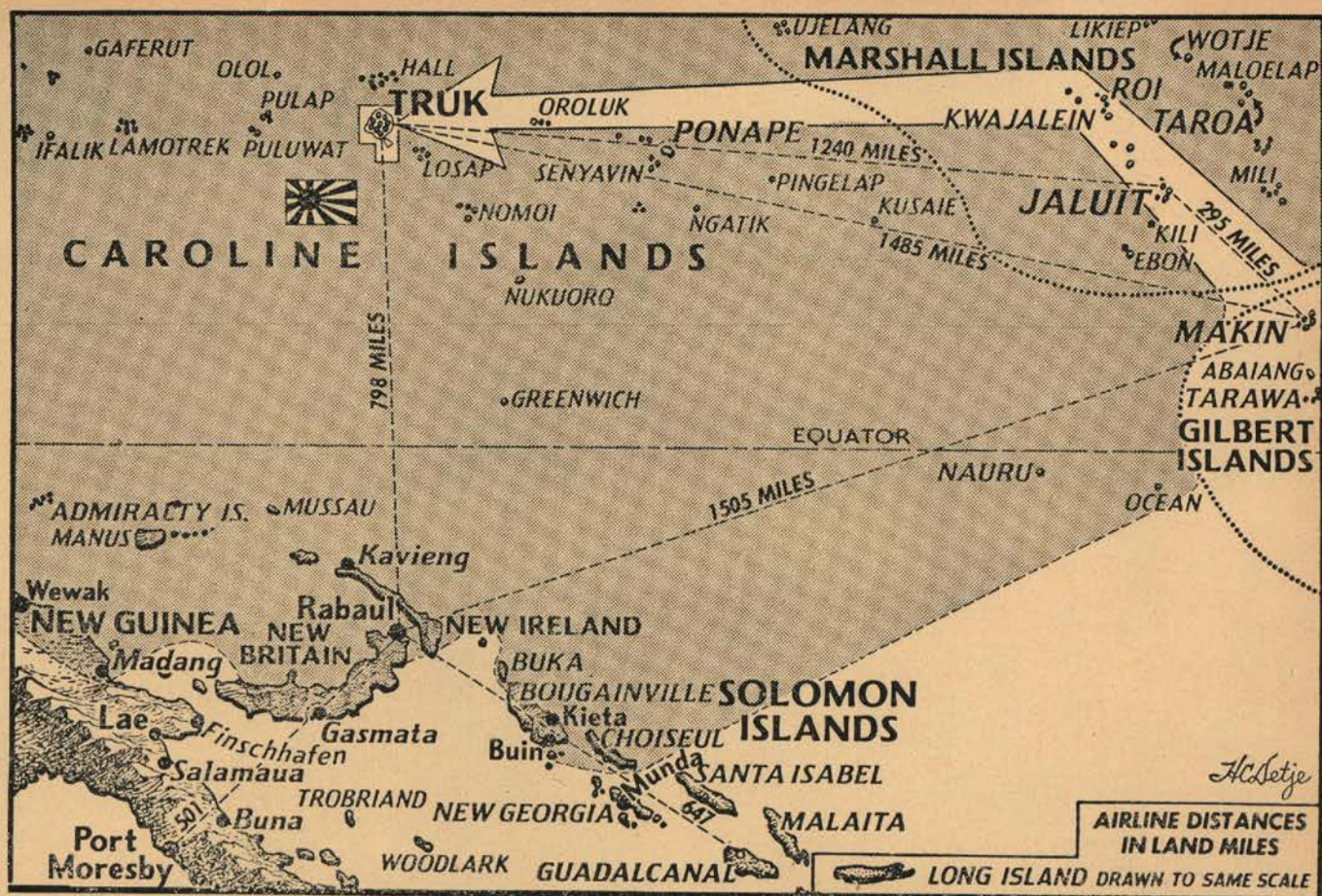
*Foxholes.* Troops in Africa reported early in their campaign that the slit trench as such was worthless. The deep foxhole gives the man far more protection especially from shelling or bombing attack, and is an almost perfect protection from strafing. Troops have suffered needless casualties because they failed to put some kind of roof over their shelter.

*Frontal Attack.* Regardless of the principles of fire and movement, the small unit must be trained in the frontal attack. In the final stages, the ultimate assault will be to the front.

*Leadership.* During the attack, the subordinate leader must decide whether to lead or to urge his men. The determining factor will be the attitude of the troops themselves. Fresh, confident troops should be led by their officers, for the desires and inspiration of a leader will be impressed on them better by example than by any other means. The psychological reaction of the good soldier will be to try to surpass his fellows, and if the impulse is given him, he will drive the attack home.

*Supply.* It has been found that while the majority of junior officers become excellent combat leaders, their assumption of responsibilities of supply leaves much to





Landings by elements of the 1st Cavalry Division in the Admiralty Islands, outflanked important enemy bases on New Ireland and New Britain. Los Negros Island, scene of the landings, is just east of Manus, principal one of the approximately 40 islands in the group which were mandated to the British by the Versailles Treaty. They had been a German protectorate.

be desired. Subordinate officers should be instructed that supply is a command responsibility which cannot be delegated.

**Jungle Training.** With observation in jungle terrain as difficult as it is, observers must be given special training in the use of tree climbing and in the use of the rope tied between their feet for climbing coconut palms.

The use of smoke for initial bursts is one of the best methods for spotting.

Machine gunners should be trained to use the caliber .50's to cut through the jungle, and once a lane has been made, to emplace a .30 caliber instead.

In instances already reported, our troops are far faster on the trigger than the Jap is. While the Jap takes some seconds to react, the American soldier can get off two or three shots before the Jap even gets into action. Our better rifles are of inestimable value in this sort of fighting.

**Special Instructions.** When time permits, a defensive perimeter should be surrounded by booby traps.

In all actions in the South Pacific, the use of the grenade is universal. Our troops have been carrying up to half a dozen in the mess kit holder in their pack or in an extra canteen cover.

When the impact area of mortar fire is soft dirt, the light shell detonates better than the heavy. Because of the close proximity between units, the bracketing sys-

tem of adjustment is usually not possible. The creeping method is the generally accepted manner of getting the fire on the target.

If possible, fire support should be perpendicular to the direction of attack; there is less lateral dispersion.

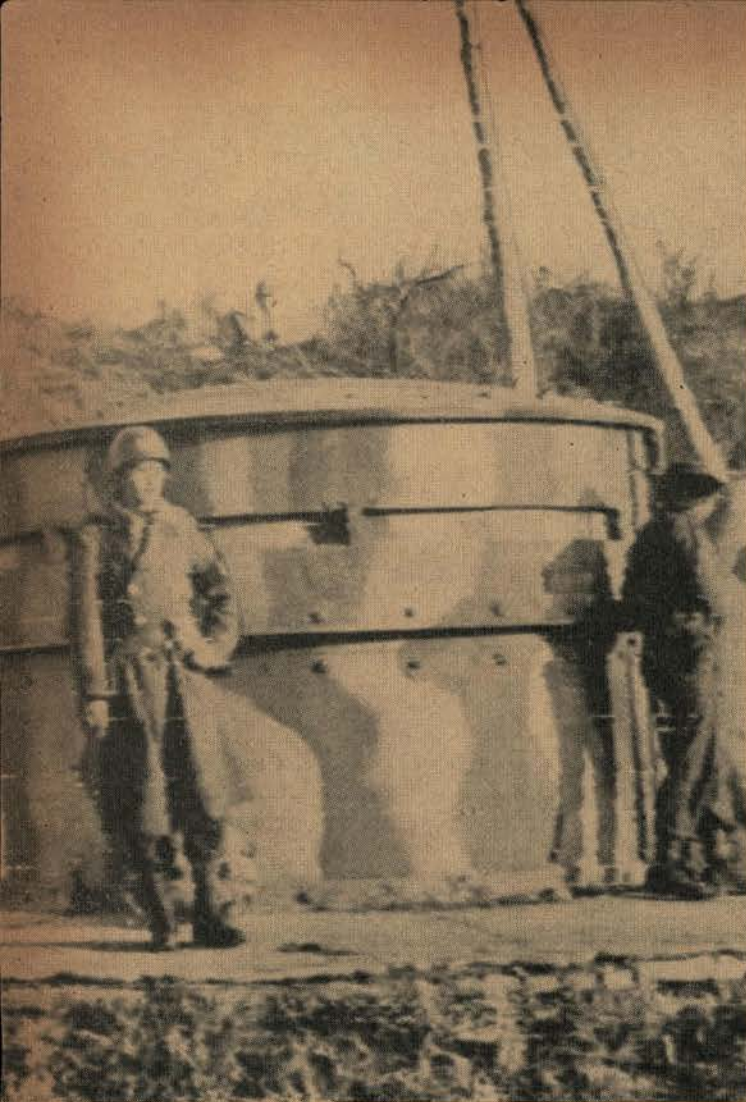
In heavy kunai grass, it has been determined that the approximate penetration of the several weapons are as follows: caliber .30 MG—30 yards; caliber .50 MG—50 yards; 37mm gun (using canister)—40 yards.

The three-man foxhole, with about ten yards between holes is the accepted standard for defensive works in jungle operations.

With the exception of a general attack, the BAR should be fired single shot in order to conceal the fact that it is an automatic weapon.

In conclusion, it must be emphasized that these notes are by no means the last word in jungle operations, and neither are they complete, for war is still an art rather than a science. It is believed, however, that they do add additional meat upon the basic structure of our tactical knowledge. The tactics employed for any one particular operation must be governed by the variables imposed by the situation. A complete flexibility of mind coupled with a willingness to accept the proven doctrines established by successful combat troops will insure victory.





U. S. Signal Corps

## Germans:

U. S. Soldiers guard a German pillbox captured on the beachhead near Nettuno, Italy, following the landing there January 22nd. During the two months of severe fighting on the beachhead, the Fifth Army has inflicted 40,000 casualties on the Germans.



Associated Press Photo

According to the German caption on this picture, received through a neutral source, it shows a heavy German mortar in the courtyard of a house in Southern Italy. Recent reports indicate extensive use of mortars by the Germans in Italy—including their six-barrelled "screaming meemies."



Canadian Army Photo

Blasted by mortar fire, the German mine-laying truck was left burning by retreating Nazis. Picture was made before heavy rains turned the road to mud.





Press Association Photo

Allied shell bursts mark the intensity of the January 15th attack on enemy positions over Mt. Trocchio. About 5,000 rounds were fired from over 200 guns. Following this severe barrage, Allied forces captured Mt. Trocchio, last mountain peak before Cassino bastion. The battle for Italy has been a battle for peaks.

German caption on this picture, received through a neutral source, says that it shows German sappers covering the "withdrawal" of German troops "into their new positions" by mining roads. Scene is on the Russian front.





# 91st Reconnaissance Squadron

by Lt. Colonel Harry W. Candler\*

ON 1 April, 1943, while stationed at Petit Jean, French Morocco, the 91st Reconnaissance Squadron received instructions to proceed at once, by rail and marching, to Hq. II Corps at Gafsa. Leaving at dawn on 3 April, the squadron made the march of 1083 miles in five and one-half days, bivouacked near Tebessa on 8 April, and nine days later moved to an assembly position south of Djebel Tabouna, about ten miles east of Djebel El Abiod.

## ATTACHED TO 9TH INFANTRY DIVISION—18 APRIL

From II Corps Hq., then in Beja, it was learned that the 91st was to be attached to the 9th Infantry Division for its first combat mission. Division CP, about five miles east of Djebel Abiod, was on the second floor of a large white house sitting back about a mile off the main road. The only entrance to it was by means of a ladder from the ground to the second-floor window. This expedient facilitated checking the identity of individuals coming and going. There, the commanding general directed that the squadron:

- (1) relieve elements of the 9th Reconnaissance Troop in the area between Djebel Tabouna on the south and the main Djebel Abiod-Mateur road on the north;
- (2) relieve Company G, "X" Infantry, which was holding the observation point, Djebel Tabouna (654) and the high ground (506, 415, and 429);
- (3) relieve elements of the British 4th "Recce" in the area;
- (4) maintain liaison with the "X" Infantry on the north and with the 26th Infantry on the south;
- (5) push vigorous reconnaissance east on Mateur in the zone assigned.

The enemy's attitude, although defensive, was believed to be determined. His morale, particularly of the elite organizations, was high at that time.

## MOVING TO POSITIONS—19, 20 APRIL

The maps (1/50,000) of the terrain proved to be very difficult to read. What appeared to be small hills and ridges actually turned out to be very steep, sometimes precipitous, slopes and ridges. Unimproved roads and trails shown on the maps were, in most cases, non-existent. A few were very rocky sheep trails.

The zone assigned the squadron was cut almost in half by the long ridge running from east to west and was further partitioned by a high ridge running from northeast to southwest.

Returning to the squadron CP on the afternoon of 18 April, I issued the following orders:

"Commencing daylight, 19 April, the squadron will push vigorous reconnaissance to the east: A Troop, with platoon of tanks, on the right; C Troop on the left; boundary between troops generally along the east-west ridge; B Troop will establish observation posts on the high ground Dj Tabouna (564) and patrol road from Mine Dj Tabouna north to Dj Abiod-Mateur road; P&D Platoon, Headquarters Troop, will repair road to the east; remainder of squadron and command post, present location."

(NOTE: It was apparent that considerable pioneer and demolition work would be needed. A detail from the 9th Infantry Division had worked for some time on the trail from Dj Abiod east for about ten miles, but it was still necessary to pack on horse for the last two miles the supplies needed by the company on Dj Tabouna. The 9th Division was using a considerable number of pack animals at that time and asking for 400 more.)

At daylight, 19 April, accompanied by Captain Elgin E. Sanders, the commanding officer, Headquarters Troop, I went dismounted along the draw south of Dj Tabouna to the observation post on Hill 506. It was a steep climb from the draw up to Hill 506. Apparently no vehicle, except a ¼-ton, would be able to make it. Almost immediately upon reaching the observation post, I saw a peep and a ¾-ton truck making the grade. Already they were half way up. Asked if the whole troop was coming that way, the officer, Lieutenant Hudson, replied that it was. The remainder of Troop C, commanded by Captain Ted Douthitt, was at the foot. They were to spend the rest of that day getting up the hill and through the pass. Later, a captain and a lieutenant from the engineers said that they had been two weeks trying to find a way up that draw.

Meanwhile, Troop A, commanded by Captain Herc Ficklen, moved by way of the Dj Abiod-Beja road and then east to the northern part of the 1st Infantry Division's sector. Troop A relieved the British 4th "Recce" that evening and, with its CP at Farm, established one platoon on the high ridge just to the east of this farm, and sent one platoon east along the graveled road. This platoon, commanded by Lieutenant E. Stuart Wells, known to his platoon as the "Fighting Deacon," made first contact with the Germans in the vicinity of the Mine du Dj Semene.

The attached tank platoon, under the command of Lieutenant Dan E. Coffee, went to the vicinity of the Mine du Dj Semene. Stopped by impassable terrain (a wadi with vertical banks) about 1400 yards from the mine, Lieutenant Coffee ordered his turret 37mm's to fire on the buildings. He reported a great many Ger-

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# Squadron in Tunisia

From training film, "Mechanized Reconnaissance."



*Above*—A member of a mechanized reconnaissance unit observes enemy activity in the valley below this observation post. *Left*—Vehicle is camouflaged by shadows and branches, while crew makes dismounted reconnaissance.

mans were seen to come out of the mine and go into position. Shortly thereafter, his platoon came under fire of machine guns and mortars. The latter threw white phosphorus, and Lieutenant Coffee withdrew his tanks without casualties to a position from which he could keep the enemy under observation.

About mid-afternoon, an officer mounted in a peep, started back along the trail (see map, page 16) from the farm to the squadron CP with a message. He had gone but a few hundred yards when the peep struck a mine. The vehicle was broken up. Thrown out of the vehicle by the explosion, both the driver and the officer were severely injured.

Troop B, commanded by 1st Lieutenant John M. Davis, sent two platoons, dismounted, to take over the high ground OP's (506, 415, and 429), and one platoon, Lieutenant Franklin in command, was ordered on mounted patrol along the road of Dj Tabouna and the main Dj Abiod-Mateur roads.

The P&D platoon, working with the engineers from the 9th Infantry Division, improvised a road around Dj Tabouna to tie onto the Mine Dj Tabouna road so that there was no longer need for the pack animals.

On this day the squadron liaison officer with the 9th Infantry Division, Lieutenant James T. Clark, and one

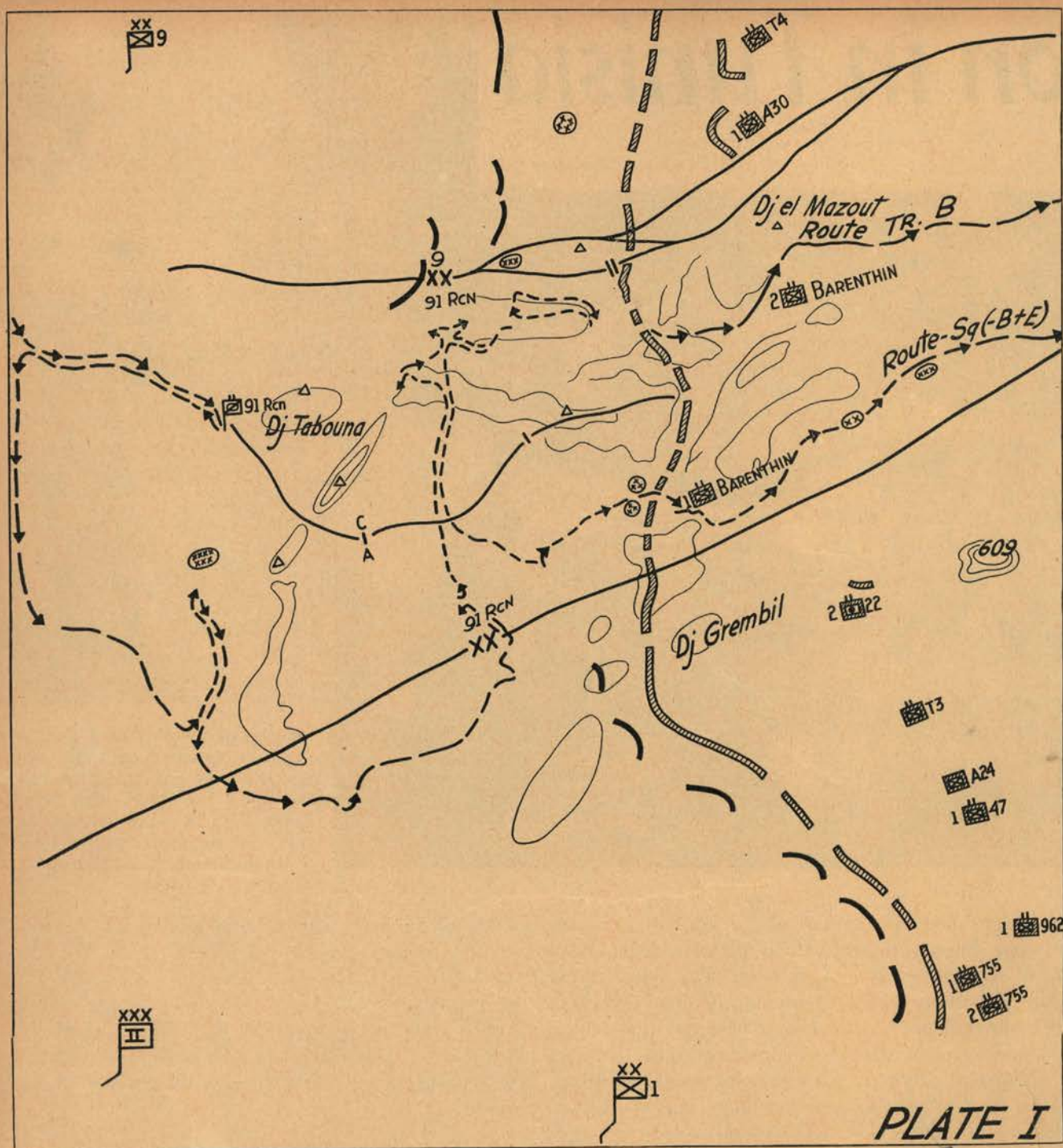
of his messengers, both driving motorcycles, were returning to the division when a German ME dive-bombed them at the road junction just a mile from the command post. The bomb struck beside the messenger and just in front of the officer. Both were blown from their machines. They were evacuated to the hospital that evening through the division clearing station.

## PATROLS AND LIAISON—20-22 APRIL

Troops A, B, and C continued their reconnaissance mission toward the east on 20 April. The remainder of the squadron moved from the vicinity of Djebel Tabouna to Farm. Contact was maintained with the enemy in the vicinity of Mine du Dj Semene.

On 21 April, an officer patrol from Troop A (mounted in four ¼-ton trucks), Lieutenant Harmon in command, was sent to reconnoiter around the enemy on high ground in the vicinity of Mine du Dj Semene. The patrol worked its way across the wadi but, because of the steepness of the slope, was unable to advance farther mounted. Commencing his dismounted advance, Lieutenant Harmon suddenly found his patrol surrounded by Germans. He, two men, and two ve-





hicles were captured. Two of the patrol's ¼-tons and their crews got back to their troop late that same evening.

Learning of the capture, Lieutenant Wells, although he had had little rest for the past two days, organized a dismounted patrol to go out that same night to recapture the officer and the two men. The "Deacon's" patrol was unable to get into the German position, but brought back much valuable information and a third man thought to have been captured.

The squadron, less detachments, moved to a draw just north of the Farm. Patrols reported a large German infantry force in the C Troop zone. Several mines, laid by German patrols during the night, were removed along the Djebel Tabouna-Djebel Abiod-Mateur road.

Most of the roads in this area, particularly where they crossed ridges, were under long and mid-range artillery fire during hours of daylight. (At this time the squadron had liaison details at the CP's of the 1st and 9th Infantry Divisions and "X" Infantry Regiment.) The 1st Reconnaissance Troop provided liaison between Troop A of the squadron and the 26th Infantry Regiment on the right. A patrol from Troop B occupied high ground (545 and 562) to provide liaison with the "X" Infantry Regiment on the left.

Troops A and B continued on their missions on 22 April. Rain was making difficult terrain still more difficult. Troop C moved north over the east-west ridge Djebel Tabouna (531-442-452). The squadron moved to the vicinity of the Mine de Razine.



## AGGRESSIVE RECONNAISSANCE—23 APRIL-2 MAY

Reporting to the Commanding General, 9th Infantry Division, I received a copy of the order calling for a corps attack to be made commencing daylight, 23 April. The 1st Infantry Division was to make its main effort on its right (south) flank; the 9th Infantry Division, in conjunction with the French Corps, to make its main effort on the north; the 91st Reconnaissance Squadron, to push aggressive reconnaissance to the east within its assigned zone.

Back at the squadron CP, I issued an order to:

"Troop A, to push vigorous mounted reconnaissance to the east; Troop B, to establish observation posts on hills and continue its previous mission; Troop C to leave its vehicles with drivers only and, attacking dismounted in its zone, seize and hold the forward end of the high ridge generally along the 33 grid; the squadron, less detachments, to remain in the vicinity of Mine de Razine."

At 0530, 23 April, amid a crescendo of artillery fire, both in front of the "X" Infantry on the north and the 26th on the south, elements of the squadron moved out. Troop A (south) was unable to get through the German position on the high ground. Troop C (north), advancing dismounted, did not come under fire until well along the ridges later that day.

About noon, I was called to Division CP. It appeared that the time was ripe for a German counter-attack. Whatever the cost, the squadron was to hold the line to which it had advanced. I gave this order to each troop commander by going to his CP and actually drawing the line on his map. The line ran generally along 33 grid. Troops would not withdraw west of it.

*(Liaison officers, carrying copies of the G-2 Summary and G-3 Operations Reports, usually returned to the squadron CP daily in the late afternoon and took back with them overlays showing squadron disposition and a summary of enemy information gained up to that time.)*

For the next ten days—23 April to 2 May, inclusive—the squadron tried, by mounted and dismounted action during the day and by patrols during the night, to find a way through the enemy line on the high ground to the front. On the night of 24-25 April, Troop B was relieved from OP duty and ordered to advance mounted in the zone between Troop C and the "X" Infantry Regiment on the north.

The tank troop, in command of Captain James S. Greene, Jr., was detached from the squadron 23 April and sent north to assist the advance of the French Corps. It was not back with the squadron again until 6 May.

During the last four days of this period, all movement was by dismounted patrol under supporting fire of the artillery and the squadron's own mortars and 37mm guns. Troop B and Troop C (on the north) advanced in zones to a north-south line generally along

the 36 grid. An artillery observer was obtained for the B and C troop zones.

Major John B. Donnell, the Squadron S-2-3, was with the leading platoon of Troop C when, advancing east along the draw to envelop the enemy strong-point, vicinity high ground, the platoon came upon and surprised a group of Germans in a draw. Major Donnell directed the emplacement of a light machine gun, which killed four or five Germans and wounded several others. The platoon was in turn brought under fire of German machine guns from a position on the high ground. Sergeant Nelson was killed and Major Donnell wounded in this action.

During this period the squadron command post and reserve were moved to a new location daily and normally to an alternate location after darkness. *It had been the experience of troops in the southern Tunisian operations that Germans were spotting such installations during the day and returning to bomb them during the late hours of daylight or early hours of morning.*

## ADVANCE—2-4 MAY

Patrols during the night, 2-3 May, discovered the Germans had withdrawn from their positions on Green and Baldy Mountains in the squadron zone; however, there was still the problem of reconnoitering for passages through this high ground to the front.

Late in the day on 3 May, Troop B moved forward mounted for a short distance past the position formerly occupied by the German infantry. Difficulty of the terrain dictated dismounted reconnaissance. Patrols were sent out during late afternoon and evening to find a route or routes in the direction of the enemy. The remainder of Troop B moved to an assembly area point.

Troop A found a pass just south of the Mine du Dj Semene, but it was doubtful that vehicles larger than a jeep could get through. One platoon of Troop A, Lieutenant Gus Gabel in command, advanced dismounted through the position formerly occupied by Troop C.

Troop C, having been dismounted and in constant contact with the enemy throughout the period, was withdrawn to squadron support. Its performance had been magnificent. The entire troop, driven back from its position by German counterattack late one evening, had moved forward at daylight and retaken not only its former position, but successfully attacked and occupied the one previously held by the Germans.

The next day, 4 May, I went forward to the leading platoon of Troop A and found it halted in front of a mine field. The Germans had withdrawn in such haste that they had left in place the triangular yellow flags employed for warning their own vehicles. The platoon, after removing sufficient mines for passage through the field, moved rapidly on towards Mateur. The remainder of the squadron was directed over the route taken by the platoon and the column commander was given orders for his continued advance.



## ATTACHED 1ST ARMORED DIVISION—MATEUR

Rolling into Mateur, I found the platoon from Troop A and all of Troop B had been there about two hours.

The 81st Reconnaissance Battalion, commanded by Lt. Colonel Charles J. Hoy, preceding the 1st Armored Division up the Beja-Mateur road, had sent its leading elements into Mateur ahead and had the city of Mateur and all roads leading thereto outposted when the leading troops of the 91st arrived. That evening the 91st received an order detaching the squadron from the 9th Infantry Division and attaching it to the 1st Armored Division.

The platoon of Troop A, directed to move on up the road to the north of Mateur and relieve a detachment of the 81st, reached the Sedjenane River and found the bridge at that point destroyed, but succeeded in establishing contact with the French Corps north of the river. The remainder of Troop A, when it arrived, moved on north to a position at Farm just north of Michaud. The squadron (less Troops A and E) went into an assembly position one mile west of Mateur. Patrols from Troop B were sent immediately to reconnoiter the high ground, Djebel Ichkeul. That same evening Combat Commands A and B, 1st Armored Division, moved into an assembly area a short distance south of the squadron.

The following morning, 5 May, I reported to the Division CP, which then was about eight miles southwest of Mateur on the Mateur-Beja road. The squadron was given the mission of liaison between the 1st Armored Division and the 9th Infantry Division on the north, and directed to protect the left (north) flank of the division. Squadron CP was to be at Michaud.

A new directive from Division CP added to the squadron's original mission the job of clearing what was believed to be a small detachment of Germans from

**An Infantry filled truck passes the wreckage of German tanks. Around Mateur, Tunisia.**



the high ground of Djebel Ichkeul. Division artillery needed that high ground immediately. Consequently, no time was lost in sending out a bantam patrol from each of Troops B and C to reconnoiter routes of approach.

Viewed from the south, Djebel Ichkeul was a rocky ridge about one and one-half miles wide and five miles long, consisting of three high points, the highest approximately 1,500 feet above the flat marshy ground at its base. It was bounded on the north side and east end by a salt lake, and on the south side and west end by a marsh in which the depth of the water varied from ankle to waist deep.

Developments during the day included the arrival of forward elements of the 9th Infantry Division in the morning; movement into the squadron assembly area of Troop E, the tank troop which had been attached to the French Corps; and the arrival of Major Charles D. Ellis from Headquarters, Fifth Army, who was to act as observer with the squadron. A patrol sent back word that it had run into machine gun fire on the east slope of Djebel Ichkeul. The fire was delivered from the vicinity of the French mine. The report further indicated the apparent impossibility of reaching the ridge with any kind of a vehicle.

## ATTACK—5-6 MAY

It was planned to attack the high ground from west to east, troops abreast, C on the left and B on the right, with Captain Douthitt, Troop C commander, directing the attack. The two troops were to be in readiness positions prior to daylight, 6 May. Vehicles were to remain in their present assembly position. The attack was to be supported by fire of the troop's own mortars, the AT platoon (37mm guns) of Headquarters Troop, and a battery of division artillery.

Troop C, on the left, first to cross the swamp, gained the base of the high ridge, and surprised and took about 30 German prisoners. Troop B, on the right, had almost gained the base of the ridge when it came under a veritable hail of rifle and machine gun fire.

Meanwhile, the battery of division artillery, plus squadron 81mm mortars and 37mm's, kept pounding away against the south slope. An order was sent to the commander of Troop B to come directly to position on the high ground; and to Troop A (less one platoon), to move up.

After dusk, leaving two messengers at the OP, I moved around the west end of the mountain, down the south slope, and past B Troop's position. Captain Douthitt, having reconnoitered down the south slope near the French mines, reported that the only remaining resistance was coming from the dilatory fire of a few snipers. Troop C was ordered back to its vehicles to reorganize. Troop B was to remain in position to be relieved later by Troop A, at which time it was to return to its assembly position.



## ATTACHED COMBAT COMMAND A

The following morning, 7 May, the squadron received an order attaching it to Combat Command A for an advance on Ferryville. Troop A was ordered to continue the job of clearing the German snipers off the Djebel Ichkeul, and, while I reported to the commanding officer, the squadron executive officer, Major John D. Wynne, marched the squadron (less Troop A) to the designated assembly area.

The mission of the combat command, Carr's battalion on the left and Cole's battalion on the right, was to advance on Ferryville, and cut the roads leading into it on the north, and the Ferryville-Bizerte road to the east. The squadron's mission was to precede the advance of the combat command and cut the road north of Ferryville at the bridge of Oued Tindja, occupy the high ground northwest of Ferryville, and to cut the road at the bridge east of Ferryville. The German forces in front were estimated to be what was left of the battalions previously faced in the Djebel Tabouna area.

During the afternoon, artillery fire came from across the Lake El Ichkeul, west of Tindja, and from the high ground just northwest of Ferryville. The bridge across the wadi Melah had been blown.

The high ridge on the squadron's east and north flank extended right down to the edge of the salt lake, Garaet El Ichkeul. A road ran along the edge of the lake. Both sides of the road were occupied by German infantry.

## ADVANCE TO FERRYVILLE—7 MAY

A downpour during the night made it doubtful whether or not the heavy vehicles could lead the advance cross-country. The tank battalions of Combat Command A were in dispersed formation on the south slope of the ridge. The squadron's tank platoon, with reconnaissance platoon (bantams only) attached, advanced through the tank battalions and over the ridge. There was a steep-banked wadi between this ridge and the nose of Djebel El Zarour, about 250 yards beyond. At this point the two platoons came under fire of a 40mm gun at the head of the draw on the right, but bounded on across the wadi anyway.

On the slope of the nearby ridge, the platoon flushed and captured about thirty Germans. On the west side of the road about the same number came out with their hands up. The remainder of the squadron came on through and dispersed. The two tank battalions of Combat Command A (1st Armored Division) advanced. One turned toward the east around the ridge Djebel El Zarour; the other, preceded by the M10 platoon, turned north of the road.

The squadron tanks (Troop E), accompanied by one of the reconnaissance platoons, had advanced into a draw beyond the hospital. Two German batteries, one on the hill northwest of Ferryville, and the other west of Tindja, were going "full blast." One gun, reported to be an 88mm, opened up from a cactus

patch about 450 yards in front and stopped the tanks on the left. Three of Troop C's 81mm mortars, positioned in the draw just in rear of the tank platoon, brought this German gun under fire. The tank platoon leader, from his "hull-down" position, observed the fire and directed the mortar crew by radio. The German gun was soon put out of action.

Over the radio, the group commander ordered that the advanced units push forward without delay. A bantam patrol of two men with an SCR-193 advanced down the road about 500 yards to a point where a road led east to the cactus patch from which the German gun had been firing. Men who appeared to be members of the gun's crew were seen "high-tailing it" across the wheat field toward an olive grove about 175 yards away.

The bantam stopped with its hood under the muzzle of the German gun. One of the patrol jumped out with his carbine to bring the retreating crew under fire. A German 88mm, perfectly camouflaged and silent until that moment, opened up from the olive grove and struck the bantam on the frame underneath the driver's seat. The driver was blown from his vehicle. We immediately opened up with everything we had. The wheat and cactus were fairly mowed down. I believe that it was a direct hit from one of the 81mm mortars that actually put the big gun out of action. There were five German soldiers dead at the gun when the CP vehicles came up later.

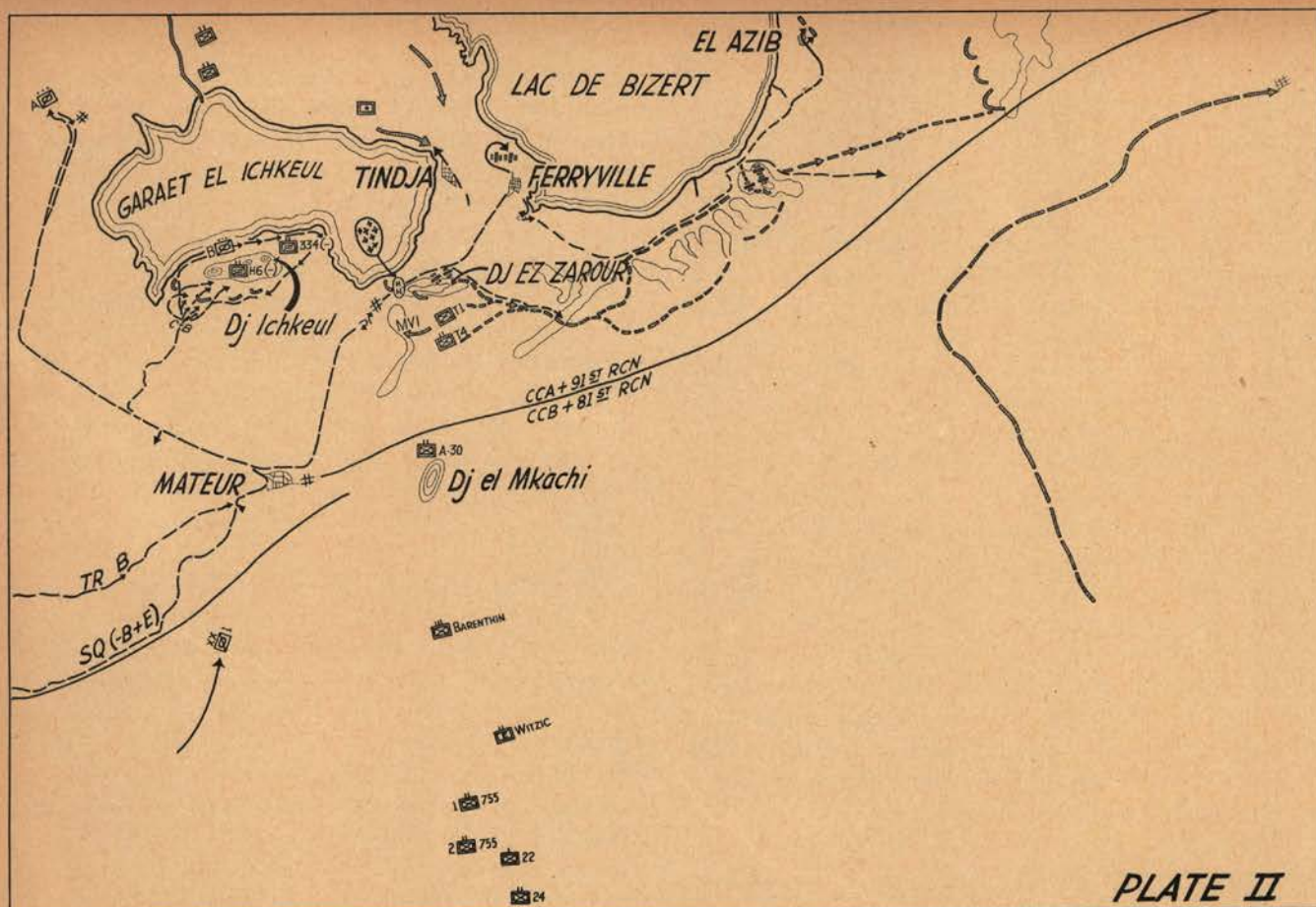
Firing at the Germans, who were then in full retreat, the light tanks (Troop E) advanced from wadi to wadi along the north slope of Djebel El Zarour. The leading platoon of Troop B, followed closely by Troop C, and the remainder of Troop B, covered on the right by the tanks, bounded up the road and into Ferryville.

The executive officer lost no time in sending a platoon from Troop B on to the high ground northwest of Ferryville, and Troop C to the east of the town. He then dismounted the remainder of the troops to round up German prisoners in the town. Carr's battalion passed around the high ground and turned east. Cole's battalion came up along the south slope of Djebel El Zarour, crossed the Ferryville-Tunis road and pursued the routed German forces. Both battalions were running low on ammunition and fuel.

## MAINTAINING OBSERVATION AND CONTACT

After directing one reconnaissance platoon toward the ridge at Farm with the mission of maintaining contact with the Germans, I returned to see what was delaying the tank troop and found that the executive officer, acting on the instructions of the force commander, had issued an order by radio for all elements of the squadron to assemble in Ferryville. The tanks were then directed to move off the road to an assembly position. One platoon was ordered forward to the ridge near Farm and was given the mission of maintaining observation and contact.





Continuing on into the town of Ferryville I reported to the force commander that I had just seen "thousands of Germans streaming over the ridges about five miles east of the town." The squadron CP half-track had not come up yet, so I went to the ridge in a peep. There, the first persons I saw were Major Ellis, the observer from Fifth Army Headquarters, and Lieutenant Coffee with his tank platoon (less two tanks). These two officers seemed to have "noses" for finding Germans.

Moving up the ridge toward the north to hit the Tindja-Porto Farina road, we came upon a German long-barrel 75mm gun with 10cm muzzle brake and a half-track prime mover. Lieutenant Coffee hooked his tow cable on the front of the prime mover (full of ammunition and equipment) and towed the half-track with its gun back along the ridge to the road, then north to a farm where an ordnance dump was being set up.

Flowing down the ridge and out on the Tindja-Porto Farina road was what appeared to be an "unlimited stream" of German vehicles. In a draw about 1000 meters to the south, were six large German tanks. About 1000 meters farther south there was a large assembly of Germans reorganizing, and nearby a large supply dump; in a draw to our right front was a battery of six large-caliber guns underneath camouflage nets. Cattle and sheep were grazing peacefully around the position. Over the tank radio, Ellis contacted the artillery and gave them the targets. An artillery forward observer went with him to the ridge, and they

brought these very profitable targets under fire during the remaining hours of light.

#### PURSUIT TOWARD PORTO FARINA

At dark, the squadron (less Troop A) was assembled about one and a half miles southeast of Ferryville. With one platoon of the armored engineer battalion attached, it was ordered to precede, commencing at daylight, the movement of the force east on the Porto Farina road and then north to:

Objective Right (Cole's) Column RJ (4½ miles south El Azib);

Objective Left (Carr's) Column RJ (El Azib).

*A brief study of the terrain will show that for a distance of about six miles the Ferryville-Porto Farina road there is a narrow defile bounded on the north by the Lac De Bizerte and on the south by a succession of high ridges and deep wadis perpendicular to the road.*

Troop C moved out. Troop E (light tanks) had not come up, so I investigated the delay. For the first time, gas and oil had been late coming up, and had arrived just before daylight. I stayed there until they were ready to roll. Seven miles up the road I came upon Hq. and Hq. Troop, and just ahead Troop C was being held up by artillery and antitank (40mm) gun fire from the next ridge. Captain Sanders reported, "German Infantry, machine guns, 40mm antitank guns, and eight 88mm guns in position on or just beyond the ridge."

An artillery forward observer went to the high ground



on my right to direct artillery fire on the German position. The tank battalion and the M10's came up on the left on the strip between the road and the Lac De Bizerte. Troop C positioned its mortars just behind the ridge and sent a platoon dismounted up the steep wadis to find a way around the enemy left (south) flank. Troop B was ordered up on the right of Troop C. The fire fight lasted until about 1530. By that time all of Troops B, C, and E were right up against the west slope of the ridge, Hill 151.

The movement forward was to be made in accordance with the mission and previous orders, except that Troop E (light tanks), less one platoon, was to lead going north to the Lac, thence along its edge to the objective on the left. Movement got under way as if started by the same button. Carr's Battalion and the platoon of squadron light tanks, led by Lieutenant Dave Termin, began to roll.

The ground for about five miles in front was flat, pocked by mud and shell holes, and covered by the fire of German weapons on the high ground to the south and east. Two of Carr's medium tanks were hit. The squadron, Troop E (less two platoons), and Troop C (all in order) bounded all the way across. It was the nearest thing to a mechanized charge I have ever seen.

Troop B, preceded by Stowell's light tank platoon, turned east toward the objective on the right.

Upon arrival at El Azib, about twelve miles south of Bizerte, the squadron immediately posted local security. On the left (west) lay Lac De Bizerte; on the east, a ridge stretched in a half moon from the edge of the lake; and to the north lay Menzel Djemil. The country to the south was flat and open but was covered by Troop B with two light tank platoons. Although late in the day, there still was considerable firing in the rear. Lieutenant Coffee's tank platoon (less two tanks), with Lieutenant Duntze's platoon from Troop C, attached, was ordered east to the ridge, and thence along it to Menzel Djemil to determine what was there. Carr sent a tank platoon to the east and south with a mission similar to Coffee's.

Coffee "came in" on the radio with, "Have captured a battalion, about 700 officers and men." Request was made via radio to Group Headquarters to send MP's to handle the prisoners.

Darkness and the captured Italian coast artillery battalion arrived at about the same time. The latter was led by a peep and followed by one of Lieutenant Coffee's light tanks. By themselves, ahead of the Italians, were about thirty German soldiers. In an improvised enclosure were about the same number of Germans, captured during the action around El Azib that afternoon. The wounded were placed on a captured truck and an ambulance, and the "on foot" contingent was herded into a march column and sent on their way back toward Ferryville. As before, the peep led the way with a light tank in the safety position. By then it was quite dark.

Lieutenant Coffee reported a large concentration of German soldiers, supplies, and a battery of six emplaced coast artillery guns in the vicinity of Menzel Djemil.

### THE ROUND-UP

That night the squadron received orders to "advance into the peninsula, reconnoiter the three roads, and report when the roads are clear of the enemy."

After passing Menzel Djemil, some Germans were found in a large olive grove, and Staff Sergeant Smith's platoon of Troop C stopped to round them up, search them, and start them to the rear under guard. These proceedings had to be dropped, however, not so much because of the time that would be lost as the fact that men could not be spared for guards. Afterwards, the pursuit moved by bounds, and when the Germans came toward the road with their hands up, they were just motioned on back towards Menzel Djemil.

The remainder of Troop C and its attached platoon were met at the tip of the peninsula just across from Bizerte.

A few rounds of medium caliber HE appeared to have been delivered from back towards Menzel Djemil.

Troop C and Troop E (less two platoons) took the road to the east. At the road junction, a report was sent back that the peninsula was now clear of the enemy, but that the roads were full of Germans moving toward their rear.

The road referred to ran right along the Mediterranean for about three miles, then "petered out" into a trail. A report from Troop C stated that deep sand made the trail impassable to any type of vehicle.

Having directed Troop C to hold its present position and prevent any further withdrawal of the enemy toward the coast, I returned with Troop E to El Azib, where, when Troop B arrived, I ordered it on toward Ras El Djebel-Porto Farina. Going was tough in this direction, too; sand proved deep here also. After going as far as possible mounted, Troop B dismounted and advanced all the way to the coast.

At about 1100 the division commander "came in" on the radio with "Stand by for an important message. . . . Cease firing. Hold present position until further orders. Germans have surrendered."

The force commander issued the order that although the "cease fire" order had been given, the terms of surrender would be enforced by fire; i.e., all German and Italian soldiers were to cease destruction of any arms or equipment and become prisoners of war. Those attempting to escape from the coast or coastal ports were to be shot.

Troop A was still fighting the "Battle of Djebel Ichkeul." When a copy of the surrender order, signed by the German commander, General Krouse, was sent in to the German captain in command there, he refused to acknowledge it, saying: "A German general would not sign such an order." When two days later he was confronted with the German general, he reluctantly



accepted the "cease fire" order and finally surrendered.

On 11 May, the 91st Reconnaissance Squadron was assembled for the first time in over a week at Ain Rhelal. For the entire operation, the squadron losses were one officer killed and six officers wounded; 15 men killed, and 59 men wounded.

#### SPECIFIC OBSERVATIONS AND CONCLUSIONS

1. GENERAL.—*Irrespective of branch of service, our cavalry-trained officers and enlisted men are the equals of any in the world today.* On their initial mission in the first phase of this campaign, they filled a gap in the line and performed the dual rôle of cavalry and infantry. In the later phase, when attached to the 1st Armored Division, they performed the normal rôle of cavalry on reconnaissance in advance of Combat Command A.

2. MOBILITY.—*The principal reconnaissance vehicle was the ¼-ton truck.* The scout car's chief usefulness was as a means of transport for the radio communications between platoons and troops and troops and squadron.

3. FIRE POWER.—*The squadron was over-weaponed and under-manned.* Compared with similar units of armies of other countries having up to three times as many men, our squadron had more crew-served weapons—cal. .30 LMG's, cal. .50 MG's, 37mm guns, and mortars.

a. Based on ammunition re-supply figures, the squadron's principal weapon was the 81mm mortar. The mortar (and its crew), mounted in two ¼-ton vehicles, normally was in position early and delivered accurate fire.

b. Next in order of use were the 37mm gun and the caliber .30 machine gun.

c. The shield on the 37mm gun, M6, presented so high a silhouette that the piece normally drew fire quickly.

d. The caliber .50 machine gun (with its ammunition load) proved heavy for the ¼-ton truck on which it was mounted. However, it was easily and quickly positioned to fire on German machine gun positions. Mounted on the scout car, this weapon was employed similarly.

e. As an antiaircraft weapon, the caliber .50 machine gun mounted on the vehicle was most effective.

4. COMMUNICATIONS.—A question frequently asked is: "Did you have communications at all times with higher headquarters?" *The answer is yes, but not always direct communication.* The answer should be qualified further as follows:

a. The SCR-193, although proving itself one of the best in the field, went "out" on occasion. When no alternate set was available, messages were relayed.

b. The SCR-284, being subject to frequent breakdown, was replaced by the more reliable SCR-193 prior to the beginning of operations in Sicily.

c. The SCR-510, mounted in the ¼-ton truck,

proved its worth for intra-platoon communication. Dismounted from the vehicle and set up on an OP, the 510 operated effectively for short ranges.

d. The ideal combination would appear to be a telephone at the OP hooked up by light wire to the SCR-193 mounted in a ¼-ton truck (or command car) at the base of the hill.

5. SUPPLY.—*Normally, supplies of all classes were pushed well forward by higher headquarters.* Only once were all vehicles not serviced and ready to move by daylight. On this occasion, the S-4 did not receive instructions relative to the place of delivery to one of the troops in sufficient time to allow him to move them up. At that, S-4 managed to get the trains up by midnight. The gas trucks of Troop E reached their area just before daylight.

6. LIAISON.—This proved to be a vital problem of unanticipated difficulty. During training, the Assistant S-2-3 had been counted on as squadron liaison officer. Tables of Organization did not provide him with a radio-equipped vehicle or messengers. *In combat, it was found expedient to have, in addition to liaison with higher headquarters, officer details with the units on the right and left. These officers and men had to come from the troops.*

7. PERSONNEL.—The personnel section, under a warrant officer, moved with the trains under squadron control. The adjutant remained with the squadron command post and alternated with the troop commander, headquarters troop, as headquarters commandant.

*Immediately at the end of the campaign, the addition of one officer per reconnaissance platoon was recommended for the following reasons:*

a. On reconnaissance, the platoon leader's job is to find out exactly what is in front of him, exactly where it is, and get that accurate information back to higher headquarters. He is kept plenty busy employing his light vehicles. In a fast-moving situation with surprise targets bobbing up, he must fight or fall back. Temporarily then, he ceases to function as a reconnaissance agency in order to bring the fire of his small arms and supporting weapons to bear on the enemy.

b. When properly coordinated and directed, the weapons of the reconnaissance platoon are formidable. They should be under the command of a second officer in the platoon who is free to spend his entire time studying the terrain with a view to the best possible employment of his weapons on short notice.

c. With a second officer employing the platoon's weapons, the platoon commander (reconnaissance officer) can search continuously for enemy positions and installations, and continue to make his reports, even while his platoon has become engaged.

d. With a second officer, the platoon leader is afforded a relief when the platoon is on a detached post, observation post, or other mission away from the troop. In combat, as on maneuvers, the platoon leader is "on the go" all of the time that his platoon is out.



# Comments from Combat

AS fighting on all fronts progresses, the opinions of enlisted men, as well as officers, on lessons learned in action, including mistakes and new ideas, are being received on practically all phases of battle. The following comments and bits of advice, received from different theaters of war, furnish much valuable information for troops who have not yet met the enemy.

## *An Infantry Captain who fought in Sicily:*

To have battlefield leadership a company officer must build a legend about himself. He must take calculated risks. He must, on the other hand, do what he expects his men to do. He must always dig in, always take cover. His men must know that when he ducks, they must duck. On the other hand, they must not believe that when the officer ducks, they must run away. The officer must come through every barrage and bombing with a sheepish grin and a wry remark. Masterly understatement of hardship and danger endured plus a grin always pay dividends.

## *An Operation Report from the Seventh Army, which fought in Sicily:*

During an attack officers and noncommissioned officers must never allow men to lie prone and passive under enemy fire. They must be required to move forward if this is at all possible. If movement is absolutely impossible, have the troops at least open fire. The act of firing induces self-confidence in attacking troops. The familiar expression "Dig or Die" has been greatly overworked. Attacking troops must not be allowed to dig in until they have secured their final objective. If they dig in when momentarily stopped by enemy fire, it will take dynamite to blast them from their holes and resume the advance.

## *An Infantry Colonel who fought in Sicily:*

Fear is normal. Fear of being afraid is the greatest obstacle for men new in battle to overcome. There is no reason for shame in being afraid. Men who have had excellent battle records freely admit they are scared stiff in battle. The important thing is that every soldier must be taught all he needs to know so well that battlefield thinking is reduced to a minimum. Automatic, disciplined reactions to battlefield problems must be the rule.

In battle the worst element is mental and nervous exhaustion. There is no real rest under fire. The ability to withstand fire is more important than all the knowledge in the world.

## *A General Officer:*

Action on Attu indicated that standard Japanese infiltration tactics can be offset by a system of "anti-

termite" patrols organized behind our lines to protect our artillery, command posts, and supply lines.

Wherever troops know that these friendly patrols are behind them, fire in their rear will mean to them simply that our patrols are exterminating the infiltrating Japs. This feeling was well expressed by General Nathan Bedford Forrest (Confederate cavalry commander, Civil War), when one of his staff officers approached him in great excitement and said, "General, the enemy is in our rear." Forrest calmly replied, "If they're in our'n, we must be in their'n."

## *A Report from the South Pacific:*

Aggressive action is necessary. Never relax the pressure. The serving of hot meals in jungle fighting is often impracticable. A hot drink or hot soup serves the same purpose and is much more within the realm of possibility.

In jungle patrolling, any shine from the smallest metal surface, such as a belt buckle, or a watch, must be avoided. A luminous watch constitutes a real danger. A white skin is most conspicuous, and the practice of some patrol members marching stripped to the waist is inviting trouble. Any noise, such as talking, coughing, spitting, etc., has to be treated as the greatest of all dangers.

## *A Lieutenant Colonel who fought in Tunisia:*

Many men were lost by using squad patrols. The Germans used stronger patrols and just gobbled them up. A patrol should be either a sneak patrol, small enough to escape detection, or a combat patrol, large enough to fight its way out of difficulty. Never allow one man to go out alone.

## *An Infantry Company Commander:*

Thorough training in hand-to-hand fighting is invaluable. At Biscari Airport in Sicily I used my trench knife twice. One of my men got three with his bayonet. He shot one; then another tried to grab his bayonet. He got this one with the bayonet. That got him started, so he got three in all before it was over.

## *An Infantry Lieutenant:*

At Biscari Airport, a German officer tried to capture our "Bazooka" man, but the latter gave the officer an uppercut and then killed him with his helmet.

## *An Infantry Private who fought in Sicily:*

Don't Gawk. Several times in Sicily, German planes pretended that they were involved in a dog-fight in order to secure the attention of the ground troops. Then they swooped down on a strafing run.



### *A Lieutenant Colonel Commanding Rangers:*

Rangers use the "Buddy" system in their work. The men always work in pairs. They live in pairs, eat in pairs, do guard in pairs—even do KP in pairs. Confidence in each other is developed. They can pick their own buddy from within their platoon.

### *A 43rd Division Officer on New Georgia:*

We effectively cured the Jap of his liking for sniping from trees by the command, "Fire Mission. All Battalions . . . Fuse Quick. Three Volleys." The quick fuse resulted in bursts in the tree tops. After a week of this treatment the Jap sniper moved from the trees to the ground.

### *A Seventh Army Report from Sicily:*

A German Luger pistol was left "booby trapped" on a table. A new replacement picked it up. Two were killed and fourteen wounded in the resulting explosion.

### *A 1st Division Report:*

A Luger pistol was found lying on the ground in Tunisia. An American infantry lieutenant carefully tied a long cord to it and then, getting into a hole, pulled it to him and put it in his pocket. Later in the day while examining the pistol he attempted to remove the magazine. The explosion killed the lieutenant and two other men and wounded six soldiers.

### *An Infantry Private who fought in Sicily:*

The enemy abandoned his tanks with motors running. When we tried to stop the motors they blew up.

*Report from the 43rd Division, which fought on New Georgia in the Solomons:*

Of the basic infantry weapons, the M1 rifle is doubtless the best all-around weapon possessed by our troops.

The fragmentation grenade was used frequently against suspected areas of heavy jungle growth and on some occasions for the destruction of booby traps around perimeter defenses.

In spite of its handicap of sounding like a Jap .25 caliber light machine gun, the Thompson submachine gun proved very satisfactory for specialized personnel such as linemen, artillery forward observers, vehicle drivers and reconnaissance personnel.

The Browning auto-rifle gave excellent service. This weapon has high jungle mobility and provides excellent fire power for short-range targets frequently encountered.

The light machine gun proved very effective in the night security of bivouacs. At other times, it was used to cover the advance of attacking echelons by placing heavy fire in the direction of suspected pillboxes.

The heavy machine gun was used for the defense of beachheads and water passageways; also, to some extent, in the defense of regimental and battalion command posts.

The 60mm mortar unquestionably contributed to the demoralization of the enemy. Its exceptional accuracy made it valuable in close support, and its use during the assault on the revetments and shell craters at Munda Field and Kokengolo Hill is credited with saving many lives.

The 81mm mortar proved to be one of the most important single weapons contributing to the success of this offensive.

While the 37mm AT gun is admittedly a weapon of opportunity in jungle warfare, there were occasions on which it served us handsomely. The Nips had a field piece located where it could interdict our beachhead at Laiana. Scouts located the gun, but our mortar fire could not silence it. We disassembled a 37mm gun and carried it forward under cover of the dense foliage. The gun was then assembled under cover and moved rapidly to a point in the open from which it could command the target. Three accurately aimed rounds destroyed the gun and killed its crew.

Numerous reports indicate the effectiveness of the "Bazooka." It has been used successfully against pillboxes, machine-gun nests and personnel.

### *An Infantry Officer:*

As for infantry-artillery teamwork in Sicily, our division artillery was never out of support for more than five minutes throughout the whole campaign. We have a wonderful set of battalions in our division artillery, and we have worked so closely together that they are as much a part of our outfit as our own battalions. We just can't praise them too much. They were always right there when you needed them.

In one place, where we just couldn't get forward because the Heinies were on superior ground and had us pinned down with rifle, machine gun, and mortar fire, the division artillery massed nine batteries on them and plastered them with 1,500 rounds in less than 30 minutes. We then walked through that position without a scratch, and the German dead were all over the place.

## Prisoner of War Fund

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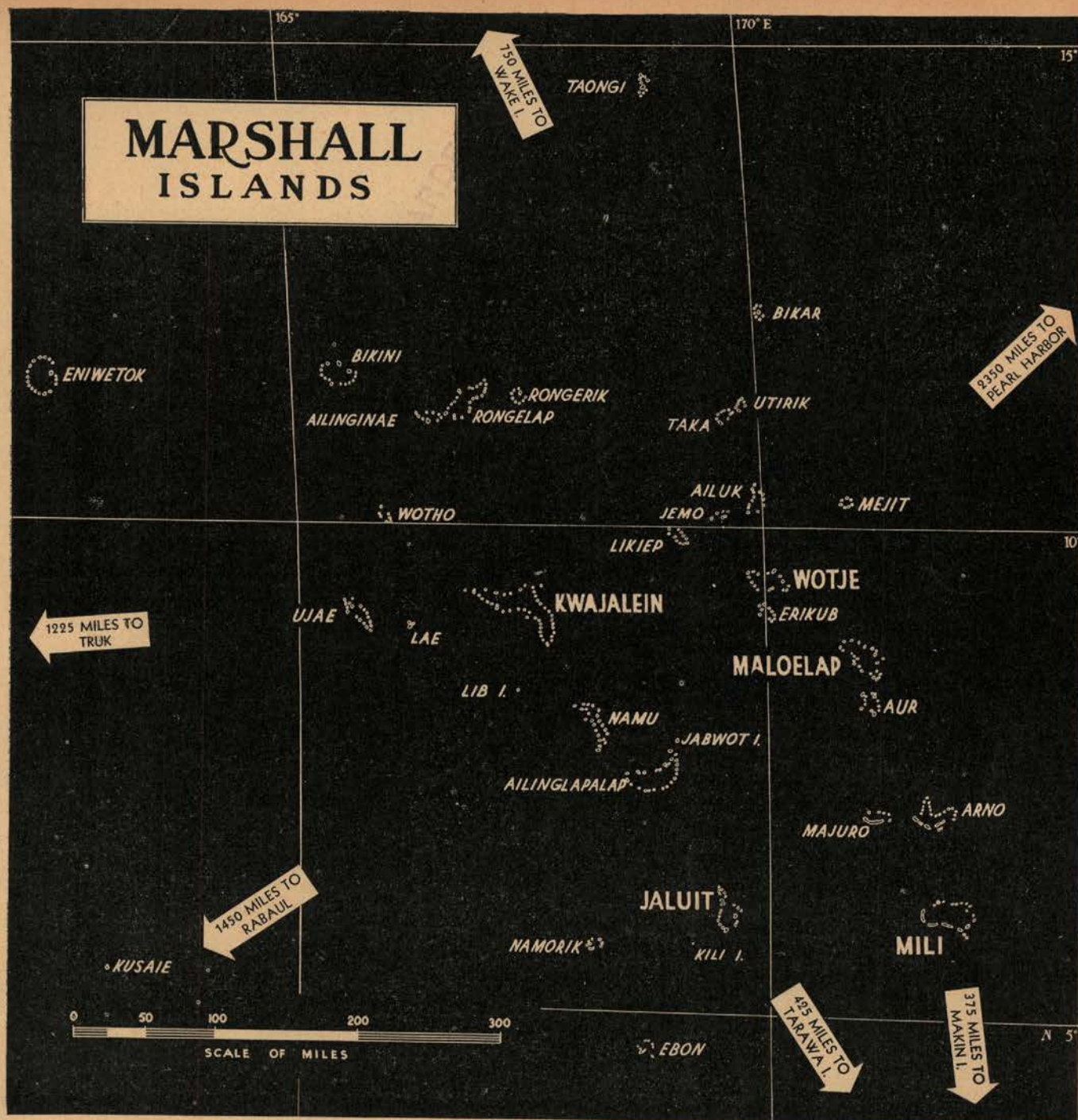
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*The Cavalry Journal*

1719 K Street, N.W. WASHINGTON 6, D. C.





IN the Central Pacific, the atoll of Kwajalein is like a curving necklace of pearls. Its coral islands sparkle above a string of reefs enclosing a broad anchorage. It lies near the center of the Marshall Islands, which were in Japanese hands from the end of the first World War until they were taken by U. S. Army and Marine forces during the first week in February. Previously, those islands were links in the outer defenses of Japan. They lengthened Allied supply routes, limited military operations, and formed a buffer for the Japanese base at Truk.

Prior to the invasion, Kwajalein and other Marshall Islands were bombed day after day for a month. Then beginning January 29th an intense two-day bombardment preceded the arrival of the surface forces, which poured another 14,500 tons of Naval steel on the atoll.

It was reported that flames were so intense the invasion forces experienced difficulties in landing. The bombardment also put out of commission Jap air bases on other atolls.

Tactical surprise was complete. It appears likely that the Japs anticipated attack upon their more eastern and better known and perhaps more strongly held island bases, such as Jaluit and Wotje—which were by-passed.

By February 6th eighteen of the islands had been conquered, and the Battle of Kwajalein Atoll was over. The U. S. lost 286 killed against 8,122 Japs dead.

During the whole engagement, the Japanese fleet did not appear.

The rehabilitation of air fields on Kwajalein will help to keep the Jap bases useless. The effective isolation of Jaluit and Wotje is indicated.





Official U. S. Marine Corps Photo

## Japs:

Thirty-six hours after Namur Island, Kwajalein Atoll, Marshall Islands, was "secured" this supposedly silenced Jap blockhouse blew up, bursting a steel door. A Jap soldier stumbled through and three more were found inside. There had been 20 Japs inside the blockhouse before the explosion. The building was roped off and specially trained bomb disposal men assigned to the job of checking a large supply of aerial bombs said, by the prisoners, to be stored inside.



Official U. S. Marine Corps Photo

Dead Japanese soldiers strew the sands of Tarawa as Marines continued their "mopping-up" operations.



Press Assn.

After the struggle at Cape Gloucester, New Britain, troops examine wrecked Japanese equipment. A wrecked truck at left; dual purpose anti-aircraft gun at right.





Press Assn.  
This Japanese dual-purpose anti-aircraft gun was wrecked by shells of the American Navy pumped onto the beach at Cape Gloucester, New Britain, as a preliminary to invasion of the island.



Official U. S. Marine Corps Photo  
Subdued and stolid, these Jap prisoners were photographed standing near their enclosure on Guadalcanal. More prisoners have been taken in recent fighting than in earlier action on Guadalcanal.



Press Assn.  
This large Jap gun lies blasted among the rubble of dirt and concrete, victim of the terrific U. S. bombardment of Enubuj Island in the Kwajalein Atoll in the Marshalls.



# FIRST YANKS ON JAP SOIL

7th Reconnaissance Troop  
takes islands in the Mar-  
shalls and plant first U. S.  
flag on Nip soil.

*by Sergeant Merle Miller*

AT 0430 on D-Day of the attack on Kwajalein Atoll in the Marshalls, Captain Paul B. (Red) Gritta and 84 of his men eased their rubber boats up to the low, dark shadow that was the beach of Gehk Island. They were the first American troops to set foot on Japanese soil in this war.

They landed on Gehk by mistake; they had been scheduled to hit Ninni Island, another pin-point three-quarters of a mile across a coral reef to the south. But in the darkness most of the islets of this atoll were mistaken for black-capped waves, and Captain Gritta decided that, as long as they were on Gehk, they might as well clean out any stray Japs before moving on.

In four days of fighting, the 7th Reconnaissance Troop (Mecz.) of the 7th Infantry Division took Gehk not once, but twice, and wiped up the three other islands of Gea, Ninni and Bigej.

When they returned to the converted destroyer that served as their troop carrier at the end of the Kwajalein operation, they had killed 106 Japs, not counting probables, and taken three prisoners. Only two of their men were killed and 22 were wounded, none of them seriously.

## GEHK

The first part of the operation was easy. Their landing on the south beach of Gehk was unopposed, and they lay in the sand without even digging foxholes, just talking in whispers and waiting. As the sky grew light, just before sunrise, they started up the island, spread out like a fan, each man three feet from the next GI.

They had advanced 600 yards, halfway up the island, before Jap rifle fire started to sing out over their heads from a clump of thick undergrowth about 10 yards ahead. They threw themselves on the ground and opened up. . . .

After that the clump of bushes was silent, but the entire American line paused for at least five minutes to throw in a few hand grenades and a bazooka blast or two, and to pepper the area with rifle fire. When they moved into the bushes, they found four dead Japs and

two others still alive, lying a few feet away. The two Japs were evacuated.

By 1000 the job on Gehk was finished, and Captain Gritta's men trekked back cautiously to their landing beach, certain that there were no live Japs left on the island. In the lagoon they saw a large Jap tug, silent and apparently deserted, and next to it a small barge. Then Captain Gritta thought he saw a man move on the deck of the tug, but he couldn't be sure and it did not seem worth while finding out; he and his men had been ordered to proceed to Ninni.

But there was still time for one small formality. Captain Gritta . . . and Sergeant Martin stopped the men on the beach and raised the Stars and Stripes on a pole the Japs had thoughtfully rigged up on top of a ragged coconut palm. It was the first American flag to be flown in the Marshalls.

## NINNI

Then they climbed back into their rubber boats, paddled across the reef and made their second beach-head of the morning at Ninni. There were no Japs on this island at all, but the men discovered a freshly chopped pile of wood on the beach, a few boxes of small crisp Jap crackers and a confusion of fresh footprints on the faint, irregular path leading to a deserted lighthouse.

By 1600 a flag was flying on Ninni, and there was nothing more to do that night except bivouac on the beach. The next morning Captain Gritta and his men returned to their destroyer, where they had a hot meal, a bath and a shave, and cleaned their weapons. "It was a gentlemanly way to fight a war," said a squad leader.

## GEA

Meanwhile, on Gea Island, 56 men of the reconnaissance troop under 1st Lieutenant Emmett L. Tiner had landed at 0530 on D-Day.

Tiner's men made their beachhead just south of the pass leading into the lagoon. A few yards to the north, the lieutenant saw four Jap buildings—small frame structures with thatched roofs. At dawn a search of the



buildings disclosed they were deserted and had been used for storage.

Then the men started up the island, two platoons abreast. The first platoon advanced up the seaward side, along the edge of the thick coconut grove that ran through the 400-yard square islet. The second platoon pushed through the grove on a thin center trail. As expected, they encountered no signs of Japs for about 20 minutes.

Suddenly, a scout saw two close-set eyes staring at him through the underbrush. He fired his M1 twice, and a wounded pig ran squealing down the beach.

Not more than two minutes later Lieutenant Tiner, a few yards in advance, heard someone shout his name and Private Toomey leaped ahead toward the door of a one-story house. Just inside the door he could see a Jap marine lying on a straw mat, asleep or dead. Toomey fired twice and the marine was unquestionably dead.

Lieutenant Tiner and a rifle squad searched the house; they found no other Japs but discovered the remnants of stale food in the kitchen.

When they had scoured the seaward side and the center of Gea, the two platoons circled back on the lagoon beach. Corporal Riccio, a squad leader about 10 yards in front of his men, searched the thick tangles of undergrowth. Suddenly he shouted, "There they are, men—look out!" and threw two grenades. Both missed their mark, but his warning had saved the lives of the two scouts directly behind him.

Private Johnson (one of the scouts) threw himself on the ground and plugged one of the Japs in the underbrush. Then Sergeant Brink rushed ahead with his tommy gun and motioned to two privates to follow him with their two heavy machine guns.

They placed their guns in the fork of a tree and commenced firing. Brink "spotted" the Japs for them, and then, as they fired each burst, Brink would jump under the machine guns, fire his tommy and throw grenades. Once, just as he was about to hurl a grenade, he looked up at the foliage of a palm not five feet away. There in the shadow was a Jap drawing a bead on him with his .25-caliber. Brink let the Jap have an entire 30-round clip.

The whole battle in the underbrush lasted no more than 10 minutes, but when it was ended, 19 Japs were dead. After that there was no more resistance on Gea. It was only 1000.

#### GEHK AGAIN

Just following afternoon chow, soon after Lieutenant Tiner and his men returned to the ship, there was a report from the defense troops on Gehk that enemy small arms fire had been observed as they moved through on their way to Ninni. Two of their men had been killed.

So at 1700 1st Lieutenant Glenn P. Carr and his second platoon made the 7th Recon's second landing on Gehk, after a destroyer had peppered the beach area. They dug in for the night and heard only occasional distant rifle fire.

In the morning, the Japs kept quiet as the troops started up the island—about half of them making their second push up this same strip. As in the first landing, there was no enemy fire, and none came until they had gone almost 800 yards. Then they heard an indescribably eerie yell.

Almost at once the Japs, hidden in small freshly dug holes covered with undergrowth, let loose with everything they had. That was plenty—at least one Lewis gun, 60mm mortar shells thrown as grenades, regular hand grenades and rifle fire.

Corporal Krueger fired three bazooka shots into the Jap position. Meanwhile machine guns had moved up on every side and were firing at point-blank range. Lieutenant Carr and Private Larkin, a scout, crawled under the fire to hurl grenades. Carr threw five and Larkin three.

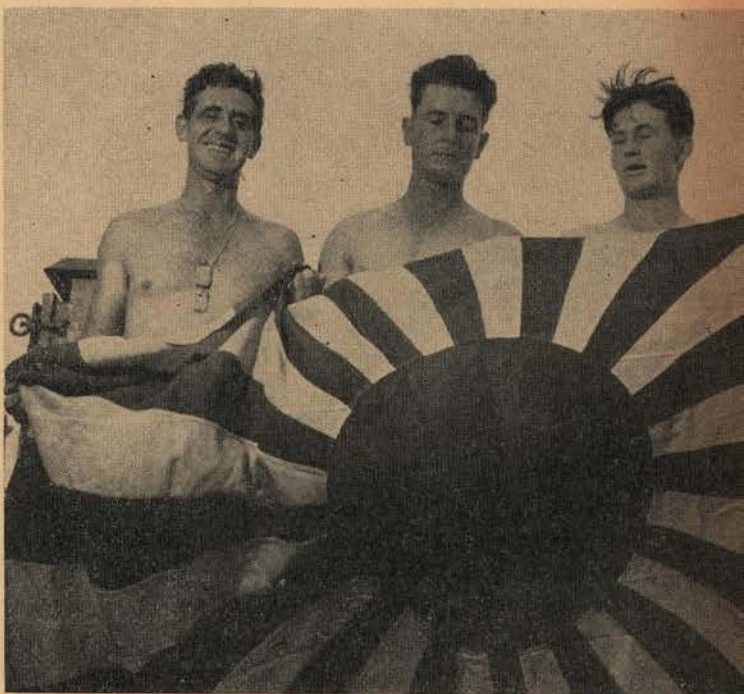
In 45 minutes—the hottest of the entire operation—the opposition had been wiped out. Sixty-five Jap sailors and marines were dead.

Before leaving the island, Captain Gritta and the first platoon boarded the Jap tug still in the lagoon, now flying a large ensign from its mast. There were 12 Jap dead below decks, all of them killed by the destroyer fire that had preceded the landing of Carr's platoon.

For the second time the 7th Reconnaissance Troop was ready for a bath, a shave and a rest.

#### BIGEJ

The outfit took its final island, Bigej, across the lagoon from the others, on D-plus-four. Bigej was a Jap supply and storage depot, and little opposition was ex-



Men of the 7th Reconnaissance Troop display the Jap flag which they replaced with the Stars and Stripes.



pected. As soon as the troops had shoved their rubber boats out to sea again, they moved into the edges of the bushes and waited for daybreak before starting forward.

Sergeant Graham, Sergeant Martin and Toomey made up the advance party. It was Toomey who saw the pillbox first—a good-sized one, deep, with concrete reinforcements backing up the concrete logs. "It looked like a potato cellar with a ventilator," Toomey said. Herrera, crawling up to the entrance, threw two grenades.

As the other men drew nearer, a Jap officer charged out of the door, waving his saber in the air. That was as far as he got; when his body was examined it was found to contain 52 slugs.

Lieutenant Tiner and Sergeant Rafford tried dropping grenades down the ventilator, but the grenades were too large. Then Tiner tied three concussion grenades to a stick, pulled the pin and pushed them down with the stick. But they wouldn't go either, and Tiner ran like hell—not enough to avoid a slight side wound.

The lieutenant and Rafford could hear shooting inside; they thought the Japs might be committing sui-

cide, but they couldn't be sure, so they started a fire in the entrance. It burned slowly at first but soon caught on. No one knows how many Japs died inside.

Up ahead, Graham, Toomey and Martin spotted a single line of Japs at the opposite side of a small clearing in the palm grove. Martin counted 15; the closest was hardly 10 yards away and walking toward him. Sergeant Pettey and Private Flaa moved up with their machine gun and opened fire.

Under cover of the fire, Graham and Toomey edged forward. Not four feet in front of him Toomey saw a Jap light machine gun. He could see that the Jap who had been manning it was dead now, with a bullet hole in his head. He crawled up and grabbed the gun. It was jammed.

Toomey cleared the jam, fiddled with the gun a minute or two to see how it worked and then ran off a sharp burst. In all he fired 25 rounds with the Jap gun and killed four Japs.

By that time medium tanks were on their way in, and infantry troops were moving up. For the first time in the Kwajalein operation, the 7th Reconnaissance Troop was brought to the rear. Its job was done.



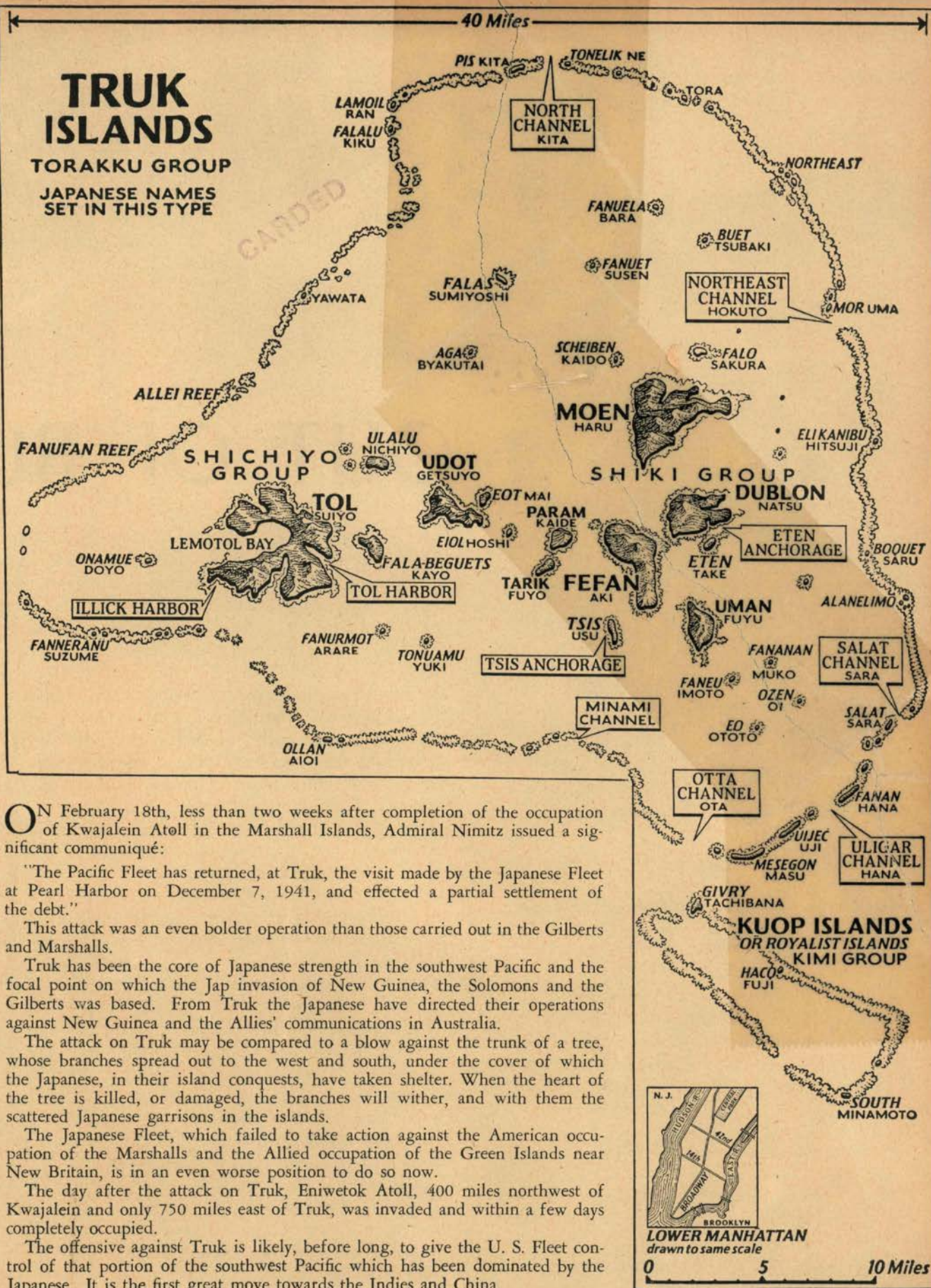
Zone 1 on the map embraces the area now back in Allied hands; Zone 2, the area the Japs are at present defending; Zone 3, the central defense area set up by the Jap military, its line anchored on vital Truk, and Zone 4, the inner area protecting the Japanese islands.



# TRUK ISLANDS

TORAKKU GROUP

JAPANESE NAMES  
SET IN THIS TYPE



ON February 18th, less than two weeks after completion of the occupation of Kwajalein Atoll in the Marshall Islands, Admiral Nimitz issued a significant communiqué:

"The Pacific Fleet has returned, at Truk, the visit made by the Japanese Fleet at Pearl Harbor on December 7, 1941, and effected a partial settlement of the debt."

This attack was an even bolder operation than those carried out in the Gilberts and Marshalls.

Truk has been the core of Japanese strength in the southwest Pacific and the focal point on which the Jap invasion of New Guinea, the Solomons and the Gilberts was based. From Truk the Japanese have directed their operations against New Guinea and the Allies' communications in Australia.

The attack on Truk may be compared to a blow against the trunk of a tree, whose branches spread out to the west and south, under the cover of which the Japanese, in their island conquests, have taken shelter. When the heart of the tree is killed, or damaged, the branches will wither, and with them the scattered Japanese garrisons in the islands.

The Japanese Fleet, which failed to take action against the American occupation of the Marshalls and the Allied occupation of the Green Islands near New Britain, is in an even worse position to do so now.

The day after the attack on Truk, Eniwetok Atoll, 400 miles northwest of Kwajalein and only 750 miles east of Truk, was invaded and within a few days completely occupied.

The offensive against Truk is likely, before long, to give the U. S. Fleet control of that portion of the southwest Pacific which has been dominated by the Japanese. It is the first great move towards the Indies and China.



LOWER MANHATTAN  
drawn to same scale

0 5 10 Miles

page 1/372, 706

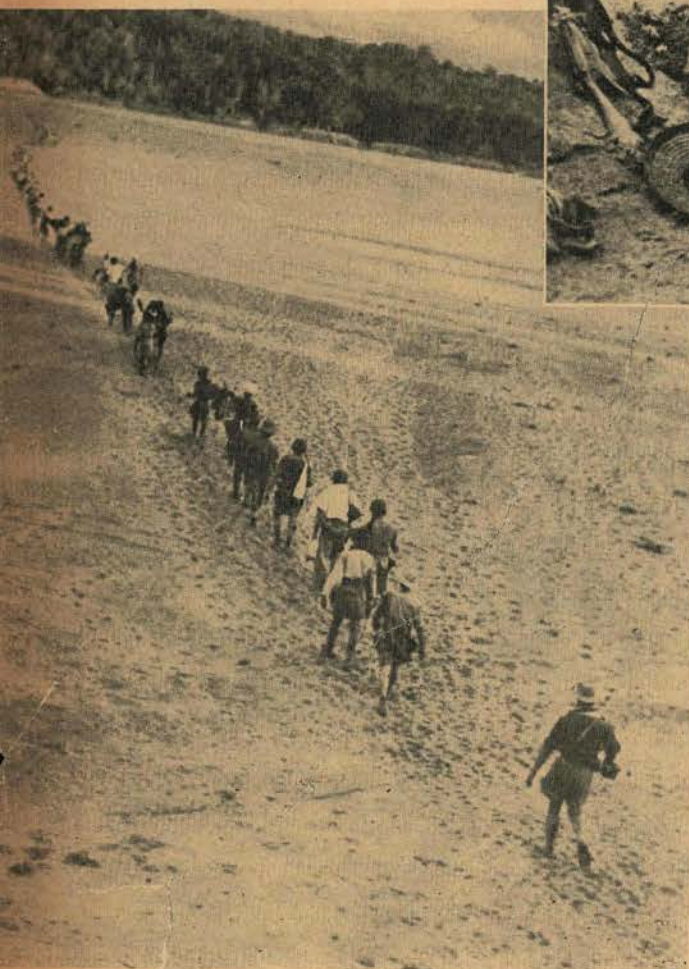


RIGHT—General Stilwell permitted ten minutes rest during each hour of the march, which averaged between 15 and 22 miles per day. The group is shown resting during one of these periods.

BELOW—General Stilwell's party reaches the Chindwin River and walks across the long stretch of sand leading to the river's edge.



Acme



Acme

by

*Major J. V. Davidson-Houston,  
M.B.E., R.E.*

AFTER the fall of Rangoon, Chiang Kai-shek sent his Fifth and Sixth Armies into Burma in order to operate on the left flank of the Burma Corps and to cover the famous road which was the only remaining land link between China and her allies. Each army consisted of three divisions, but a brief description is necessary in order to avoid giving a false idea of their strength. To begin with, the Chinese in Burma had no air component of their own, but relied on the R.A.F. for air co-operation. The divisions were weak in artillery. The heavier supporting weapons consisted mainly of mortars, with a rifle strength that varied from 2,000 to 3,000 per division. The proportion of light machine guns to rifles approximated British establishments. The Chinese Fifth

★Courtesy, Journal Royal United Services Institute, London.

## OUT OF BUR

Army comprised some of General Chiang's best trained and equipped troops, and was provided with a high proportion of motor transport; its rôle was to oppose the Japanese advancing north against the line of road Mandalay-Lashio. The Sixth Army was intended to cover the Chinese left and fulfil a primarily defensive rôle in the Shan hills opposite the Siamese frontier, where communications were poor and where a Japanese attack was not, unfortunately, expected. The Sixth Army was consequently inferior to the Fifth in the quality both of its personnel and equipment, and the whole of the Chinese expeditionary force was hardly equal to a single division in the modern sense.

Lieutenant-General Stilwell, Chief of the U.S. Military Mission to China and commander of American forces in that country and in India, was 59 years of age and had previously served as Military Attaché in Peking. On account of his military qualifications and his knowledge of the language, he had been selected by Chiang Kai-shek as adviser.

General Stilwell's position, and indeed the entire system of command, was somewhat nebulous. It was at first understood that Stilwell had been appointed commander-in-chief of the Chinese Expeditionary Force, acting under the orders of General Alexander who was in supreme command of the Burma theater. The Chinese General Lo Cho-ying, however, was subsequently designated C.-in-C., with Stilwell as chief military adviser. General Lo, theoretically subordinate to the British commander-in-chief, was able to communicate direct with Chiang Kai-shek, who had the last word as to the employment of the Chinese troops. The formulation and execution of any operational plans were thus liable to difficulties and delays.

In order to carry out his task, General Stilwell proceeded to Burma with an advanced echelon of his Mis-



## The Fifth and Sixth Chinese Armies in Burma

The Chinese were very chagrined that they had been unable to get to Hong Kong fast enough to help defend the British, and were determined to participate in the defense of Burma without counting any cost in men or money. Two of China's best armies, the Fifth and Sixth, were dispatched from the defense of the vital Burma Road down to the Burmese border.

Not until the main Burmese port of Rangoon had fallen, that is to say, not until the Japanese had opened up a free line of communications into Burma and had the situation well in hand, did the British decide to let the Chinese help them after all. It was then too late, but the Fifth and Sixth Route Armies moved into Burma and stayed there to the last man. Only the two replacement regiments in China remained of a fine, well-equipped fighting force. The army and divisional commanders and their staffs were definitely lost, together with most of the equipment. This caused bitter disappointment.

Survivors of the Fifth and Sixth Armies, instead of straggling back to China, remain active in guerilla warfare in Burma. They are abetted if not aided by the Burmese, who are not notable fighters and may have shown little grief at the passing of English rule, but who prefer the honesty of Chinese regular army troops to the rapacity and lawlessness of Japanese soldiers.

—"Hong Kong," *The Tank* (British).

# MA WITH STILWELL—1942

sion, and remained throughout in close touch with the Chinese G.H.Q. and with General Alexander.

On 20 April 1942, I flew from Chungking to Lashio and made contact with General Stilwell's transportation representatives at that railhead. Matériel was still being forwarded to China through Lashio and along the Burma Road, but the Rangoon terminus of this route had been lost and communications across the frontier were liable to interference from the air. The aircraft in which I travelled had perforce to fly low among the mountains to reduce the risk of hostile observation. It was at Lashio that I first encountered men of the Chinese Expeditionary Force, a detachment of line-of-communication troops, which added one more ingredient to the international mixture already existing in the cantonment. It was here, moreover, that I began to experience that uncomfortable sensation of operating in a country where the bulk of the population was apathetic, if not actually unfriendly. The outbreak of fire in a large wood-yard on the evening of my arrival was generally attributed to the fifth column.

By their policy of consistently bombing the native quarter of towns occupied by our forces, the Japanese succeeded in depriving us of practically all local labor and civilian assistance. In a tropical climate this added greatly to the difficulties alike of staffs, services and fighting troops.

It was also evident that the enemy was possessed of means of obtaining information which were denied to ourselves and which we were unable to deny him. This was partly due to his growing air superiority and partly to the thoroughness with which his Intelligence and subversive agencies had permeated the country over a number of years.

I left Lashio on the 21st in a car belonging to the U.S. Mission, and reached Maymyo the same evening.

There I found G.H.Q. Burma accommodated in huts in the cantonment, but preparations were being made to move them back to Shwebo, on the Mandalay-Myitkyina railway, and most of the administrative offices had already gone. General Stilwell and his staff had established themselves in the evacuated buildings of an American Christian mission, but on the day of my arrival the general was at the Advanced Headquarters in the village of Kyaukse, where I followed on the 24th.

Next morning a conference took place there between Generals Alexander, Lo Cho-ying and Stilwell, assisted by English-speaking Chinese officers and Chinese-speaking members of the American Mission. The differences in language and mentality, inevitable among Allies, were sufficiently pronounced in this Far Eastern theater to complicate and protract the conference. Resort was had to the technique of a preliminary exchange of views between Stilwell and the British C-in-C., fol-

Veteran forces of China's armies poured into Burma to help resist the invader.

European





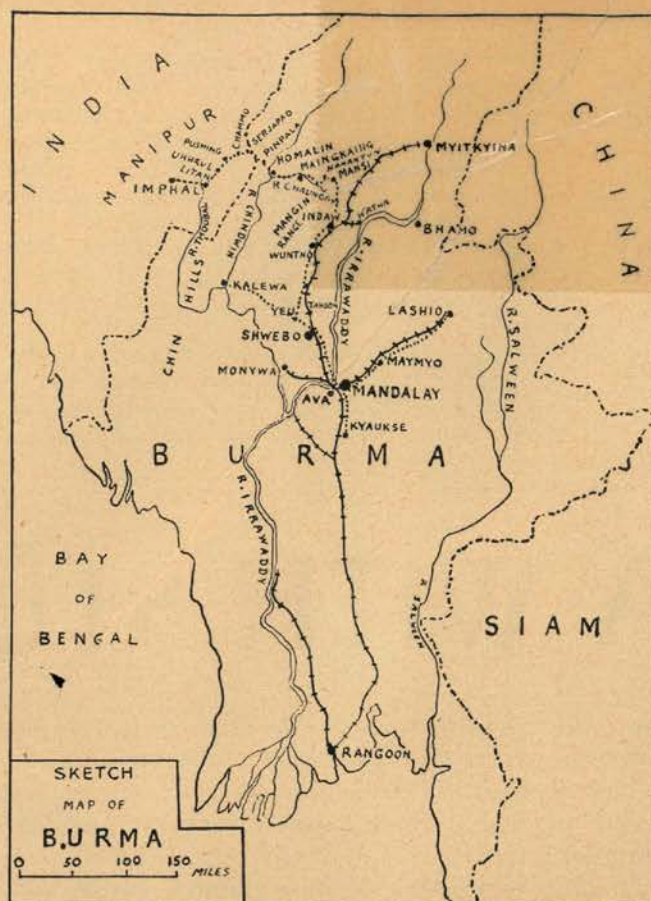
lowed by the presentation of their agreed conclusions to General Lo. The outcome of this meeting was the decision to execute a general withdrawal to a line running roughly east and west covering the bridge over the Irrawaddy near Mandalay. This involved a jump long enough (about 60 miles) to enable our forces, and especially the exhausted Burma Corps, to disengage and reorganize the defense.

News of this conference had probably reached the enemy through the usual channels, for Kyaukse was bombed shortly after its conclusion, fortunately without damage to Advanced Headquarters. Orders were immediately issued for the withdrawal, and at 4 A.M. the following morning I left Maymyo for Shwebo with the bulk of the American Mission. Passing Mandalay in darkness, the column of cars and lorries turned north over the Ava bridge and joined the main column of troops and transport crossing at this point to the north bank of the Irrawaddy. Unluckily the great steel road-rail bridge at Ava was the only available route over the river, and presented a dangerous defile which it was intended to pass before daylight. The structure had been prepared for demolition, but it was not possible to destroy the abutments owing to lack of engineer resources. A rearguard mainly composed of the 38th Chinese Division had been left on the south side, and it was therefore important that the bridge should remain intact until the whole of the force had crossed. Away to the right the water was lit up by the dying flames of Mandalay, and the sky above them was already growing lighter with the approaching dawn. The crossing was heavily congested with vehicles, and with men so exhausted that many of them seemed to be moving about in their sleep. It was consequently broad daylight before the troops were across, and the absence of air attack can only be ascribed to good fortune, since by this time the Japanese had almost complete air superiority.

At 7:30 A.M. we reached Shwebo, where G.H.Q. and Chinese Headquarters had established themselves in the numerous huts and bungalows which were well dispersed outside the town.

The Japanese soon applied their technique of scaring away the civil population and embarrassing the troops. The native quarter was set on fire and many of the roads through the town blocked by burning trees or buildings; the Burmese staff deserted the civil hospital and the unfortunate casualties were left without any treatment save what could be given them by military personnel and the ladies of the Headquarters cipher office. It was now plain that the Burma Corps, deprived by lack of communications both of supplies and reinforcements, would have to withdraw into India, and the evacuation by air of non-essential persons began. The few aircraft available for this purpose arrived and took off at uncertain intervals, usually preceded or followed by an air attack on the landing ground; the two operations never seemed to coincide.

On April 27th eight enemy aircraft bombed the area



occupied by one of the G.H.Q. Branches, and a few military casualties were caused. It had not been possible to arrange for air warnings, defensive air action or ground defense, although shelter trenches had been dug in some places. On the same day thirteen Japanese fighters machine gunned the town ineffectively from a height of 3,000 feet. On the 29th, G.H.Q. was attacked by twenty-one bombers with negligible effect. Next day a single reconnaissance machine, emboldened by the absence of opposition, flew low over the lines and was received with a burst of fire from some light AA guns which had just been brought up.

This display of resistance, however, was a swan song so far as Shwebo was concerned, for by the evening of the 30th G.H.Q. had moved westward to Ye-u in order to keep in touch with the two exhausted divisions of the Burma Corps which were retiring in the general direction of Kalewa. This town, situated on the west bank of the Chindwin, was the terminus of a motorable road originally conceived as an overland link with India but completed only just in time to facilitate the withdrawal of forces from Burma.

Chinese Headquarters were to retire up the railway towards Myitkyina, so that they could remain in touch both with the Chinese divisions and with China itself. Owing to the insufficiency of rolling stock and railway personnel, there was considerable congestion on the line, and accidents often occurred due to the breakdown of the signal system. An unsatisfactory feature



was the existence of divided control of rail movement. Although this was in theory coördinated by the Movement Control Staff of G.H.Q. acting through its local representatives and the Transportation Directorate, the transportation chief of the Chinese forces gradually assumed control of the railway and dealt direct with the civil management. This was inevitable, as the British and Chinese routes diverged, but the difference between their ideas on rail movements frequently led to misunderstanding and difficulties.

The combatant echelon of the Stilwell Mission, wishing to retain its mobility as long as possible, moved off in its motor transport; but as there was no recognized motor road to Myitkyina, it went first to General Alexander to Ye-u, hoping to travel parallel with the railway by any passable routes that might be found. Major Dykes and I secured a goods van on General Lo's train, which was due to leave Shwebo on the night of April 30th, but a collision of two other trains just north of the station delayed our departure for the whole of the following day. During this time a uniformed gang composed of enlisted Chinese railway employees succeeded in throwing the locomotives off the line, repairing the track, and clearing it for traffic.

The enemy were, as usual, well informed of our movements, for at 10 A.M. on 1st May twenty-seven aircraft, kept at a moderate height by light AA fire, passed over Shwebo and dropped bombs on Ye-u. On the same day the 38th Chinese Division began to retire across the Irrawaddy, and its commander arrived at Shwebo in the evening to secure what rolling stock he could. The Ava bridge was successfully demolished on the night of May 1st, but the Japanese attempted to turn the western flank by attacking at Monywa on the Chindwin and, although they were on that occasion repulsed, the approach of stronger enemy forces left the Burma Corps no option but to make for Kalewa.

Lo Cho-ying's train eventually left at 3 A.M. on May 2nd. Movement was retarded by the absence of signals and the necessity for caution on sections of line recently relaid over bomb craters. On reaching Tagon the alarm was given by an air sentry on the train, which was halted and evacuated. Half a dozen bombs fell several hundred yards from the track, and our progress was resumed. Constant alarms began to react on morale, and the train was frequently stopped and deserted for no apparent reason. At many points we passed heaps of abandoned equipment and dumps destroyed by air action, testifying to the impossibility of moving matériel with the inadequate means at our disposal.

On the day after our departure we reached Wuntho, where we remained until evening. The place was a village of wooden houses surrounded by low tree-covered hills, and here contact was made between Lo Cho-ying and General Stilwell, who had succeeded in getting through with his trucks and cars. Having passed out of the Dry Belt into wooded country, our train continued its journey in thick forest, while the Americans pro-

ceeded by motor transport. The discipline maintained by the Chinese commander on the train was sufficiently strict to result in the summary execution by shooting of several soldiers, who were quietly taken into thickets beside the line and disposed of.

The Anglo-Indian engine drivers were deserving of the highest praise. Piloting their trains for long, uncertain hours under conditions of discomfort and personal danger, without signals or knowledge of traffic conditions ahead of them, they were often urged by the Chinese military to do the impossible. It is small wonder that some of them did not survive the campaign.

On the afternoon of the 4th we reached Indaw, where a collection of Government bungalows stood in a large clearing, with low hills and jungle on either side. At this point we regained touch with the Stilwell Mission and received reports which added considerably to the difficulties of command and of movement. The Japanese were advancing into Upper Burma by every available road, and one of their formations had succeeded in breaking through the Chinese Sixth Army. They had captured the Lashio railhead, and menaced not only our left flank but the riverhead at Bhamo and all land communication between Burma and China. Moreover, further northward, movement by rail had come to a standstill, owing to an accident which threatened to block the track indefinitely.

It was fortunate that the enemy air forces failed to take advantage of the defenseless target presented to them at Indaw, but it was evident that the two weak Chinese divisions retiring behind us up the line would be unable to organize another defensive position, and General Lo decided to withdraw into India with all the troops he could muster.

General Stilwell now considered that his only course was to make for India as soon as possible and to return to Chungking eventually by air. On the afternoon of May 5th, therefore, the U. S. Mission set off in its motor transport along a rough road which led northwards to Mansi. In addition to the American officers and enlisted

Soldiers and Burmese nurses crossed the Chindwin River in dugouts.

Acma





men, the column was joined by several small parties of a heterogeneous nature, and its final composition was approximately as follows:

- 19 British, including personnel of G.H.Q., Anglo-Indian civilians, etc.
- 40 Americans, including General Stilwell and Major-General Sibert.
- 31 members of Major Segrave's and the Friends' ambulances, including a number of Burmese nurses.
- 12 Chinese officers and men, including Major-General Tseng, a liaison officer with the Mission.
- 15 mechanics and followers, including the Mission's Madrassi mess servants.

The party, travelling in seven lorries and twelve Jeeps, moved under cover of the tall forest trees and crossed a number of small rivers. The cars were able to negotiate most of these crossings by means of the existing wooden bridges, the heavier vehicles by fording. In the majority of cases the lorries experienced no difficulty, as the bottoms were usually firm and sandy, but when one of them stuck, a Jeep was used to pull it out. We overtook parties of Indian refugees, police, Frontier Force and officials, most of them moving on foot and endeavoring to live as far as possible on the country. General Lo and the 38th Chinese Division were marching by the same route behind us.

Climbing the Mangin Range, we reached Mansi on the following day, but local information revealed that there was no motorable route thence towards the frontier. The lorries were therefore abandoned. A minimum quantity of kit and a maximum of rations were piled on the jeeps and sent ten miles farther by a woodland path to Nanantun, on a tributary of the Chaunggyi. We camped outside the village and a final message was sent to New Delhi, by means of the portable wireless set, to the effect that the Stilwell Mission was making for India and would be out of touch with civilization until further notice. The wireless set was then broken up.

With the help of a missionary and a Burma forest officer who were travelling with the party, we hired sixty Shan porters and twelve mules and ponies. A few days' supply of rice was obtained, and tea, sugar and a reserve of tinned food were also carried. Practically every man had a pistol, rifle or Tommy-gun, together with his water-bottle and haversack; in addition it was possible to load a few blankets and extra kit upon the transport. The column had to be as mobile as possible in order to pass the Chindwin before the enemy, who had already attacked the Burma Corps at Monywa, could block our route by pushing up a small force by land or water.

Preceded by a native guide the column moved in single file along the bed of the Chaunggyi. At this time of year the river is shallow, with a sandy bottom. It winds between steep wooded slopes, and the path con-

tinually crosses and recrosses the stream. The weather was hot, but there was no shortage of pure water for drinking and bathing, and the American medical officers carried iodine tablets for sterilizing water-bottles. In spite of the fact that the daily ration comprised little more than 1 lb. of boiled rice, and that it was necessary to spend nearly every night in the open, the health of the party was good. Mosquitoes were not as numerous as in the monsoon season, and many of us had retained our mosquito nets. Only two cases of malaria occurred during the march, though of course others may have developed afterwards. There was one case of amoebic dysentery and two of heat-stroke, but the most generally troublesome afflictions were foot ailments and the attacks of leeches, which attached themselves to the legs while one passed through long grass or water. In spite of these conditions, however, every member of the party completed the journey alive.

The Burmese-speaking missionary was invaluable in dealing with the porters, who would not travel far from their homes and had to be changed frequently. Shans, little people whose load was only 40 lb., came with us as far as the Chindwin; beyond that we were accompanied by the more stalwart tribesmen of the Chin hills, who could carry 80 lb. without difficulty.

A Japanese reconnaissance aircraft passed over us on May 8th, but the cover provided by the jungle prevented our being discovered. Next day we left the river and cut across some low hills and a cultivated plain to Maingkaing, lower down the Chaunggyi. With the help of native experts we made rafts out of bamboo mats, provided with palm-leaf shelters which proved effective against both sun and rain. A small raft went ahead with the "advanced guard," while the remainder were carried on four long rafts, each formed of three smaller ones lashed together. Flowing between flat tree-lined banks, the river was here wide and shallow, and navigation was rendered difficult by shoals.

The day after leaving Maingkaing we were visited by a British bomber, which dropped supplies of tinned meat and cigarettes on the river bank. These were eagerly collected by ourselves, refugees and the local villagers, but the quantity that could be carried was of course limited by the meager facilities available.

Three days' poling down river brought us to Homalin, a large village and cantonment near the junction of the Chaunggyi and Chindwin, and on the 13th the whole party crossed the Chindwin in small native boats and dugouts; animals were swum across by their drivers. There was no interference from the enemy, who had been checked by the Burma Corps below the Kalewa crossing, and the column pushed on up the steep jungle-clad slopes that rose from the far bank.

From now on we were in the Chin Hills, a thickly wooded area with peaks rising to 10,000 feet, and several passes at 6,000. Some discomfort was caused by the beginning of the light rains which precede the monsoon, and which necessitated passing the relatively cold



nights in wet tropical clothing; the steep mountain tracks also tried the endurance of those who had become used to mechanical transport or office chairs. Our Shan porters were changed for Kuki, who throughout the day cheerfully climbed the hills by the steepest routes while carrying loads of 60 to 80 lbs.

Following a track through the hamlet of Pinpala, we were met on the 14th by the Assistant Political Agent of Manipur State, who had been sent to make contact with and assist the Stilwell Mission. Our march thereupon became progressively easier. Passing through the Naga country, we crossed a 6,500-foot ridge which separates Burma from India and followed the route Serjapao-Chammu-Pushing to the Manipur hill station of Ukhrul, garrisoned by a detachment of Gurkhas. On this section, grass huts had been built at daily stages for the reception of refugees, and were eagerly made use of by our party.

On May 19th the hamlet of Litan was reached. This

place, situated on the east bank of the Thoubal, is connected with Ukhrul by a road fit for animal transport, but on the opposite side was the terminus of an earth motor-road to Imphal, the capital of Manipur. The monsoon, breaking on the day of our arrival, turned this road into a rutted strip of mud, so that the motor transport which had been sent to meet us on the following morning took six hours to cover the twenty-four miles to Imphal.

The lessons to be derived from the Burma campaign of 1942 can hardly be examined in detail within the compass of this personal narrative, but one fact emerges very strongly. Land communications between India and Burma were inadequate for the maintenance of our defensive forces in the latter country and, conversely, would not of themselves enable a strong Japanese force to invade India. The fall of Rangoon made our withdrawal inevitable, and the reoccupation or neutralization of Rangoon is an essential to reconquest.

## Stilwell's Army Returns to Burma—1944

New Delhi, March 11, 1944 (AP).—Lieut. Gen. Joseph W. Stilwell, bubbling with enthusiasm, predicted today "the entire Hukwang Valley will soon be ours" as columns of tanks manned by Chinese and American soldiers cut a wide swath through Japanese ranks in that northern Burma sector and killed 500 to 700 of the enemy.

"The fight for Manigkwan and Wallawbrum is won, and only isolated mopping-up operations remain," General Stilwell said. "I believe we have killed 2000 Japanese in this operation alone, which should be good news in any language except Japanese.

"Military elements of two Chinese divisions, a unit of tanks, operated by Chinese and commanded by an American, and American combat troops worked smoothly together in the happy job of exterminating the common enemy.

"Although I have often been wrong, I am willing to hazard a guess that the entire Hukwang Valley will soon be ours."

Stilwell's press bulletin today was the first mention permissible that tanks had plowed into the bands of fleeing Japanese already badly upset by the sudden appearance of American soldiers far in their rear and opened the way to pour more supplies into China.

The tanks were accompanied by bulldozers which themselves carried machine guns so they could blaze away at the enemy even while chewing through the bamboo thickets.

Added to Stilwell's statement was a press note summary of the results of operations in the Hukwang Valley during the last few days.

"Of 2000 Japanese estimated to have been killed, 800 were credited to the American infantry force

headed by Brigadier General Frank Merrill while a tank column under Colonel Rothwell H. Brown wiped out about 500 and the remaining 700 enemy dead were accounted for by the Chinese Twenty-second Division and the Thirty-eighth Division," it said.

Other fronts, meanwhile, are becoming increasingly active. A communiqué from Admiral Lord Louis Mountbatten's command said British troops had advanced on the coastal plain South of Maungdaw and into the foothills leading toward Akyab.



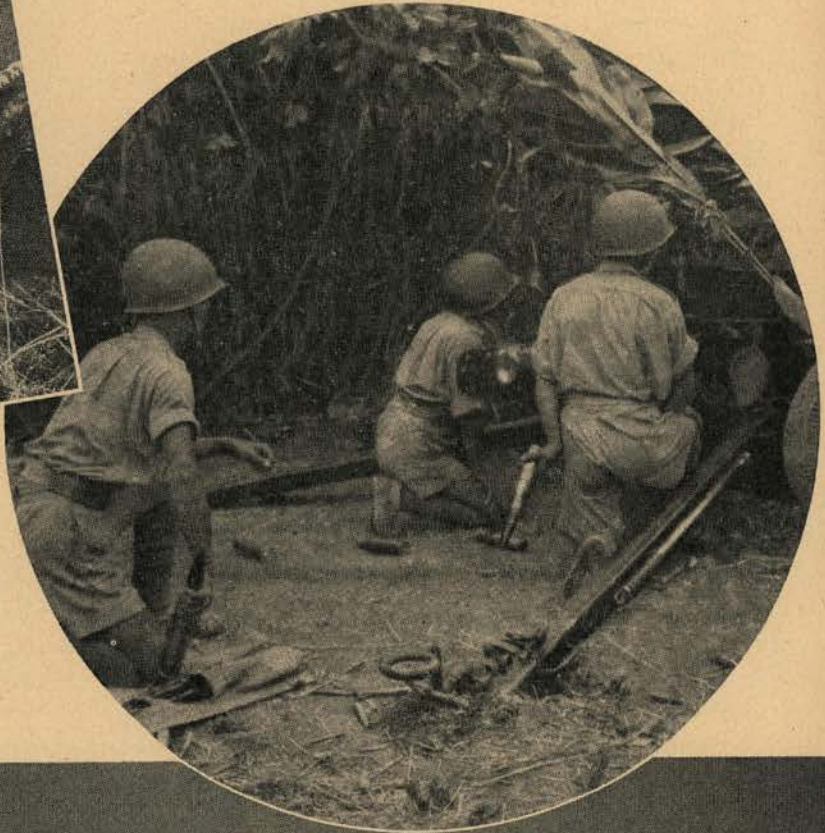


# Our Chinese Ally in Burma

*Below: An American-trained Chinese gun crew mans an antitank gun near the Northern Burma frontier.*



*Above: Using American weapons, this unit of Chinese mountain artillery trains for action in the difficult terrain of Northern Burma.*



*Below: Under a U. S. Army instructor, Chinese soldiers learn to pack and transport modern weapons. Note Phillips pack saddles.*







*Above:* Using American jeeps, these Chinese troops move along a jungle road in the Naga Hills section of North Burma.

*Right:* An American trained Chinese Army infantryman prepares a junji pit—split bamboo—sharpened and stuck in the bottom of a pit, which is then covered over with natural camouflage—a ready trap for the Japanese in Jungle fighting. The scene is near the Northern Burma front.



*Right:* Given air cover by an American made P-40, Chinese Infantrymen, wearing American helmets, slog along an American built road in the China-Burma-India theater of operations.





# Editorial Comment

## The "Ace in the Hole"

There is no doubt that Marshal Stalin would make an excellent poker player. It cannot be denied that he holds good cards; in fact, he usually holds five aces—air, tanks, infantry, artillery, and cavalry.

Converting this idea to terms of military strategy, it is rapidly becoming apparent that every time Von Mannstein "calls" the hand, Stalin comes up with "aces back to back."

Stalin's fifth ace seems to have been his big force of cavalry—for the Nazis lose every time he turns it face up. That fifth ace may not be legitimate in a poker game, nor popular in all armies—but note who is winning the "pot"!

1 1 1

## From Radio and Press—

Raymond G. Swing, March 13th:

Moscow dispatches said that the entire German position in the Ukraine is crumbling, and that the Nazis in withdrawing are abandoning arms and equipment in the celebrated Ukrainian mud. Why mud should turn out to be a help to the Russians is explained by a quite old-fashioned word—cavalry. The German army, not old-fashioned, is mud-bound. The Russians have not given up cavalry, and many of their victories are to be attributed to the reconnaissance of cavalry and to cavalry raids deep in the enemy's rear. That must not detract from the valor of the Russian infantry, which has shown remarkable stamina in trudging through mud on foot, often carrying machine guns, or to the aid of the Russian guerillas behind the German lines. *But cavalry, using the cover of woodlands, has been an advantage that the Germans have not been able to match.*

Drew Pearson, March 12th:

Once again I and the military experts were wrong about Russia. Last week I said that the Red Army would have to slow up because of mud. However, they are ploughing ahead in a miracle advance in the Ukraine—right through the mud—Cossack cavalry taking the place of tanks. This Ukrainian advance is one of the most important of the war, because it is getting down close to the Roumanian border. It was revolution in the Balkans that ended the last war. You can expect revolution in Roumania and Bulgaria any minute.

Colonel V. Krautsov in Moscow:

On other sectors of the front the cavalry has found extensive application. Much more mobile under given conditions than the infantry, it enters a breach after the tanks, consolidates their success and holds



from The Louisville Times  
Making a Mudder of him.

the captured terrain until the arrival of advanced infantry columns—as was the case in the encirclement of the Korsun-Shevchenkivskyi grouping of Germans, and in the Rovno direction.

1 1 1

## Stalin's Wardrobe for a Mild Winter

In Russia, where the temperature frequently reaches 30 to 40 degrees below zero (centigrade) and snowstorms last for days, winter operations are never easy to conduct. The Red Army, however, has been able to adapt its soldiers and matériel to these conditions. This year the late and milder winter, with its accompanying rain, brought the Russian Army unanticipated difficulties even more serious.

A large portion of the fighting in this winter's campaign has been in swampy and wooded terrain, with probably only one-third of the front in open country.

With the temperature rarely dropping under five degrees below zero (centigrade) and alternating with frequent thaws, the rivers and lakes have been covered with only a thin layer of ice. When hidden by snow, this has become at every step a trap for the advancing Russian units. Even more dangerous have been the snow-covered swamps, where an incautious step away from the road may send a man crashing through a thin layer of ice into quicksand. Water from melting snows



has saturated the earth; the roads, particularly in the lowlands, have become a gummy mass of mud and snow in which carts and motor vehicles have been mired.

Despite all of these difficulties of terrain and weather, the Red Army has continued its offensive and moved steadily westward.

How has the Red Army been able to adapt its operations to these unexpected conditions? The answer to that question goes back some fifteen or twenty years. General Gorodovakov explained it in detail in his exclusive article in *THE CAVALRY JOURNAL* of July-August, 1942. Suffice it is to say briefly that when the Blitzkrieg was "tops" in the world's military fashions, the Soviet strategists continued to maintain a balanced wardrobe suitable for wear under all kinds and conditions of weather and terrain. More than that, they proved quite definitely that the Blitzkrieg alone has become outmoded. In all wars, weather, and its effect on terrain, has always taken a big toll in time consumed and time has ever been a vital factor in battle. In many theaters of war, weather has slowed up or completely stopped a campaign, but recent reports indicate that Stalin has the necessary elements, trained and on hand, not only to combat the weather and terrain but to cause Von Mannstein to lose both ground and personnel.

Many of the ether strategists had the Red Army stopped cold "as soon as the spring thaws and rains would start," but the current Red Army successes conclusively belie that prediction.

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### Where Is the Japanese Fleet?

The capture of the Momote airfield in the Admiralty Islands by an amphibious force (1st Cavalry Division) of General MacArthur's Southwest Pacific Command has outflanked—and, to a great extent, isolated—the Japanese garrisons in New Ireland, New Britain and the Solomons.

This move is characteristic of General MacArthur's operations, which have been effected by brilliant strategy and with the minimum loss of American lives. It is described as "the final phase of the great swing move pivoting on New Guinea."

The communiqué states that, in addition to the troops "trapped" in the Solomons, some 50,000 of the enemy, largely in New Britain and Rabaul, are now enclosed.

It is difficult to see how this large force can be supplied; and it is impossible for it to be evacuated with all its equipment unless the Japanese Fleet is prepared to fight for the reopening of the sea lanes.

The question of where the Japanese Fleet is thus comes again to the fore. Last Sunday, the Tokyo radio asserted that the reason the Japanese had avoided battle with the U. S. Pacific Fleet was that it wanted to disappoint and baffle America's "Amateur strategists."

This is obviously a face-saving explanation. The

real truth is that the Japanese believe that it is better to keep a "fleet-in-being" rather than risk it in action.

Accumulated experience, however, has given little support to the "fleet-in-being" theory. In the last war, the Germans kept their fleet in port only to have the crews finally mutiny and the ships ignominiously handed over intact at the time of the armistice.

The Italian navy in the present war was bluffed by Admiral Cunningham's very weak force in the Mediterranean, and remained inactive, finally to be surrendered to the British.

The whereabouts of the Japanese fleet is doubtful, but it is certainly not resisting the very active attack being carried out by the U. S. Fleet in the Central Pacific, and its morale is bound to suffer in consequence.

—BRIGADIER GENERAL HORACE SEWELL.

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### Mailing Addresses

Before any recent issue of *THE CAVALRY JOURNAL* has gone into the mails, hundreds of envelopes have had to be readdressed by hand because the subscriber's organization had moved.

If your envelope was one of these, and if the address was changed correctly, you need not worry any more about it, as these changes will be made automatically in our files. (Don't depend on this procedure each time you move, as we may not know about it in time to change the envelope.)

If your organization moved, however, and you did not go with it, and if you failed to send us a personal correction in the designation of your new unit, the chances are that your *CAVALRY JOURNAL* will follow the organization. In the absence of a personal notice, there was nothing else for us to do. Please notify us if you change organizations!

Another problem concerns those subscribers who are in organizations that have been redesignated recently. The chances are that the unit is still at the same post, and copies of *THE CAVALRY JOURNAL* are being delivered to individuals regardless of the new name of the unit. But in order to insure delivery when your new organization moves, won't you send us your correct address *now*?

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Back issues particularly desired are:

January-February, 1941	May-June, 1942
March-April, 1941	July-August, 1942.
March-April, 1942	



# General Hawkins' Notes

## An Appreciation of Nicholas Corotneff's Article

AN article by Nicholas Corotneff entitled "The Tank-Cavalry Team," which appeared in THE CAVALRY JOURNAL issue for January-February, 1944, is one of the most interesting studies on the subject of cavalry that has appeared in the JOURNAL or elsewhere in recent years. It is recommended for careful reading and study. It contains some irrefutable statements of fact and principle that should not escape the attention of those who may guide our military doctrine for the future.

Perhaps I attach so much importance to this article because it reflects my own opinions so clearly and in such well written language. But the undeniable facts, so well stated, are so important that they should be widely known.

A summary of some of these facts are here presented for emphasis and future reference after reading the whole article. The article, however, contains so much meat in every sentence that it is difficult to summarize satisfactorily; and this summary should not be substituted for the reading and study of the article in full.

The author does not attempt to cover the whole subject of *cavalry* or its whole employment and training therefor. It is principally concerned with the *tank-cavalry team*, now so well established and recognized in the Russian army.

### SUMMARY OF COROTNEFF ARTICLE

1. Combinations of tanks with cavalry are now recognized as independent formations of great importance.

2. The famous tank-dive bomber team has become decadent during campaigns of 1943.

3. The old idea that the best antitank weapon is a tank is disproved. The best solution lies in the use of antitank troops and the infantry-artillery team. The best use of tanks is in administering the *coup de grace* to the exhausted attacker.

4. The latest exploits of the tank-cavalry combat team prove that it is here to stay and has great potentialities for the future.

5. Tactics of cavalry should be based on depth, space and disregard of rigid formations. They should be opportunistic, shifty, fluid and based on decentralized conduct of combat and a high degree of individual initiative. The Russian *Lava* tactics embrace all of these principles.

6. One of the stratagems of the old *Lava* cavalry tactics—in which swarms of horsemen, retreating in front of the attacking enemy on divergent lines, uncovered the support and then turned about to envelop

and attack both flanks of the enemy, while the support made a surprise attack in front—presented a tactical method frequently employed later by large tank formations.

7. The German tank tactics, borrowed from the old *Lava* cavalry tactics, have two tendencies. The first is to draw hostile tanks into ambush. On a certain section of their front, behind the lines, they mass a great force of artillery, mostly antitank guns. They try to lead the hostile tanks into the trap by using small detachments of their tanks to fake a retreat on divergent lines, or sometimes the whole detachment retreats in one body in a direction to draw the pursuing hostile tanks into an area where they come under concentrated fire of the guns in the ambush. The second idea is the same as the first except that the retreating detachments of tanks turn about and envelop the hostile flanks, while the artillery and antitank guns are punishing the enemy from the front.

8. In the First World War, the reason that cavalry in Europe played a less conspicuous part than it had done formerly was that cavalry fell behind other branches in fire power. Whatever fire power cavalry had was almost exclusively used in dismounted action. To make the old tactics click again, a new combination of fire and movement was needed. That did not appear until the Russian Civil War of 1918-1920, when machine guns mounted on carts and ready for instant action, appeared in the cavalry ranks and started the rejuvenation of *Lava*. These machine guns in the cavalry ranks also paved the way for the later inclusion of armored tank elements, and thus constituted practically a preview of the tank-cavalry tactics as prominent recently.

9. The lessons from the American Civil War were taken to heart by the Russian cavalry. The *Raids*, conducted by the American cavalry, belittled by European military writers, and indeed by subsequent American military writers, made a great impression on the Russians who were inspired by these examples to consider that Raids made by large cavalry forces could be of very great strategic importance.

10. In the operations around Stalingrad which resulted in the destruction of the German Sixth Army, both flanks of the German Army were enveloped and attacked with unqualified and decisive success by tank-cavalry teams. The main striking force on one flank was composed of three tank corps and two cavalry corps. The similar force on the other flank consisted of two tank corps and one cavalry corps. In one action



along a line of lakes, infantry, leading the attack between the lakes, was followed by tanks closely followed by cavalry.

In the early Russian accounts of these battles, cavalry was hardly mentioned because the Russians did not want to disclose to the Germans the tactics of the tank-cavalry teams.

The Germans began to show a lively interest in these teams and attempted to follow suit, but with only partial success because, having suppressed almost all of their former cavalry divisions, they did not have enough for any extensive operations of this kind.

11. Although Russian cavalry was used extensively in the year 1941 and helped fight the great delaying actions of that year, it was not until the campaign of 1942 that, after much experimentation, the tank-cavalry combat team was recognized as an essential mobile fighting force of much power and as having great potentialities for the future.

To quote from Corotneff's article: "For the first time, independent tank and cavalry formations were welded into one unified striking force, which replaced the motorized infantry.

"More than a year has passed since its birth, and in the course of this time the new tactical combination again and again has proved its remarkable efficiency and striking power under various sets of conditions. At its initial appearance, opinion was advanced that it might be only a seasonal combination, necessitated by the conditions of the Russian winter. After the latest exploits of the tank-cavalry team at Taganrog, Mariapol, and on the approaches to the Crimea, this impression has been dispelled as completely as the legend of the Russian incapacity for a summer offensive."

As indicated before, the author of these statements does not mean to say that the only usefulness of cavalry is found in a tank-cavalry team. The Russian cavalry has been used successfully in many other ways during the last three years. In view of the exploits of the Russian cavalry, one wonders why American cavalry has apparently been suppressed instead of increased since the year 1940. During the maneuvers of about that time our cavalry took part. It is not known whether it made a favorable impression. But it may be remarked that if the Russian cavalry, with all of its experience, great successes and exploits in this war, had been operating in those American maneuvers it would have made no favorable impression, because the maneuvers were started in such a manner and conducted in such a way that cavalry was given no proper missions and had no opportunity to show its real value.

The most serious mistake in regard to the use of cavalry is to expect it to compete in strategic marching with mechanized or motorized troops. Cavalry has its limitations and should be used only for those tasks for which it is fitted. Cavalry mobility in comparison with mechanized troops is tactical, not strategic. Stra-

tegical mobility may be attained by the use of railroads when they are available. But railroads can seldom be used for tactical mobility.

Tactical movements are generally made across country rather than on roads. Cavalry is more mobile across country than other troops. Even so, cavalry should not be expected to march for distances beyond its normal capacity if its strength is to be conserved for subsequent operations.

The fact that armored forces are making wide detours of many miles in one day should not induce army commanders to expect the same of their cavalry. Nor should long and wide movements of the enemy mechanized forces worry commanders into using their cavalry troops in an extravagant way. Forced marches are sometimes required of both infantry and cavalry, but a wise commander is not going to wear out his troops for some possible or fancied strategic advantage.

A commander must use his various kinds of troops within their powers and limitations if he hopes eventually to win a tactical victory.

In past maneuvers, cavalry troops have been required to march fifty miles a day for several days; and in one case, ninety miles in one day. Then they were expected to resume their mobile operations the next day. In other words, cavalry was forced to compete with its own and the enemy's mechanized forces in *strategic* mobility.

When contact with the enemy may be expected in a short time, all strategic or even tactical movement of fast-moving mechanized forces must be slowed down in the interest of reasonable caution and security. It is here that cavalry with its cross-country mobility for comparatively short distances becomes so useful. Therefore, even if the army troops or its mechanized forces have been moving on roads faster than cavalry can march, means should have been provided to bring the cavalry up, by railroad or motor vehicles, before tactical operations are begun. Usually, no offensive operations should be begun until the cavalry is available, for it is the tactical and battlefield mobility of the cavalry that is desired.\*

Russian cavalry mobility has been so used that it is sufficient for combination with tanks for tactical, and sometimes even strategic, operations in the now famous tank-cavalry teams.

To those who are willing to be convinced of what cavalry can do, and what the Russian cavalry has done and is doing, but who cannot see *how* cavalry does these things, only a few brief explanations can be given in a short article of this kind.

Cavalry does not charge its horses into tanks, but it sometimes makes mounted attacks against crews of

\*EDITOR'S NOTE: In the article, "Beyond the Jeep Line in Italy," January-February CAVALRY JOURNAL, it is noted that 385 head of animals were landed at Salerno and portéed by truck fifty miles to the front. "Along the mountainous Fifth Army front in Italy, where men deal with realities, not theory" the strength of the improvised cavalry was conserved for its proper employment where its greater tactical mobility would be of most value.



injured tanks who have jumped out. Mounted cavalry has sometimes charged in company with friendly tanks against enemy tank formations; in which case, while its friendly tanks are blasting the enemy tanks in close-up combat the cavalymen hurl grenades or incendiary bombs in the path of the enemy tanks, or shoot into the peep holes, and attack the crews escaping from burning tanks. Cavalry, when operating alone against armored forces, will generally do so with many independent commands not larger than squadrons.

Usually the mounted cavalymen follow closely their friendly tanks, and at the proper moment they leap from their horses and engage the enemy tanks with antitank guns like the Bazookas, or .50 caliber machine guns or 37mm guns taken from pack horses. With this fire power, cavalry can harass and delay enemy armored forces by moving across country and attacking the enemy columns in flank. In this case, cavalry does not usually close with the enemy but remains within range of its guns so that it can fire at the moving tanks and their supporting vehicles from various positions. Always seeking to attack by surprise, first here, then there, and shifting their positions so that the enemy can never close with them, cavalry appears suddenly in front, in rear, or on the flanks. Its antitank guns can knock out a tank here or there and block the roads, cause delay and worry in various ways.

Cavalry does not charge up to enemy machine guns unless by surprise or while catching the enemy machine gun units in retreat. If the cavalry supporting fire, such as their own machine guns, artillery and antitank guns, is knocking the enemy machine guns and crews out of their nests or concrete emplacement, the cavalry can and does attack mounted. Otherwise, if the ground affords cover for advancing riflemen, the cavalry attacks dismounted like infantry with, of course, as much supporting fire as possible.

Cavalry defends itself against airplane attack principally by immediate and quick dispersion, and concealment or camouflage when in bivouac.

Cavalry makes many harassing attacks against the flanks of enemy marching columns. It does this by moving across country under cover or at night, and dismounting to use its numerous fire weapons at moderate ranges. If the enemy turns superior forces to attack such cavalry, then the cavalry withdraws in directions inconvenient for the enemy to follow. The enemy must resume his march in his desired direction, and the cavalry comes right back to continue its harassing tactics. It vanishes like a cloud of gnats and returns to sting again. In this manner, it can become a pest.

When dismounted, the horses are led off in very small groups to be concealed from sight of the enemy in gullies, water courses, patches of woods, reverse slopes, or folds in the ground or hills. These led-horses are kept as close as possible to their dismounted troopers so that they can be brought up quickly or that the troopers can run back quickly to the horses.

Thus the unit can resume its mounted advance or be off to the rear, like a cloud of gnats, in a very few minutes or even seconds. This ability gives cavalry great advantages over motorized infantry, because the latter must retire to the place where the parked trucks or carriers were left close to roads or else continue forward on foot. Cavalry does not move on roads and therefore has great advantages over motorized infantry in fighting delaying actions, which so often are of such vital importance.

Cavalry, in fighting defensively to hold a position, dismounts and digs in like infantry. But if it cannot hold against superior forces of the enemy it can stay longer and get away quicker. It can retire in any direction that gives it the most cover or shelter from observation because it needs no roads.

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*In commenting on the experience of a cavalry reconnaissance troop (mechanized) which spent four months in front line action Captain Alvin T. Netterblad, troop commander, said recently, "The troop's daylight missions were accomplished with mechanized equipment; those at night on foot. I wish we had some horse cavalry in our operations. When I left Italy, the fighting was in terrain so mountainous that mechanized units could not be used to best advantage, and the horse is to a cavalry reconnaissance unit what the mule is to supply units in mountain fighting."*

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Cavalry is invaluable for reconnaissance because it can explore the country in small detachments or assemble to smash through the enemy defensive screen. It can scout the country in front of and on the flanks of infantry and other troops, thus affording security. It is not impeded as much as tanks and scout cars are by natural obstacles of terrain, such as creeks, thick woods, marshes, mountains, etc. Not being confined to roads, cavalry cannot be ambushed easily. Given a little time, a little rest and care, rather than having useless demands made on its strength, and cavalry can perform a type of reconnaissance and over terrain impossible to other troops or means.

Cavalry can pursue and get in rear of a fleeing enemy with greater facility and less danger to itself than any other troops. Forming a team with tanks, it can move across country and appear on the flank or rear of an enemy. This team is very powerful. Cavalry can do this alone if necessary.

Infantry needs assistance by cavalry. Tanks or armored troops need assistance by cavalry. Artillery needs the protection afforded by cavalry. Under these circumstances, if properly appreciated, the supply corps will find a way to procure forage for the horses. When a cavalry force runs out of supplies in the immediate theater of its operations, it can go back to its supply trains or dumps and get them if the supplies cannot be brought up to the troops.

Considering all of these qualities, one should be able to understand the accomplishments of Russian cavalry.



# Weakness of Nazi Strategy

## I

### Underestimation of Rôle of Modern Fronts

THE establishment, fortification and supply of the fronts, the choice of the direction of the main blow, the breaking-through and smashing of the enemy front, unrelenting pursuit aimed at crushing the enemy—that is the real, the vital content of modern strategy. It is the art of leading troops under conditions in which there inevitably arise continuous fronts cutting through the entire theater of war.

This formula arose from the experience of the First World War. It has been confirmed during the Second World War.

### SUPER-MOBILITY

Modern military art is developing not only in a very complicated, but also in a contradictory form. The defenses of the continuous fronts in the present war are more powerful than in the last war. Yet modern technique provides unprecedented opportunities for the swift movement of masses of troops. A mechanized grouping, equipped with all arms and capable of solving tactical and operative tasks independently, in the most favorable conditions can cover as much as 125 miles in 24 hours—ten times as much as infantry and five times as much as cavalry.

Then take the air force, which has now been given its own infantry—paratroops and landing troops. It has become exceptionally important as a means of military transport. Moreover, the military air forces which exceed the speed of movement of infantry possess unlimited expanses for maneuver, at speeds dozens of times over.

### POSITIONAL WAR

Unprecedented possibilities have been opened up for the war of maneuver. The art of leading troops has been given an entirely new basis. It demands that a general shall be competent to direct forces capable of moving at tremendous and at the same time varying speeds. And side by side with this colossal maneuverability exist stable fronts which confine all movement and underline the positional nature of certain forms of modern battle.

All these contradictions are solved in the strategy of the Red Army. The defeats which the Germans are sustaining are not fortuitous: they reveal immense discrepancies and miscalculations in the enemy's entire method of conducting the war.

The conception of "lightning war"—the famous *blitzkrieg*—arose from the predatory imperialist nature of German fascism. To carry out this wild plan the Nazis created a gigantic war machine, the basis of which was the mechanized force and the air force. The German command, relying on the destructive force of this army and its capacity for vigorous action, hoped to conduct the war in the form of swift campaigns.

## GERMANY'S BASIC DISCREPANCY

The chief shortcoming of Nazi strategy, therefore, is the discrepancy between its objects and its means. The Nazis base their calculations on temporary, ephemeral factors: on outstripping their enemies in preparations for and speed of action, on creating numerical superiority in the different theaters of war. At the same time they display a complete disregard of permanent factors: the moral-political state of the troops and the home front; the correlation of forces and material resources on the tremendous scale of the World War.

The adventurist nature of German strategy inevitably gave rise to discrepancies and miscalculations regarding various operative-strategic and tactical questions, regarding methods of conducting operations and battles, regarding the structure and organization of the armed forces.

These miscalculations are many, but there is one that looms very large among them: *the underestimation of the rôle of the present-day fronts*. In 1941 the Germans were routed before Moscow. In 1942 they suffered still more crushing defeats at Stalingrad. When it passed this milestone the German-fascist army entered on the downgrade to final defeat. But even before Stalingrad something very significant had occurred, something which future historians will assess as an important symptom of the impending fiasco of German strategy: in the spring of 1942 the gigantic Soviet front

### STALINGRAD



Cartoon by Kukriniksi

"On the Volga there is a rock . . ."



was stabilized over its whole length from the Arctic Ocean to the Black Sea.

It is not claimed that the German command failed entirely to foresee the possibility that continuous and more or less stable fronts might be established. Without a doubt, the Germans made a careful study of the experience of the First World War, and they knew perfectly well what fronts mean.

#### BLITZKRIEG MACHINE MEANT TO DESTROY FRONTS

The Germans lost the last war precisely because they found themselves ringed by fronts: the Russian, Balkan, Italian and Western fronts. The outlets to the sea expanses were blockaded by the British Fleet. All attempts to break the blockade on land and sea were fruitless. After violent battles, Germany capitulated as a consequence of exhaustion and defeat on the fronts.

All this the Nazis knew. And they created their monstrous war machine as a weapon for the destruction of fronts. The campaign of 1940, in which they broke the front in something like a month, seemed to justify their confidence in their weapon.

Matters took a different turn on the Soviet front. After Moscow they tried to console themselves by saying they had succeeded in halting the Red Army offensive. They protested that their army was prepared for defensive war. With feverish haste they erected engineering constructions along the fronts, and it must be admitted that they succeeded in building a powerful defense line.

Their fortifications before Leningrad were a model of their kind. In the forward lines they laid antitank and antiinfantry minefields 40 yards deep. Then they had lines of blockhouses, usually strong enough to stand 76mm shells. Some of the blockhouses, covered with rails and concrete slabs, were able to withstand even larger caliber shells. The embrasures were covered with steel screens as protection against hand grenades. These lines of blockhouses were protected by barbed wire entanglements, nucleus trenches, ordinary trenches, communication trenches and dugouts. The firing system created what the enemy believed to be an impenetrable barrier.

The very existence of this front bristling with fortifications signified one basic fact: that the Red Army had succeeded in halting the German war machine and had defeated the main purpose of this machine—the destruction of fronts.

By the spring of 1942 the front stood at Leningrad, for the Germans had failed to take that great city. It ran along by Rzhev, for the Germans had been driven back from Moscow. It ran west of Rostov, for the Germans had been expelled from that city. The three most important strategic objectives of the initial German offensive had been retained by the Red Army, which then proceeded to inflict the first powerful blows on the Germans.

The front lay in the interior of Russia, and its supply involved tremendous difficulties for the German



Cartoon by Kukriniksl

command, sucking dry an already weakened Germany. The Nazi hordes found themselves tied up.

In the summer of 1942 the Hitler clique once again plunged up to the ears in its adventurist strategy, which had collapsed in 1941. . . . After some temporary tactical successes the result was the same. In September, 1942 the main German grouping had been halted at Stalingrad.

And Berlin sent order after order to take Stalingrad. Hundreds of planes and tanks, and new divisions mounted innumerable attacks. Stalingrad was almost taken. But this "almost" was fatal for the attackers.

New fronts stretched from the invincible bulwark of Soviet defense on the Volga: to the northwest in the direction of Voronezh; to the south in the direction of the North Caucasus. The Soviet front stood invincible, barring the road to the north, the east, the south.

Feverishly the Germans fortified their side of the front. Winter was drawing near and the Nazi generals wanted to safeguard themselves against "accidents" like those of the previous year. They felt themselves safe behind the powerful defense lines of blockhouses, minefields, strongpoints. If the Soviet defense could prove strong enough to halt the German war machine, then the German defense, the latest word in engineering technique, would beat off the Soviet offensive. So thought the German generals. Once again they were wrong.

## II

### Underestimation of the Opponent

The Germans thought they had provided against everything. Yet, as we have seen, they most seriously miscalculated the character and rôle of fronts, as well as the method of conducting operations where fronts exist. We are now in a position to analyze this mistake of the German command.

The whole organization of the German army was adapted for the conduct of operations to crush enemy fronts. The Red Army had to contend with a powerful enemy who was thoroughly prepared for war.

Yet there was an organic defect in the whole of the



fascist system of waging war. This defect arose from the adventurist nature of German policy and strategy.

### THE "INVINCIBILITY" MYTH

The Germans admitted the possibility that fronts might be established. Indeed, they even considered their establishment inevitable, as modern armies immediately spread out widely and protect themselves with fortifications. But they excluded the possibility that these fronts might be stabilized for any more or less prolonged periods. On what did they base this conviction? On the German war machine's supposed ability to break through swiftly and destroy any front, however strong; on the supposition that there was no defense capable of withstanding the onslaught of the masses of German tanks, aircraft and infantry.

This was an adventurist distortion of military theory. Now, from the experience of war on the Soviet front, it is clear even to the uninitiated in military science that it is quite possible for a situation to arise in which fronts become stabilized both on individual sectors and even over the whole theater of war. German fascism rejected this possibility.

The Germans based all their operative plans on the supposition that they would *always* be able to insure swiftness of operations. That, too, was adventurism. With present-day mobile forces, it is of course possible to operate at high speed. But that is not to say that there can arise no delays which reduce the tempo of military actions, and indeed bring them to a standstill for quite considerable periods.

### REAL WAR AND PAPER WAR

"Friction," says Clausewitz, "is all that, generally speaking, distinguishes real war from paper war." On paper, the German command planned to enter Stalin-grad on July 25; in fact the Germans did not even approach the city until a month after that date, and there they were stuck until their complete rout.

Modern war operations may be slowed up for innumerable reasons: the resistance of the enemy, his counterblows, water barriers, supply difficulties. The "lightning" tempo of operations, which the German command considered normal, was an adventurist conception, strategically and tactically speaking, because it completely excluded the possibility of prolonged delays, or even halts by the attacking troops. When facts made nonsense of this conception, the German command was forced hastily to alter its plans; this, however, could no longer save it from serious defeat.

Reasonable risk has to be taken in war, but it must be combined with careful calculation, with a sober assessment of the situation. *A mistake in calculation is dangerous enough in tactical operations. But an organic mistake in strategy spells defeat.* The boldest generals—Suvorov, Napoleon—were always extremely careful to safeguard their operations against failure or unforeseen delay. Surprises are inevitable, but where proper

safeguards exist, surprises should not lead to the collapse of one's plans.

"None so blind as he who will not see." The Nazi command, having created a powerful war machine and planned a lightning war, thought it had provided against every eventuality, that no defense would be capable of withstanding its troops.

## III

### Underestimation of Active Defense

The possibility of halting the German offensive implied the formation of a defensive front, continuous and stable, for a more or less considerable period. This task was solved in a way unforeseen by the German command. Briefly, it was solved by active defense.

This active defense was in fact a most complicated system of measures. The heroic struggle of all arms was combined with the most intensive effort on the Soviet home front. In its strategic defense the Red Army took full advantage of the *great mobility and maneuverability of modern mobile forces*, combined with the defensive fire power of field fortifications.

The firm line of Soviet defense eventually evolved from an exceptionally swift and complicated struggle of maneuver, in which the Red Army constantly inflicted counterblows on the enemy and gained a number of brilliant victories.

### THE GERMANS REMEMBER MAGINOT

The strategic defense of the Red Army was successful only because it was *highly active, imbued with the offensive spirit*. Passive defense, relying blindly on the strength of defensive fortifications, is doomed to failure. The irony of fate! The German generals who entered our land in full *blitzkrieg* armor are having to recall that in 1940 the Maginot Line did not save France.

The unparalleled defeat of the Germans at Stalin-grad was the beginning of a number of consecutive offensive operations by the Red Army. Today an entirely new and original solution has been given to the problem of smashing the front. The strategic plan of the Supreme Command of the Red Army is the exact reverse of the adventurist strategic plan of the German command. In carrying out the smashing of the front strict account is taken of the true circumstances; it is done systematically, in a series of consecutive operations.

All the usual defense methods of the German command have proved worthless. The chief means of opposing break-throughs was considered to be rapid maneuvering with reserves in the rear of the front. But this method is parried by the subsequent operations of the Red Army, which extend the breaking of the front to adjacent sectors, with the simultaneous development of the offensive in depth.

Soviet offensive operations, which break open the front over an ever greater area, have disorientated the German command and bankrupted its whole system of maneuvering with reserves.



# SOVIET TACTICS

## Art of the Break-Through

*by P. Smirnov*

**D**URING the 1943 summer campaign, the Red Army first repulsed the German offensive at Orel and in the Belgorod district, then broke through the enemy's fortified positions and went over to a powerful offensive.

Further developing its operations, the Red Army then broke through the German positions on many other sectors. The Mius front fell, the Smolensk fortified districts were smashed, the Zaporozhye-Melitopol fortified district on the river Molochnaya crumbled before the Red Army's onrush, and lastly the Dnieper "wall" gave way.

The Germans had had two years to fortify these positions, which were formidable in the extreme. There were not only trenches, gun emplacements made of wood and earth and various obstacles, but also ferro-concrete structures and gun emplacements equipped with steel armored hoods. In some sectors the Germans used their own novelty "portable" steel gun emplacements. It is not surprising that Nazi propaganda should have shouted so loudly about the impregnability of the German lines and "walls." But to the Red Army they were not impregnable.

### THE SUVOROV TRADITION

The Russian art of attacking and breaking through enemy lines has its own history, traditions and theory. The Red Army is educated in the tradition of the great General Suvorov. It has made a serious study of Brusilov's offensive operations, and is now creating its own unsurpassed models of attack and break-through under modern conditions.

The Red Army's art of the break-through is based on clear, simple principles: the precise demarcation of operative and tactical tasks, the organization of interaction between troop units on an operative scale and between the Army services on a tactical scale. All this is based on flexible maneuvering, which is widely applied on both an operative and a tactical scale.

For instance, the capture of Kiev was achieved by a bold flanking maneuver. A little time ago, the same maneuver ensured the capture of Rechitsa. Their maneuvers invariably bring the Soviet troops to the enemy communication lines, which hastens the collapse of German resistance. The fear of encirclement forces the enemy to abandon one line after another.

### STRUCTURE OF ATTACKING FORCE

The nature of the operative task determines the scale

of the operations—the width of the front to be broken through; the composition, grouping and tasks of the troops of the first and second echelons, of the groups appointed to develop the success, and of the air forces. Not one of these elements is constant. Everything is subordinated to the concrete situation.

The composition of the troops of the first echelon (the tactical groups entrusted with the initial break-through) depends on the density of the German fighting order, the strength of the German fortifications and their local disposition. In some cases the break-through is effected by motorized infantry supported by tanks, aircraft and artillery, but more often the task is entrusted to the infantry reinforced by tanks, artillery and sapper units.

The groups entrusted with the task of developing the success are made up as a rule of mobile forces—tanks, motorized infantry and cavalry. The Red Army, having preserved its cavalry, has reorganized it in conformity with the character of modern warfare, and now uses it to carry out the highly intricate and responsible tasks in the depth of the enemy defenses.

The nature of the operations which have to be conducted by the groups engaged in developing the success is extremely varied. In some cases they have to strike at the flanks and break-through in close co-operation with the forces advancing from the front. In other cases they make raids in the rear of the enemy to a depth of 60 miles or more. A characteristic example was the raid made by General Vasilyev's tank units, co-operating with the cavalry, on Askania Nova and Perekop from the Melitopol district. This action assisted in clearing the Germans out of the whole of the North Crimea.

The Red Army considers that the most important and most effective reconnaissance is reconnaissance in force. It provides more exact information about the system of German defense, confuses the Germans as to the Red Army's intentions, exhausts and demoralizes the enemy before the main attack begins, and compels the Germans to bring their reserves into action.

### LONG DISTANCE COÖRDINATION

In the organization of tactical coördination, special attention is paid to the demarcation of tasks and the arrangement of mutual support between groups specializing in close-quarters fighting—for example, the infantry—with tanks, and artillery and mortars operating from a distance. The mass application of all means of





A recent photo of Soviet Cavalry exploiting a breakthrough.

Soviet Information Bulletin Photo

"The groups entrusted with the task of developing the success are made up as a rule of mobile forces — tanks, motorized infantry and cavalry." At right a tank, having just crossed the Dnieper, speeds to the attack.

Sovfoto



"distant" fighting at all stages of the battle directs and coordinates, as it were, the blows of the infantry and tanks.

The mass fire of the artillery and mortars breaks the enemy's defense, disturbs his fire system, covers the attacking troops from German counterattacks and prepares their blows in the depth of the defense.

The air forces constitute an independent air echelon. They may be divided into groups whose job it is to facilitate coordination between the land forces operating

near at hand and at a distance. The air forces secure the attacking troops against air attacks, help to prepare attacks, beat off counterattacks and support infantry and tanks fighting in the depth of the enemy defense.

Such are the principles of the art of the breakthrough, as applied by the Soviet troops. Of course, the chief of these principles is fighting quality. It is the fighting quality of all the services of the Red Army which gives them their undoubted superiority over the enemy, and makes possible their brilliant successes.

## Tactics of Auxiliary Operations

*by Major Milovanov, Red Army*

Auxiliary operations by small Soviet forces were a prominent feature of the recent battle of Kiev. These minor Red Army groupings drew the attention of the enemy away from the areas where the main forces were concentrating for a decisive blow.

The capture of the village of Khodorov was the fruit of such an auxiliary operation by a Soviet division. The first problem was to breach the Nazi defenses. This initial success had to be developed by a further advance along the bank of the Dnieper to Khodorov.

On the eve of this operation, two battalions attacked

the enemy's flanks. In the course of this advance, the supporting artillery spotted the German firing positions. Reconnaissance on the flanks and constant observation revealed that the three main enemy strong points were connected with one another by communication trenches. One Nazi strong point stood on an elevation, over which ran the forward positions of the German defense lines. The second strong point was farther behind, a little over a mile south of the first one. The last strong point was right in front of the village of Khodorov, a mile to the west of the other strong points.



## RIVER BANK THRUST

The Soviet divisional commander decided to deliver the main blow on his right flank, that is, along the river bank. After a brief but intensive bombardment the German infantry were forced out of their trenches. This hasty withdrawal was noticed by the Soviet artillery officers, who asked their general's permission to open fire on the more distant German positions ahead of schedule. This request was granted and the long range guns wrought havoc among the enemy. Soviet infantry detachments captured the German trenches with slight losses. The height was taken.

As soon as the forward German trenches had been cleared the batteries advanced. At this moment, the divisional commander brought up his antitank reserves, consisting of twelve motorized guns.

Events developed rapidly. Soviet artillery crews mopped up one German pocket of resistance after another. The enemy did not have time to bring up sufficient reinforcements. Immediately after taking the height, Soviet detachments attacked the second Nazi strong point. This operation secured the division's left flank and opened the road for the tanks.

The second enemy strong point was eliminated by a regiment moving on the division's left flank. The regimental commander ordered a battalion commanded by Captain Vorobyov to storm a height, and two other battalions to attack between the road and the river.

The artillery crews of the first battalion did a magnificent job of silencing the German guns, and the infantrymen soon captured the height. Meanwhile, Soviet tanks arrived on the scene. Russian tommy gunners mounted the tanks, which sped towards the last enemy strong point outside Khodorov. Tanks and tankborne infantry penetrated the curtain of enemy artillery fire and skirted the strong point from the south. At the same time, detachments of the division were advancing along the river bank, which flanked the strong point from the north.

The Germans had built their defense on the far slopes of the hills, so as to protect their forces from the point-blank fire of the Russian guns. Their trenches were protected by a large number of firing nests, particularly along the river, from which the Soviet division was aiming its main blow.

The enemy firing positions on the right bank could be well observed from the opposite river bank. A considerable number of German machine gun and trench mortar nests were spotted well in advance. Russian artillery crews got their guns right up to the bank without arousing German suspicions, and prepared to open point-blank fire. While the Soviet division attacked the strong points, these guns remained silent. It was when the infantry approached the village heights that the Russian batteries on the left bank spoke up. All the German positions on the right bank were captured within a few minutes.

## SUCCESSFUL DIVERSION

As a result of these auxiliary operations, the Soviet division not only diverted the enemy's attention, and a considerable part of his force from the Red Army's main drive, but inflicted heavy losses.

Why was this operation successful? First of all, it was carefully prepared.

The Germans thought that there were few Soviet guns on the right bank. The skilful maneuvering of the Russian batteries on the left bank gave the impression that the main artillery forces were concentrated there.

Artillery crews and infantry detachments operated with precision, and in strict coördination with one another. The magnificent support rendered by the batteries and tanks advancing with the infantry was another important factor.

Finally, this success was the result of the outstanding maneuverability of all infantry and artillery units. While the bold operations of these small groups nailed down the enemy's attention, the main forces attacked in another direction.

# Repulsing Mass Tank Counterattacks

*by Major Agibalov, Red Army*

Whenever a large group of Germans is threatened with a flank blow or with encirclement, they try to relieve the situation by the mass use of tanks. A large armored force, coöperating as a rule with infantry and planes, is employed as a spearhead to strengthen the sector that has been weakened. When there is no possibility of restoring the situation, they try, under cover of mass tank counterattacks, to withdraw the main body of their troops to a new line favorable for positional warfare. This mass use of armored vehicles on decisive sectors, and particularly against open flanks, is no new feature of German tactics.

## NEAR CHERNYAKHOV AND BRUSILOV

The fighting in the Chernyakhov and Brusilov areas provided some striking illustrations. The Germans, for days in succession, attacked the Soviet positions, but the result was only a slight withdrawal by the Russian divisions. The enemy lost very heavily both in men and material, without gaining any appreciable success. As many as 200 tanks have taken part in some attacks.

It is much more difficult for advancing troops to beat back mass tank attacks than for troops who are on the defensive. During offensive operations the line of the front is often very uneven, with the result that enemy





Sovfoto

The self-propelled guns are given the signal to go into the attack. This gun crew destroyed a "Ferdinand" tank, a "Tiger" tank, four fortified points and 20 Nazis in one day.

tanks are able to strike flank blows and sometimes to drive to the rear of the attacking troops. Still, these armored onslaughts can be countered successfully. The main thing is to organize a powerful antitank defense on the flanks.

#### RÔLE OF ARTILLERY

It is essential to strike at the counterattacking tanks before they reach the infantry positions. That is a job for the artillery, firing both from cover and over open sights. Heavy gunfire forces the armored machines to maneuver along the front in search of sectors where the artillery pressure is less intense. There must be an antitank reserve available to be hurled into any given sector, should the tanks get out of range of the guns.

Incessant reconnaissance and observation of the terrain is essential in order to prevent the enemy from launching surprise counterattacks. Experience has shown that the movement of motorized columns and their areas of concentration must be reconnoitered not only by stationary observers, but by reconnaissance aircraft as well. The planes can also strike at concentrations of enemy tanks, aircraft and long range artillery.

It is also very important to combine defensive operations on one sector with vigorous attacks on another. While the main body of German tanks was counterattacking on one sector of the battlefield, a series of blows were struck at neighboring points, with the result that the Soviet troops captured a number of inhabited places. This enabled the units assaulted by the German panzers to entrench themselves, fortify the inhabited points and dominating heights, and concentrate their heavy artillery for a strong counterblow.

Efforts should be made to encircle the tanks that have managed to penetrate the defense positions, and lure them into fire sacks. Here is an instance. After failing to achieve any success along the main direction

of their attack, a group of 50 German machines turned aside and drove through to a village situated at the junction of two Soviet units that had gone over temporarily to the defense. The junction was covered by artillery fire, and the Soviet gunners were in a position to shift their fire to the road over which the enemy machines had just passed.

#### ARMORED RAIDS ON ENEMY REAR

The Soviet tanks, too, play an important part in repelling armored counterattacks. They raid the rear of counterattacking enemy groups and paralyze their activity. This requires thorough preparation, including heavy air attacks on the main German strong points.

The operation of the Soviet tank unit commanded by Popov shows what a well-organized raid of this kind can achieve. After the Soviet infantry had broken through the secondary German defense line, a tank unit entered the gap and made for a highway along which the enemy was bringing up ammunition and fuel for his machines. Meanwhile, Soviet planes were attacking a strong point on the highway. A group of tanks met a column of German fuel lorries and set fire to them, while other tanks attacked a concentration of enemy infantry in the village and destroyed about a hundred Nazis.

These developments forced the enemy to transfer a considerable portion of his tanks from the front line to the rear area where the Soviet machines were operating. But it was too late; by that time the Soviet tank unit had already rejoined the infantry.

Of course, the situation does not always permit tanks to carry out raids in the rear of the enemy force launching mass counterattacks. There is no doubt, however, that armored vehicles should always be kept at posts where the other arms of the service are showing the greatest activity, for tanks are always a powerful reinforcement for the infantry.

Past half-burned villages rumble Soviet self-propelled guns. This one is a 128mm mounted on a medium tank chassis.





# RIVER CROSSINGS\*

**I***N the Red Army's 1943 summer offensive, its generals, officers and soldiers acquired immense experience while conducting operations under the most complex and difficult conditions.*

*The big obstacle in the Red Army's advance was the river Desna, the forcing of which undoubtedly will go down in military history. Swift movement, skilful maneuvering, and the unshakable fortitude of Soviet cavalry and mobile units helped them to seize the river crossings and to hold bridgeheads until the main forces arrived.*

—Colonel V. M. Solovyov.

## FORDING THE DESNA

A tank formation under General Kravchenko was speeding toward the scene of the violent battle for Kiev. But its road to the Dnieper was barred by the Desna. Narrower than the Dnieper, but swift and with an uneven bed, this river presented a serious obstacle. Ordinarily, heavy pontons and ferries would have been needed to cross it. But time was short.

"We must get to the other bank and quickly," said General Kravchenko, and they did. The men went into the water, and diving and feeling for the ground with their feet, at last found a place where fording of the river seemed possible.

A course 300 meters wide was marked out by poles for the fording. In some places it was two meters deep. Kravchenko's tanks were not amphibians, but the Command decided to ford the river. All night the tankists prepared for the crossing by stopping up holes and crevices in their tanks. Of course the tanks were not hermetically sealed and water, lots of it, was bound to seep in. But the idea was that before the water reached the engines and stalled them the tanks would already be on the other bank.

At dawn the best tank drivers descended from the bank into the river. They steered blind, while the tank commanders, peering through the hatches of the turrets, gave them instructions. The water seeped into the tanks, poured over the drivers and penetrated the motor compartments, but strong blowers drove it out, and to the onlooker it appeared that whales were swimming across the river, ejecting water-spouts.

Finally the tanks reached the other bank. The first machines were over, then a tank battalion, followed by one tank brigade after another. Thus this unparalleled amphibian march was made. Not a single machine was lost in the crossing.

This daring raid had far-reaching effects. Right after-

ward the tankists forced another river, the Irpen, and striking out eastward through a forest tract, surprised a German group advancing northward from Kiev. The Germans lost thousands of men, abandoned 40 guns and scores of mortars and staff cars. The general commanding one of the routed German divisions fled in his underwear. Important staff documents were found in his headquarters.

As a result of this bold maneuver, the commanding heights on the right bank, north of Kiev, fell into Soviet hands.

## BRIDGING THE DNEPER

One tank formation emerged on the Dnieper while a motorized brigade which had previously forced the river, was defending itself on the other bank against vastly superior enemy forces. Although replenishments were continuously ferried over on boats, pontons, rafts, etc., this trickle could not sustain resistance against a vastly superior enemy. Immediate relief with large forces was imperative if the troops were to retain the bridgehead on the other bank.

The Command ordered the tankists to build a bridge over the Dnieper and to build it quickly. The task seemed almost impossible. The river in this place was wide and swift; the approaches to it were under enemy artillery fire; and lastly, there were too few engineers among the tankists. But the order had to be carried out. The tankists went into the water, located the shallowest places, marked them with poles and thus laid a line for a future bridge.

Meanwhile the Command issued an appeal to carpenters among the local inhabitants and with them began to fell giant firs and oaks. Right on the spot they shaped them into prefabricated links for a bridge. Then the tankists, on rafts made from empty German gasoline drums, sailed out into the middle of the stream and drove in piles for the future bridge.

It was a stupendous job. The swift current carried away the men; the piles would not remain straight. The men had to dive and by their own weight hold down the end of the pile while it was being driven in from above. And there were hundreds of such piles to be driven in. To make it more difficult, the enemy rained shells on the builders and planes swooped down, knocking out piles and men. But by that time, the work was already proceeding simultaneously in numerous places. Casualties in both men and piles were quickly replaced and the bridge kept growing. At last it was ready, and the tankists exchanged their builders' axes for the steering gear of their tanks and rushed to the other bank.



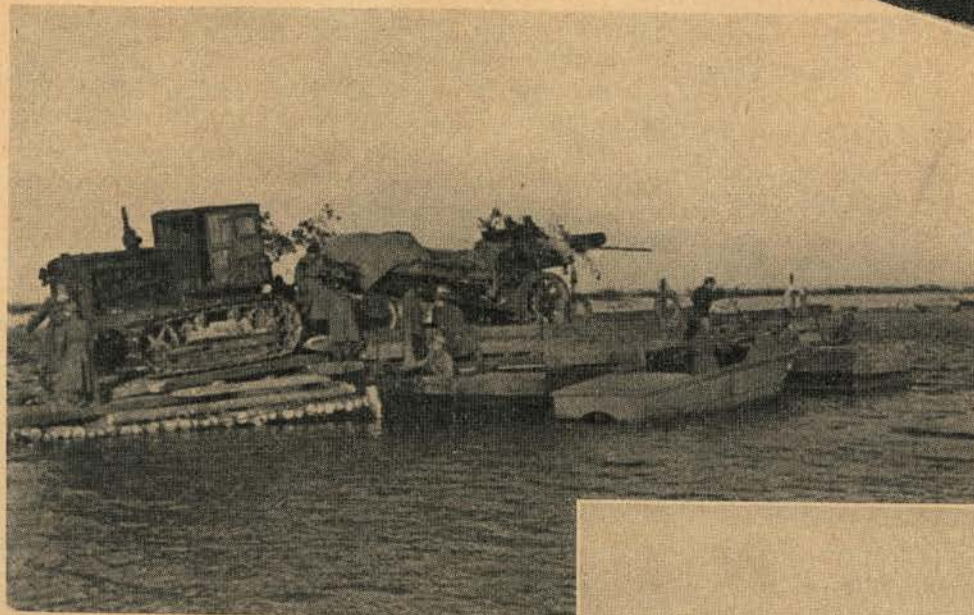


*Left:* A hastily contrived bridge enables these Soviet Tommy gunners to cross a river. By this means they will come behind the enemy and attack him from the rear.

*Below:* Rafts, guided by cables, were used to transport men and supplies.

## Bridging the Dnieper

Sovfotos



*Left:* This big Soviet gun is about to be landed on the west bank of the Dnieper to reinforce the infantry.

*Right:* American made trucks cross the Dnieper over this hastily improvised bridge during the offensive which drove the Germans from the west bank.





# BATTLES ALONG THE

## Capture of Zhitomir

by a Correspondent of the 1st Ukrainian Front

**F**IGHTING heavy battles all the way, day and night, the Soviet forces covered about 80 miles from Kiev to Zhitomir under difficult conditions on roads washed out by rain.

The Germans had several fortified defense lines between the Dnieper and Zhitomir, and from each of these lines they mounted savage counterattacks, only to be overwhelmed by the Red Army's drive.

Zhitomir was very important indeed to the Germans. The vital railway connecting the northern and southern German groups, between which there is a considerable gap, passes through the town, which stands on the wide asphalted road to the west.

Cavalry and infantry bore the brunt of the fighting for Zhitomir. The advance of the 1st Guards Zhitomir Cavalry Corps from the Dnieper to Zhitomir was an epic of the highest courage, military skill and organization. They tackled the Dnieper crossing straight from the march, and established a bridgehead on the right bank in two days' fierce fighting.

After the defeat of the enemy at Kiev, the corps began its great advance to the west. The Germans defended themselves stubbornly on the intermediate river banks, but the cavalymen, working in coördination with tanks and infantry, rode through them straight from the march. Avoiding protracted battles, they cut the Germans' roads of retreat, and destroyed enemy equipment and manpower in swift attacks.

Units of this corps soon reached the main Kiev-Zhitomir road. The Germans threw in tanks and aircraft, all to no effect. With the fall of Korostyshev, the cavalry advance became even faster. As they neared Zhitomir, the horsemen scourged a demoralized enemy who proved totally incapable of holding them.

After their defeat at Kiev, the Germans began to retreat along the Zhitomir highway. Using rearguard units to cover the retreat, the German command tried to withdraw its units beyond the Zdvizh River, which links up with other streams to form a series of barriers on the road to the west; and it was on the Zdvizh that the enemy planned to put up a stiff defense.

General Baranov's cavalymen, supported by tanks, were sent to frustrate this plan. The horsemen moved west along the Zhitomir highway and other parallel roads, by-passed the German rearguards and reached the Zdvizh after making a fighting advance of 25 miles in one day. Racing neck and neck with the Germans, the cavalry reached the line where the Germans had planned to set up their defenses. At some points they got there even before the Germans.

## Soviet successes that caused the Nazi withdrawal from river defenses

This time the enemy's favorite tactics, based on the defense of one water line after another, failed completely. Menaced continually by encirclement, the Germans were forced back farther and farther to the west.

Within three days, without being held up at all on the smaller rivers beyond the Zdvizh, the Soviet forces reached the Teterev. Hoping to draw off the Soviet forces, the Germans counterattacked strongly around Fastov, but the speed of the advance on Zhitomir did not slacken.

The town of Radomyshl, north of the Zhitomir highway (on which there was a great deal of guerilla activity), was captured straight from the march. The Germans also failed to hold the town of Brussilov, lying south of the highway.

They tried to put up serious resistance on the river Teterev, and had turned the town of Korostyshev into a stronghold that locked the highway. From this town, they launched a number of strong but ineffective counterattacks, supported by artillery and aircraft, against the Soviet cavalry.

Soviet artillery moved forward with the cavalry, and was of great assistance in dealing with enemy counter-

Beyond the woods lie the swamps, beyond these—a river, beyond the river—the enemy. During the capture of Zhitomir, Soviet Cavalry, by forced marches, made wide encirclements and attacked the enemy's rear.

Soviet Information Bulletin Photo





# E DNIIEPER

attacks at Korostyshev, while the cavalry maintained a gruelling pursuit. Meanwhile, another Red Army unit, operating farther to the north, forced the Teterev and emerged on the right flank of the Germans' Korostyshev group.

The town was almost encircled, and the Germans were again forced to retreat. Twice after this they regrouped their forces, drew up reserves, and tried to restore the position. They mounted two counterattacks with large forces supported by planes, but achieved nothing. By this time their losses were so heavy that they were unable to embark on any kind of active operations. The retreat to the west began in good earnest. Korostyshev, "the padlock," was broken, and the Soviet forces resumed their pursuit of the enemy.

Giving the Germans no chance to recover, overtaking them and threatening them with flank blows, the advancing Soviet units emerged from the south through the forests on to the railway linking Zhitomir and Fastov, and straddled it. Thus the enemy was deprived of the most convenient means for any further regrouping of his forces on the southern flank of the breakthrough.

Meanwhile, Soviet units, operating north of the Zhitomir-Kiev railway, routed the German forces opposing them and straddled the Zhitomir-Korosten railway. They captured Chernyaki station and again cut the railway, this time from the north.

As a result, Zhitomir was surrounded from two sides. Developing their successes on the enemy's flanks, the Soviet forces advanced from the front and broke into the town. Street fighting continued until 4 a.m. By dawn the town had been completely cleared of the enemy.

The speed of the Red Army's advance saved thousands of Soviet citizens whom the Germans had rounded up for deportation to the west.

## Capture of Korosten

*by a Military Correspondent*

On November 15th, the Red Army was thirty miles from Korosten. This distance was covered in two days by units of the 1st Ukrainian Front. Together with Zhitomir, the important stronghold of Korosten formed a big bulge penetrating deep into the German defenses.

The loss of Korosten deprived the Germans of another important railway junction. Through Korosten, main lines radiate to Kiev, Gomel, Shpetovka and Berdichev. Whoever holds Korosten has every chance to maneuver with reserves and maintain connections with his bases.



The capture of this key center was the culmination of a close pursuit which continued unabated for twelve days and nights. The enemy, hounded remorselessly westwards from Kiev, tried several times to dig in, but was frustrated by the lightning action of his pursuers.

The Germans did their best to withdraw their main body under close cover from rearguards, but the Soviet forces, clinging to their heels, overcame the rearguards, threatened to encircle the main units, and forced them into action.

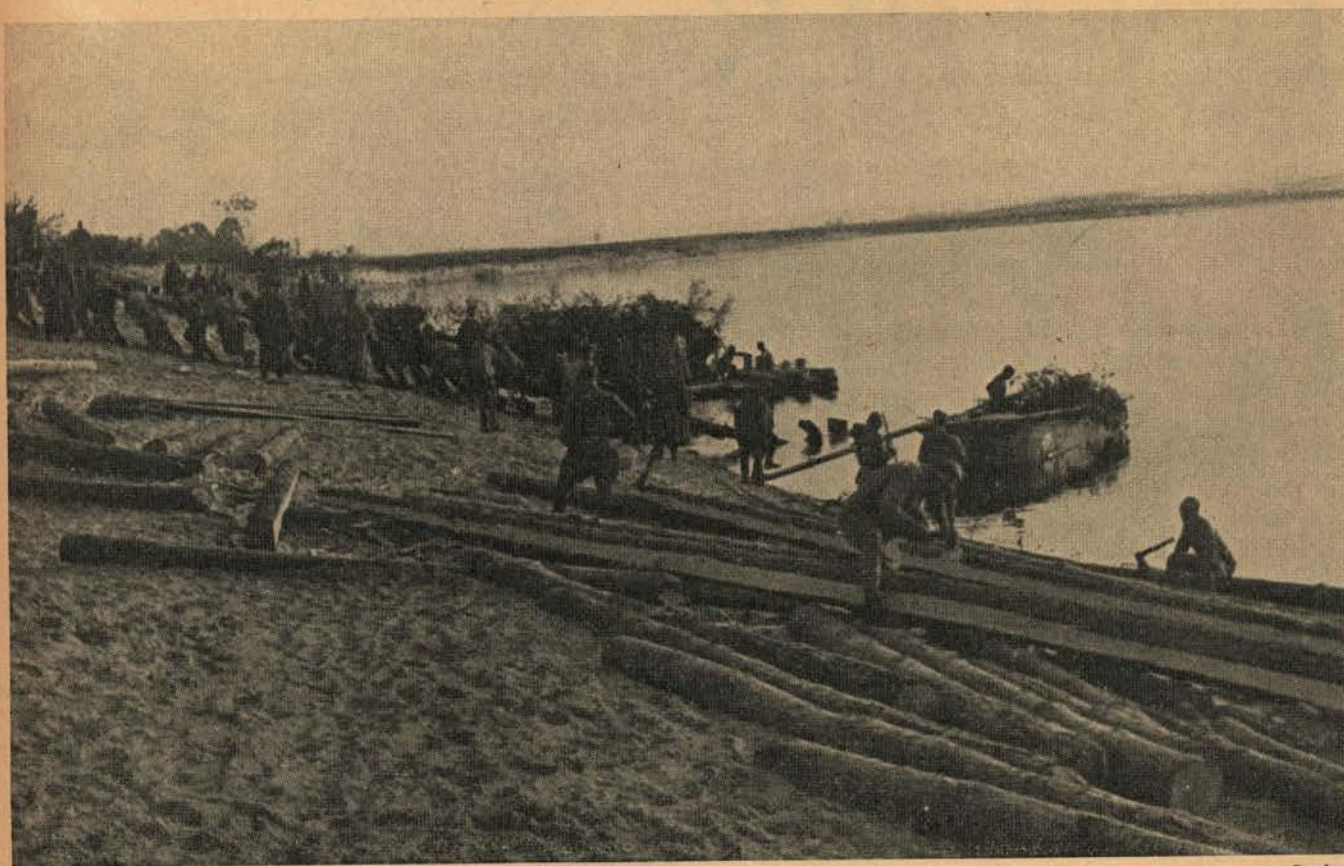
That was the pattern of the fighting along the whole 87 miles from the Dnieper to Korosten. The Germans fought back fiercely all the way. They tried to maneuver, counterattack, and ambush the Soviet troops striking at the pursuers' flanks.

The Soviet tactics of forcing the enemy to engage worked very well. Along the River Uzh, the German defense was augmented with strong reserves, who were prepared for violent resistance. But the Red Army men, after probing for the weak spots, forced the Uzh simultaneously at a number of points, dislodged the enemy from the river line, and set out in pursuit without delay.

The Germans tried to regroup, but the advancing Soviet forces drove home two deep wedges, from which they launched decisive attacks. The fighting here cost the enemy large forces of infantry and artillery.

The approaches to Korosten were defended by well fortified strong points situated on the eastern bulge. Each of these villages had to be taken in bitter fighting. The war material captured in the Korosten area has not yet been counted, but there is evidence that the Germans have paid a big price for their attempt to hold the town. Large quantities of German army supplies and weapons were found abandoned at the railway station.





Sovfoto

Boats, logs, barrels, and even bushes were used by Soviet troops crossing the Dnieper. Above scene shows the arrival of a boat and barge at a beachhead on the west bank.

## Battle of Gomel

by War Correspondent Makarenko

Gomel used to be called the second capital of Byelorussia. It was a most important industrial and cultural center, with a wealth of educational institutes and workers' clubs. Its metal, leather, clothing and food industries employed tens of thousands.

Judging by prisoners' statements, the German Command early in the summer of 1943 decided to fortify Gomel as one of their main rear strong points. Permanent defenses were erected. This town had a unique importance in the German defense system along the western bank of the Dnieper. Gomel was a vital supply center, commanding a highly developed network of good roads and a railway running due west.

The Germans defended the place with a determination proportionate to its military value. They clung to every hill, gully and railway embankment. The whole countryside is criss-crossed by small rivers, and there are big tracts of swamp and forest land. The enemy's intermediate defense lines exploited all these natural barriers.

The battle for Gomel began long before the Soviet troops came into direct contact with the town. The offensive was launched simultaneously from several directions, the Soviet troops advancing from northeast and east and from southwest and south.

The terrain demanded extremely flexible maneuvering. The Red Army units, skilfully outflanking fortified centers of enemy resistance and chopping at the German flanks, compelled the enemy to fall back. The situation at the approaches to Gomel became extremely tense. Soviet troops advancing from the northeast reached the Sozh River north of Gomel. Units on the offensive from the southeast reached the river to the south of the town. Those advancing from the east reached the line adjacent to Gomel itself.

The enemy found himself in a semicircle no more than 9-12 miles in radius. Within this small area, stiff with antipersonnel and antitank obstacles, a battle of extreme violence was fought out. The advancing Soviet units ran into heavy shelling and savage counterattacks.

The winding Sozh River, making an elaborate curve at Gomel, surrounds the town from north, east and south. The Germans held a strong defense line beyond its marshy banks. The Soviet troops had not only to cross the river, but to cut gates in the chain of enemy fortifications.

They succeeded in crossing both north and south of the town. All arms distinguished themselves equally. Captain Karipanov's infantrymen got themselves across on barrels, planks, logs and bundles of branches.

Once over the water, the Red Army men, penetrating deep to the southwest and northwest, threatened the Germans with complete encirclement. Stiff fighting de-



veloped to the north. The enemy brought up large forces and launched dozens of counterattacks, particularly near the strong points on the Khalcha River.

Desperately clinging to their "Byelorussian bastion," as they called Gomel, the Germans sent in tanks and self-propelled guns. The battle surged close to the town. Advancing from north and south and widening their bridgehead on the western bank of the Sozh, the Soviet troops gripped the town in pincers.

Fearing encirclement, the Germans echeloned their troops deeply and sent into action large tank and infantry forces, supported by self-propelled guns.

Meanwhile, other Soviet troops struck across the Dnieper near the town of Loyev, and launched a vigorous offensive in the Rechitsa direction. The advance of the tanks and motorized infantry along the Dnieper bank spelt danger for the German forces between the Sozh and Dnieper rivers.

Near Kholmech, and to the west of it, the Germans had powerful field fortifications in which they had concentrated fresh infantry and tank formations, and which were well covered by the surrounding swamps. The Soviet break-through of this fortified zone radically changed the situation on the entire bridgehead and created favorable conditions for the capture of Rechitsa.

The struggle for the bridgehead on the right bank of the Dnieper did not end with the capture of Rechitsa, however. As was to be expected, the Germans counter-attacked strongly in an effort to recover lost ground and recapture communications, and so relieve the position of their troops in the Gomel area.

They sent in fresh tank units, and tried to cut the Soviet wedge by ramming the flank. The German armor struck southwest of Rechitsa along the Gomel-Kalinkovichi highway. German infantry units also counterattacked, but a rapid Soviet outflanking movement pressed them back to the Dnieper. They succeeded in hanging on to several strong points south of Rechitsa, and struggled hard to link up with the tanks and so cut off the Soviet elements fighting west and north of Rechitsa.

The fighting along the Rechitsa highroad, which lasted for three days and ended in victory for the Soviet troops, was marked by the utmost fury. On some sectors the Red Army men repelled ten, fifteen and even more blows in 24 hours.

Meanwhile, other Red Army units continued to advance to the west along the Gomel-Kalinkovichi railway, and in the north along the right bank of the Dnieper, towards the Berezina. Byelorussian guerillas coöperated. On the second day Gorval, a heavily fortified strong point, was captured, and the Soviet forces advanced further to the west. The operation was a triumph for the flexible maneuvering of the Soviet tanks.

The Germans were still further isolated from their rearward positions in the west. The Gomel fighting, which had continued for a long time on this sector, reached its final stages. Early on the morning of No-

vember 26th, units under Colonel Massonov and Colonel Bulatov struck on the northeast outskirts, while units from the southeast broke into the town from that direction.

## Airborne Troops and Guerillas Attack Cherkassy

*by Captain Gekhman, Red Army*

Great importance is attached to the operations of Soviet airborne troops working in skilful collaboration with the guerillas and the regular land troops in the fighting at the approaches to Cherkassy.

Cherkassy is one of the biggest towns on the right bank of the middle Dnieper. The railway leading from Cherkassy to the west links up with various enemy communications. By establishing themselves in the area of Cherkassy, Soviet troops would be able to restrict the enemy's possibilities of maneuver.

The Germans, who regarded the defense of Cherkassy of great importance, had created a network of fortifications there, and had built the town into a powerful strong point adapted for all-round defense.

All the possible crossings were under enemy fire. The strong points created on the right bank were designed to direct cross fire against attacks. The divisions concentrated for the defense of the area were well adapted to the wide maneuver of tanks and motorized infantry.

The operations for the forcing of the river were planned with the support of guerilla detachments operating northwest of Cherkassy. The area they had cleared of the enemy and controlled was prepared for the landing of the Soviet airborne troops, which was successfully achieved. Together, the airborne troops and guerillas formed a strong grouping able to carry out the task assigned to them. They launched their attacks

Soviet partisans operating in guerilla detachments, cleared the Nazis from an area northwest of Cherkassy in preparation for the landing of airborne troops.





against enemy strong points inside the lines of the German defense, with the two aims of (1) pinning down and destroying enemy man-power and equipment, and (2) drawing off German forces from the Dnieper defenses.

After stubborn fighting, the airborne troops and guerillas captured a big enemy strong point. The Germans, surprised by this sudden appearance of Soviet troops in their midst, brought up their forces of tanks and motorized infantry from their front line defenses. The guerillas and air-troops had achieved their main objective—the diversion of the main German forces concentrated in that area.

Taking advantage of the situation so created, the Red Army troops began forcing the river. Under cover of artillery fire they crossed the Dnieper and captured a bridgehead. But this bridgehead was found to be unsatisfactory. Space for maneuver was limited, but the area they already held was big enough to serve as a jumping-off ground for further action.

To capture a new bridgehead a simultaneous attack on the enemy from the front and rear was necessary. The airborne troops and guerillas made a forced march and began to fight for the populated places indicated. The Germans, pressing from two sides, suffered big losses and were forced to retreat. Thus this small bridgehead was transformed into a wide gate leading into the forests held by the guerillas.

More and more units crossed the river, passed through this "gate," and concentrated in the forest area. They began to threaten the communications of the enemy forces concentrated in Cherkassy. The Germans drew up troops from other sectors and also from their deep rear. They then launched several flank attacks in an attempt to close the "gates" and cut off the Soviet units which had crossed over, but they failed.

The Soviet troops, continuing to develop their success, captured several heavily fortified enemy strong points covering Cherkassy. Having taken Yelizavetovka, Budishche, Svidovsk and other places, they advanced to the city and fought through the defenses there.

## Fighting for Znamenka Woods

*by Captain Gekhman, Red Army*

In the Znamenka woods and along the railway line from Znamenka to Smyela, the Germans planned a strong defense, based on a convenient wooded terrain. They kept the main roads under fire from commanding heights. In view of the enemy's tactical advantages, any assault on the German positions in this area would have been a difficult business.

The problem of breaking through the German defenses was solved in coöperation with the guerillas of the Kirovgrad region, who concentrated in the woods north of Znamenka and patrolled the road leading from Kirovgrad to the Dnieper. They drove the Germans out of a number of strong points, and entrenched them-



*Sovfoto*  
Tankists who have landed on the west bank of the river prepare to go into attack.

selves inside. After that, only a narrow line of fortifications separated the guerillas from the Red Army units.

Coördinated local blows struck by guerillas and tanks cut this German defense line in half, and the way into the Znamenka forests lay open to the Soviet troops.

The line of the woods, which stretch from the Dnieper banks to north of Znamenka, divided the German positions in this area into two parts. The Soviet Command used the forest massif for the concentration of troops and as a base for their offensive operations.

The concentration took place in perfect secrecy. The Germans never suspected that a blow was being prepared against them in that area.

The assault began in the evening. Attacks were launched simultaneously in several directions, with maximum pressure directed at the weakest points in the German defenses, and against the enemy's lines of communication. On the northern sector, the Soviet troops captured a village which protected the approaches to the ancient Ukrainian town of Chigirin.

A little farther to the south the advancing units, having broken the enemy's resistance, captured the



large populated places of Krasnoselye, Gutnitskaya and Tsibulevo, and cut the Znamenka-Smela railway line.

Near the village of Tsibulevo there was a most dramatic meeting between Soviet tank troops and a German train rushing military supplies to Znamenka. Several bursts from the tankmen's guns damaged the train, which stopped at once, and within a few minutes was in Soviet hands.

Successes were achieved on other sectors also. Northeast of Znamenka, advancing units forced the right Ingulets and captured the townships of Konstantinovka and Yasinovatka. Stubborn fighting developed near Alexandria, which was outflanked. The Germans counterattacked strongly, but failed to hold the town.

The Red Army's successful advance southwest of Kremenchug is primarily the result of skilful maneuver by mobile units. The tanks swooped, broke through and captured communications. The infantry followed close behind, and developed the successes in close cooperation with the armor.

### Duel at Dnieper Estuary

*by War Correspondent Nikitin*

The German Command, worried by Soviet operations on the Kinburg Spit, south of the Dnieper Estu-

ary, decided to put a landing party ashore and throw the Soviet troops into the water.

They approached in landing barges, and captured the waterside villages of Vorstadt and Pokrovskie Khutora. Troops of the "X" Soviet unit at once went into the attack, and heavy fighting developed. The German landing party had artillery support. They succeeded in entrenching, setting up barbed wire entanglements and mining the approaches. Although the soft sand, overgrown with bushes, hindered the movement of the Soviet artillery, the Kinburg Spit was soon cleared of the enemy.

One Soviet infantry unit began an assault in the Pokrovskie area. Another unit outflanked the enemy who was dislodged and pressed back from the outskirts of Vorstadt to the tip of the promontory.

The Germans tried to arrest the advance with artillery fire, but failed. The enemy batteries were silenced. The remnants of the landing party, scattered over the spit, resisted with their last forces, then began to give themselves up in groups. The enemy officers continued to hope for reinforcements from across the estuary, even when they had lost all but the last yard of the spit. They were disappointed. Everything that appeared on the water was sent to the bottom by the Soviet guns.

The Germans lost over 700 dead and 500 captured in this engagement.



A wounded man is returned from the west bank of the Dnieper while the raft that brought him starts immediately on the return trip. Rafts attached to a cable were used as ferries to carry troops and supplies.

Sovfoto



# Air Support of Cavalry and Tanks

by Colonel J. Yeskou

**M**OBILE forces of tank and cavalry units have found wide application in the course of the offensive operations of the Red Army. When a gap is made in the main line of the enemy defenses, this group breaks through the passage and, operating at times independently of the main force, cuts the rear lines of communication and seizes important strong points of the enemy. This enables the infantry to move forward and prevents the retreating enemy from carrying off the heavy armaments and loot.

These mobile units receive the support of the air force which operates in close coöperation with them. The following episode illustrates how this is done.

A battle was in progress for a strong enemy point. After fierce fighting, the German main line of defenses was broken. The Soviet command ordered a cavalry and a mechanized unit to pass through the gap and develop the success. To secure their speedy advance, Soviet bombers and attack planes were detailed to crush the points of resistance in the depth of the enemy defenses. Fighter planes were to clear the sky of the enemy aircraft and give cover to the ground forces.

The Germans attempted to stall the advance with blows from the air.

An important part in this struggle with the enemy air force was played by the reserve fighters at the disposal of the air command. When the situation called for it, reserve fighter planes were sent out to patrol the district of operations of the cavalry and tanks.

The fighters patrolled in fours, sixes and sometimes in groups of eight. They also covered localities where the mobile units massed in preparation for a blow. This patrolling was conducted uninterruptedly.

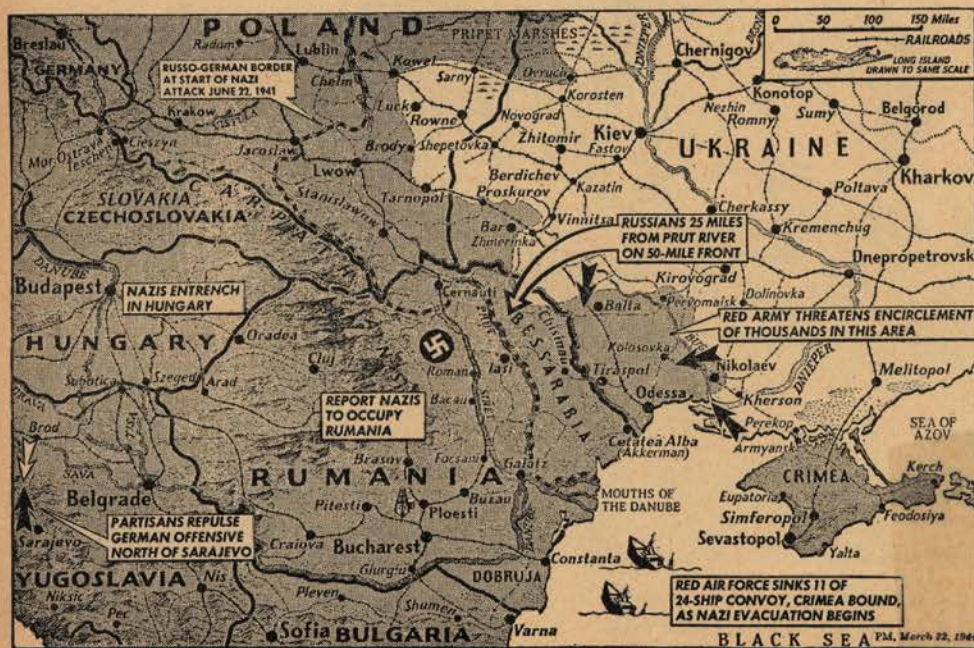
The active tactics of the fighter patrols forced the enemy to resort to cunning. Thus, to distract the attention of the Soviet fighter craft, the Germans sent out formations of 6 and 8 bombers under escort of fighters. Meanwhile, a large force of Junkers 88's and Junkers 87's stole up to the covered locality from another direction. The ground radio station did good work in directing the fighters to the important sectors and thus frustrated the enemy plans. The Luftwaffe failed to check the advance of the Soviet cavalry and tanks.

The mobile units also received substantial support from the night bombers which inflicted heavy losses to the enemy in men and matériel. In the course of the battles, the pilots devised new means to coöperate their actions with the mobile units.

When a certain mechanized unit was engaged in battle for two inhabited points, the night bombers dealt heavy blows to the defending enemy forces and paved the way for the tanks.

Speedy action was possible because a part of the air force was placed at the disposal of the ground units operating in the main directions. This enables the Soviet Stormoviks, bombers, and fighters to appear at the time and place where the situation demanded it.

Such decentralization of the command of the air force is possible during certain stages of the offensive operation only. When the mobile units and the infantry operating in the main direction reached their objectives, the command of the air force was again placed in the hands of the general command authorities. Representatives of the air force and a group of staff officers accompanied the mobile units with their radio stations to direct the forces in the air.



Moscow, March 22 (U.P.)—Soviet vanguards drove nearly halfway across Bessarabia to within 20 miles of the Prut River border of Rumania today after splitting fleeing German armies with a thrust across the Balti-Cernauti railroad.

Front reports said Marshal Ivan S. Konev's Second Army was rolling across the plains at a pace which gave promise of carrying it to the Prut in a matter of days.

German hopes of a stand north of the Romanian border faded as the Russians smashed back new full-strength units rushed to Bessarabia in an attempt to restore the Nazi line, which has ceased to exist at many points.





*Upper:* Commanders of the Sixth Guards Cavalry Corps confer.

*Center:* This traveling field hospital behind the German lines is a part of a cavalry unit. Red Army cavalry has its own hospitals and recuperation centers.

*Lower:* A junior commander explains to his men the order of march.

*Upper:* A gun crew of the Sixth Guards Cavalry Corps cuts cross-country. Cavalry units have their own artillery.

*Center:* A liaison officer receives an order to be delivered to units situated at a considerable distance.

*Lower:* The cavalry horse is trained to lie immobile and form a breastwork and gun support for his master.



# "Goums Marocains"

*by Lieutenant Colonel W. C. Baxter\**

WAR CORRESPONDENTS covering the Mediterranean Theater have frequently reported on the gallantry and high personal fighting qualities of a body of French native African troops, called *goums*. The privilege of occasional indulgence in poetic license is freely conceded to our able and superior corps of news reporters, particularly when dealing with so colorful a subject. The rather lurid nature of some of these accounts, however, has created a false and confused conception of a group of very excellent mountain infantrymen, who deserve more accurate, if less sensational treatment.

Shortly after the North African landings in November of 1942, thousands of American troops, making the long trek from the west coast of French Morocco to Algeria and Tunisia, encountered for the first time a picturesque but unmilitary-appearing type of native soldier. These were on line of communication duty,

guarding important installations where this vital route passes through the rugged Spanish border country and the scenic Tlemcen Mountains. Every bridge, mountain pass, and cross roads throughout this area was guarded by these swarthy men in sandals, woolen socks, flowing djeballahs and turbans. Each one was armed with a long, bolt-action, bayoneted rifle and a curved 12-inch knife, carried at the waist.

Bivouacs were just off the road, where these native soldiers had established in conical tents or mud-thatched huts their individual domestic retinues, including dogs, goats, women and children. An indifferent attitude toward camp sanitation was apparent. Uniformly good-natured and friendly, their vocabularies had already been enriched by exposure to the American language. All questions and salutations were usually answered with several vehement "O.K.'s" and a wide grin, followed immediately and invariably by a request for cigarettes.

These were *goums*, we were told. But who were they

\*G-3 Section, Hq., Seventh Army.

Goumiers—native Algerian tribesmen serving with French Colonial forces in Italy—have taken a great liking to American weapons, which they find to be more precise and efficient, and are seen here practicing with American machine gun parts. In the matter of clothing, however, they stick to their traditional tribal overgarment.





and were they really soldiers? Could they fight? If so, were they of any use in the complicated warfare of the modern battlefield? Inquiry and experience have given the answers to these questions.

Centuries ago when the Arabs were extending their influence over all of North Africa, their penetration of Morocco brought them into contact with the proud and warlike Berber tribes. A bitter conflict followed. The Berbers were never conquered, but when they were eventually overrun they withdrew into the rugged Atlas Mountains. The Arabs gained control of the plains and continued to live there, but in a constant state of guerrilla warfare with the Berbers, until the period of French intervention.

Only after the most determined action on the part of the French Army was the turbulent region pacified and order established. Recognizing the unusual fighting qualities of the tribesmen, the French began recruiting them into the army. From the Arab tribes came splendid horsemen to form the colorful Spahi regiments, and capable infantrymen known as Tirailleurs.

An irregular light mountain infantry organized into companies (called *goums*) was formed for the wild and less amenable Berbers. Individual members of the *goums* are known as *Goumiers*. Each *goum* consists of 175 officers and enlisted men divided into three platoons. Four officers and six noncommissioned officers are Frenchmen who speak fluent Berber, in which tongue all commands are given. Some of the commissioned officers are Berbers but usually they do not rank above first lieutenant. Four *goums* constitute a *tabour* or battalion, and three battalions a group.

The *Goumier* is a hardy and primitive mountaineer, skilled in the arts of scouting and patrolling. He is definitely courageous and loves field soldiering for its own sake. His father and his father's father spent their active adult lives fighting; it was their livelihood. Thus when the *Goumier* of today enlists, he is seeking only pay and rations for the work he knows best. He excels in night raiding, where he can make full and grisly use of his versatile knife, as many a luckless German has found out. He can march forty to fifty miles in broken country practically without rest and on short rations.

The *Goumier* is a volunteer who enlists for an initial period of two years and usually reenlists several times. Except when on campaigns outside of Morocco, his family usually accompany him and minister to his personal needs. While a devout Moslem, unlike the Arab he is not polygamous. Until recently each *Goumier* was issued only a few basic rations and his individual arms. He was paid in cash and furnished his own clothing and other equipment. At present, however, all rations are furnished by the French Army and he is supplied in the same manner as the regular French troops. When recruits are needed, older *Goumiers* have no difficulty in obtaining friends or relatives from their home villages for whom they stand sponsor to their commanding officer. The supply of *Goumiers* always exceeds the demand.

Lightness and simplicity are the chief characteristics



In single file, fighting Goumiers who landed with French units in Corsica, move up the Teghime mountain pass, October, 1943.

of their equipment. The normal weapons are a rifle and razor sharp knife with which they are particularly adept. Recently, some of them have been equipped with British Sten automatic rifles and the US rifle M-1903. Their uniform consists of sandals, socks and the native woolen *djeballah* which is a loose robe with an attached hood worn thrown back, except in extreme weather. They dislike the steel helmet and prefer their woolen turbans. The pattern and color of the cloth of the *djeballah* and the turban are different for each *goum* and are designed by the commanding officers. *Goumiers* do not normally carry a blanket.

The *Goumiers* are foot soldiers. All officers and some noncommissioned officers, however, are mounted on horses. Each *goum* also has four mounted messengers. Mules are used for the transport of heavy supplies and equipment, including the light machine guns with which lately they have been furnished.

The organization, training, and equipment of the *Goumiers* is all directed toward taking the best advantage of their natural characteristics, by developing small groups of tough fighting men, lightly equipped, capable of rapid movement and swift action in broken, mountainous terrain. When employed with a full ap-



preciation of their capabilities and limitations they make excellent soldiers.

In the early stages of the Tunisian Campaign, it was deemed necessary to use several *goums* on defensive missions to hold important terrain features against the expanding German bridgehead, while British and American forces were being rushed eastward from Algeria. Much credit must be given these troops for delaying the advancing Germans, but this type of employment, due to their light equipment, proved to be costly when the Germans attacked with armor, supported by artillery fire.

In the final Allied assault on the Tunisian pocket, however, *Goumiers* together with other French forces were used with notable success on the north flank of the Allied Armies. This coastal country is wild and rugged, similar to their native Moroccan mountains. Here was a job for which their training and equipment best suited them. Night raids, in which they freely indulged their passion for "head-lifting," soon struck understandable terror into the heart of many a "superman," and it was here that some of the legends about them were born. There can be no doubt that their relentless ferocity and cold determination to find and silently destroy the enemy at night, materially assisted the advance. The *Goumiers* along with other French forces, triumphantly entered Bizerte on May 8, 1943 with the United States 9th Infantry Division.

The 4th *Tabor of Goums* was part of the United States Seventh Army in the Sicilian Campaign. This battalion arrived on the island on D + 4 with 10 officers, 832 enlisted men and 243 horses and mules. It was attached to the 3d Infantry Division with the mission of protecting the division's right (north) flank. *In the drive on Palermo it marched and fought without rest over 72 miles of unbelievably difficult terrain in something less than four nights and days.* During the later stages of the campaign, it was given the difficult successive missions of protecting the left flank of the 1st Infantry Division and, following that, of the 9th Infantry Division.

The following account, extracted from the 4th

*Goumiers come to war with their women, who do not seem to mind a few odds and ends of shrapnel. The group above was recently bivouacked near Casert, Italy.*



*Tabor's own report, is illustrative of one of their numerous engagements with the enemy.*

"On the night of 28-29 July, the 4th *Tabor*, then attached to the 1st Infantry Division, received orders to occupy Monte Caniglio without delay. This mountain is 3,500 feet high with precipitous slopes falling sheer from the peak to a small plateau at an altitude of 3,000 feet. The descent from the plateau to the adjacent valley is abrupt, over rocky terrain pocked with small caves.

"The 66th *Goum* was directed to make the initial attack. There was no moon and a low hanging fog covered the hills. Exact enemy locations were not known. Following a night march, the *goum* reached the base of the objective at 0645 hours. The *goum* commander was informed by a civilian that the mountain was occupied by the Germans in force. The advance was started at once in column of platoons.

"The 1st (leading) Platoon came under small arms fire immediately. The 2d Platoon was committed on the right of the 1st Platoon, and the *goum* advanced rapidly up the mountain, across the plateau and to within a few yards of the enemy position. Heavy losses were sustained by the frontal and flanking fire of enemy automatic weapons at close range. The 1st Sergeant was killed and the *goum* commander seriously wounded.

"The *goum* was forced to withdraw a short distance to the plateau.

"The mountain had been enshrouded in fog which lifted at about this time (0815 hours). The 68th *Goum*, from a position on the right, immediately attacked the enemy left. The 3d Platoon of the 66th, which had not been committed, attacked the enemy right on the initiative of the platoon commander. This double envelopment was supported by the *tabor* mortars. The Germans attempted to withdraw but were unable to do so.

"The attack was pressed home, and the position stormed. Some of the enemy may have escaped. No prisoners were taken. Mission accomplished."

Three *tabor*s of *goums* also figured prominently in the expulsion of the Germans from Corsica. *Goumiers* are distinguishing themselves in Italy. It is not necessary to romance in order to extoll the virtues of such soldiers.

In laconic military English the report of operations of the United States Seventh Army in the Sicilian Campaign reads:

"The 4th *Tabor of Goums*, from the Goums Marocains of the French North African Army landed at Licata on 14 July and was attached to the 3d Infantry Division. Corresponding in strength to an infantry battalion, the 4th *Tabor* fought with the 3d Division during its advance on Sciacca, and later was attached to II Corps for operations in the rugged country of northeastern Sicily.

"It gave a good account of itself throughout the campaign."



# Training Commandos

*by Brigadier Lord Lovat*  
*In an Interview with Gordon Holman*

CARDED



The naval bombardment shells burst among the shore batteries during the Dieppe raid.

THE problem of training is ever-present for Britain's Commando troops. Training may mean that the raw material coming into a Service has been taken in hand by officers and noncommissioned officers and given a degree of polish that appertains to the whole of that Service. With an occasional brushing up, that polish will remain for years. But the same word "training" can be used in an entirely different sense.

Perhaps the best way to explain this other meaning is by an example. In breeding and training thoroughbred animals, the aim is to bring them to the highest possible pitch of perfection. And that is the way Commando troops have to be trained. There is, however, an added complication. In training thoroughbred animals, one knows the moment at which it is desirable to reach the peak of perfection. Commando men must, on the other hand, be at the top of their form whenever required—which is often at very short notice.

The British Special Service soldier is so conscious of the importance of training that he would not object

to this analogy. The greatest assistance in training a shock trooper, is the trooper's own understanding of the problem and his desire to help.

Much has been made at one time or another of the tough physical tests imposed in the British Commando Service. It is true that men swim rivers, climb mountains, live in the open in all weathers and cover distances across country which would be considered beyond the powers of first class infantry units. But this is the least important side of the build up. Plenty of men could be found who, after a short time, would do these things as well as the hand-picked Special Service troops.

There are other qualities that are of much greater importance—particularly, discipline, powers of leadership, initiative and self-reliance. These are the things looked for in picking the Special Service soldier and which are sought to be developed in the course of his training.

This might not work in the training scheme of an army, but applied to individual volunteers in a limited



### BRIGADIER, THE LORD LOVAT, D.S.O., M.C.

Lord Lovat, 32 years of age, received his early military training in the Scots Guard. In July 1939 he joined the famous Lovat Scouts, a regiment locally raised for the guerilla tactics of the South African War.

When the Commandos were first formed, Lord Lovat volunteered and served with No. 4 Commando until he became Commander of the Special Service Brigade, which was then commanded by Brigadier R. Laycock, now the Chief of Combined Operations.

Lord Lovat was awarded the Military Cross for a singularly daring and successful raid in the Boulogne area, where he succeeded in inflicting heavy casualties on the enemy without loss to his force. At Dieppe he led No. 4 Commando, who had the most inspiring and successful record of any troops present in the Dieppe Raid. It was largely by Lord Lovat's efforts that No. 4 Commando became the highly trained body of men who succeeded in putting out of action the German battery at Varangeville so early in the engagement. For this most successful action he was awarded the D.S.O.

Now a Brigade Commander, Lord Lovat is an intensely practical soldier and many of the Commando methods of training are attributable to his fertile mind. His insistence on physical fitness and proficiency with all weapons is undoubtedly a contributable factor to the invariable success which has always attended any undertaking on which he has embarked.

and specialized force, it can produce remarkable results. I am prepared to take myself as a case in point. I was for eight years in the Scots Guards in peacetime, and

Brigadier (then Lt. Colonel) Lord Lovat, (left) Leader of No. 4, Commando, compares notes with another officer on returning to an English port after the raid on Dieppe, August 19, 1942. It was Lord Lovat's Commando that stormed the enemy defenses at Varangeville and carried out the vital task allotted to them of destroying the German howitzer battery on the silencing of which depended the whole success of the operations.

British Official Photograph



no doubt passed for a typical and irresponsible young officer. It needed the demand on the individual, as imposed by the Commando system, to produce better qualities.

As a personal view, I would add that I favor the extension of training methods that make more of the individual. It is increasingly the British Army's practice to consider the soldier as an individual, instead of merely as a unit in a platoon. All recruits, whichever branch of the Army they wish to join, now go through the same Basic Training Centers. There they are watched for signs of latent leadership and individual ability. Selection Tests are given to each man to determine his skill or "trainability," and he is drafted to the branch of the Army for which he is considered to be most suitable as a result of these tests.

The many photographs that have appeared of Special Service troops returning from various forms of combat with blackened faces, torn and mud-stained clothing and wearing strange boots or shoes, have given a general impression of a freedom from that discipline and smartness that is expected in the good, orthodox soldier. It is an entirely false impression and I would like to dispel it once and for all.

The same standard of discipline is expected in a British Commando soldier as in the Guards. An order is never given as a request. A weak officer or NCO cuts no ice in a Commando unit, and he will never make the grade. Once fighting starts, there is instant obedience; and that the men will fight—and continue to fight—like wildcats, goes without question.

There is nothing in the dress of the Commando soldier that suggests ceremonial. He often wears a woollen cap in place of the usual steel helmet. There is a reason: so that he can run fast, move easily and make less noise at night. But I am prepared to wager that in the Victory parade, there will be no smarter soldiers than the Commando contingent in their berets.

Fieldcraft has been stressed in the modern training of Commandos, especially for scouts, snipers and patrol personnel. To some men, such as those from the Scottish highlands, it has been merely the application of what they already knew, to war conditions. To others, such as Cockneys, it is entirely new. It is then that quickness and the capacity to learn is essential. It is one of the reasons, too, why it is felt that the ideal age for Commando men is between twenty and twenty-five, although there are plenty who have proved themselves first class up to thirty.

Following are some typical fieldcraft notes:

Much can be learned by a correct interpretation of noises emanating from enemy positions at night. In training many of these are reproduced in order that they may become familiar to the ear. The tests are best carried out on a still, dark night. Among the noises easily reproduced are: a party of men crossing a wire fence or digging a trench; changing magazines; hammering picket and angle irons; opening or closing rifle



bolts; posting of sentries, striking of matches, talking or whispering; cutting of barbed wire.

The sound effects with untrained men should begin at 200 yards. Then the distance should gradually be lengthened and any fully trained man should see the strike of a match at 600 yards. Smell, too, is important, and tobacco smoke and farm buildings should be easily detectable. The identification of these and other noises can warn good patrols that the enemy is assembling for a counterattack, that a counter patrol is out, that a post is digging in or being evacuated, and so on.

It is not difficult for highly trained men to differentiate between sounds of offense and defense. It should be impressed on all that of the many noises heard at night on an occupied coast or in No Man's Land, practically all may be accepted as coming from the enemy, because the position of our own patrols will be known. Commando men are trained to freeze to the ground when any unidentified movement is heard. They are taught that at close quarters, the first man to move is the first man to die, because he will have given his position away.

All night training is of the utmost importance and among the general points stressed in this connection are:

If it is possible, always move upwind. Apart from the advantages gained in detecting smells and sounds, there are the watch-dogs, which are frequently used by the Germans.

Always keep the moon behind you. Never fail to check the position of the moon before going out on patrol. It is as important to keep off skylines at night as it is in the daytime.

If you are wearing a leather jerkin, or any equipment that will offer the slightest reflection of light, wear it inside-out at night.

In fog—the most difficult of all weathers in which to operate—remember that sound travels very easily and yet the direction is more uncertain than at any other time.

Remember to halt and listen at frequent intervals. Never give way to the temptation (which seems to come to everybody at such times) to cough or clear one's throat. Unfit men, heavy smokers or those suffering from colds should never be permitted to do key work at night.

The aim of a first class scout should be to locate the enemy post and then either report its whereabouts or lead the patrol past it, unobserved.

In training, as at all times, officers have a tremendous responsibility in a Commando. All the officers under my command, I have chosen personally and feel that I could answer to the full for any one of them. Their qualities have been known to me in the past. They *must* have the complete and unquestioning confidence of their men. They do it by force of example.

Officers of a Commando do exactly the same as other ranks in their training, but are expected to do it slightly better. They sleep in the open, shoot straight, run fast, swim, prepare their own food and are given no more



British Official Photo.

This returning soldier lost the leg of a trouser at Dieppe. Taking part in this raid were Canadian and United Kingdom Special Service Troops, a detachment of a U. S. Ranger Battalion and a small contingent of Fighting French. The force was carried and escorted by the Royal Navy and air support was provided by the R.A.F.

transport facilities than the Special Service soldier. They are part of the team—and the team spirit is fundamental to all Commandos.

From the first, it has been the aim to make every Special Service man "self-sustaining." He has no supply column behind him; every bullet counts, and he must fight and feed and rest as a self-contained unit. At all times he is left to fend for himself and, unless very special conditions arise, every night of his life he must provide his own food and resting place out of a small monetary allowance made to him.

It is not unusual to be told over night that he must report early next morning at a point twenty or thirty miles away. (I have known it to be as much as eighty.) How he gets there and at what time he travels is his business, but he must be there on time.

That brings one to the question of punishments. There are hardly any punishments for the Special Service troops that could be taken as parallel to those which apply to the more regular units of the Army. There are no fatigues, for instance. It is my experience that, once the true team spirit is achieved, there are hardly any occasions on which a man knowingly lets his side down.

Generally speaking, I give a man three chances. Then the one punishment that all Commando troops—officers and men—dread, has to be applied. His papers are marked "R.T.U." and he is "Returned to Unit."

To a very large extent we can pick our personnel from all the units of the British Army. The Commando which I took to Dieppe had the representatives of 65 different regiments in it. Indeed, we were even more representative because United States Rangers fought with us there. One of the Rangers won the British Military Medal, and I believe he was the first U. S. soldier in this war to kill a German soldier at close range.



# WAR

Gun cotton charges explode in the lake while tracer ammunition is fired within a few feet of trainees during night exercises.



British Official Photos

*by Lieutenant Colonel T. A. Lowe  
British Army*

A RECRUIT'S training in the British Army consists of 21 weeks, but in the first six of these he stays in the vicinity of his barracks or camp and learns the basic subjects of drill and weapons training. Only for one short period each week is he taken out at night, and then he may march a few miles in silence, or stop on the way for a lesson in the recognition of silhouettes.

This first six weeks is called primary training, but later the recruit moves to a training center for a period of 10 weeks, and there he is gradually introduced to night work. The process is slow but thorough for the war has proved the necessity of movement by night under nearly all circumstances. Fear of the dark is a natural handicap to city men, but clumsiness in the dark is often the habit of the countryman. Both must be taught that their comrades may depend on their future skill in the dark, and this is the hardest of lessons.

In the early stages, a recruit is taught by daylight the formations in which he might have to move on patrol at night, and his first serious exercise in darkness is that of patrolling.

Britain's War Office demands that a standard of perfection in night patrolling shall be reached, because in this war there is often no "No Man's Land" in the sense of defined space between the opposing lines. A night patrol may cover 22 miles in a night, and the leaders, therefore, must be competent to march on a compass bearing without losing their way.



With faces blackened, troops await zero hour.

Leaders are "briefed" for their night patrols on a similar system to young pilots in the Royal Air Force. The commanding officer holds a patrol conference in the morning. The leader, who may be either an officer or a noncommissioned officer, is then given plenty of time to take out his section on a daylight reconnaissance from the best viewpoints.

After that, both the leaders and their patrols are fed and rested. When the hour of parade arrives they are very carefully inspected. There must be no identification badges, no equipment which rattles or shines. Weapons and ammunition must be in proper order. Steel hats are not used. Instead, the men wear woolen caps and they carry only an iron ration in their pockets.

They may be out for seven or eight hours; they may get lost; they may fall into rivers; they may get split up and separated. Indeed, their initial experience is often one of complete bewilderment and failure. This is expected at first, and it is not regarded with any great seriousness, but there is one thing the patrol cannot escape on its return, and that is a formal interrogation.

No matter how many the mistakes, the tale of them must be told faithfully, and it is this check-up which brings home to the patrol the importance of its night training. This is something new in military training and a great improvement on the old methods.



# AFTER NIGHTFALL

The next stage is a bivouac by night. For this, the equipment is the same as for a night patrol, but ground sheets are carried, and so are the new ration packs which are designed to provide a man with three hearty meals a day.

Bivouac training is important because it teaches men to look after themselves. The ground sheets can be linked together (preferably in threes), to form a perfect shelter for three men, and the food can be cooked and served palatably for small parties. It is at this stage that the helpless man is discovered—the man who cannot make himself comfortable outside his own bed at night, and the man who will do anything rather than cook himself a proper meal. He is marked down for extra bivouac training until he has mastered the essentials.

Next comes more serious night work—a platoon digging and wiring a defensive position and then occupying it for the night. Again, much responsibility rests with the leaders who have to post their sentries, organize rest and meals for the men, and then may have the additional job of repelling an "enemy" attack. At the end of this period, all concerned realize that they are learning a highly skilled craft.

Usually, about the sixth week at the training center, night firing exercises are staged. These include all of the platoon weapons—rifles, bombs, light machine guns and mortars. The technical name for this period is "battle inoculation." At first it can be a terrifying affair, as tracer bullets are used, and some of them come extremely close to the recruit night patrols as they work, but at least it is stimulating, and at this stage it has been noticed that the recruit is merging gradually into the status of a highly trained soldier.

During his last week at the training center, the recruit goes out with his platoon for three-day marches, covering 60 miles, and at the end of this, he takes part in another realistic field firing exercise with field guns used to support his movements in unknown country.

After sixteen weeks of training have passed, there are still five more before the recruit can be passed as a fully trained soldier. This period is spent in a reserve division.

The recruit is working with a company now, and his first experience will be a convoy drive with battalion transport of about 15-20 miles, with an ambush at the end of it. He is tumbled out of trucks and henceforth must foot-slog into battle. If he eventually reaches a comfortable billet, it is probably attacked to see if the sentries are properly posted.

On the next day, he may march for eight or ten miles and be settling down for a nice rest afterwards when told to get into contact by night with an enemy another

12 miles off. It is hard work for all, and the hardening-up process is severe, but at the end of these last five weeks, the recruit feels that he has done something great, and that he *is tough*.

Actually, he *is* tough, and rapidly becoming a highly skilled fighting man ready to meet an equally highly skilled enemy. There is little sickness during this five weeks with the reserve divisions, though there are many blisters. Even those become fewer as the training gets harder.

The recruit I have been describing is an infantryman, but the system is similar for all branches of the service and is only modified for technical reasons. Convoy drivers naturally are faced with different problems involving mechanical breakdowns, wheel-changing, and so on as they do in daylight, and the same applies to the Royal Armoured Corps with their armored cars and light tanks.

In all courses, the system of interrogation is introduced. After a night patrol, the trainee is asked, "Were such-and-such bridges held? How deep was the stream? What route did you take on the other side? Any incidents on the way? What building did you pass? Was the objective held? How close did you get to the enemy? Were you fired at? What sort of fire and from where? Did you see anything else that was interesting?"

It is this sort of treatment that makes the dry bones of training and maneuvers live. Without it, they can be very dry bones indeed—and a bored soldier becomes a bad soldier.

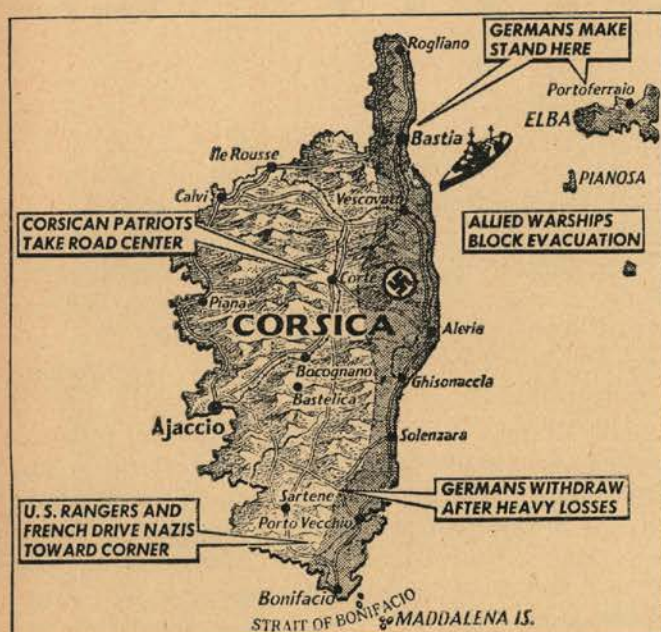
N.C.O. instructors watch their students at work behind the "Moascar stocks," a device constructed so that they can handle different types of mines and booby traps in the dark.





# The Liberation of Corsica\*

## — A Test Case in the Libe



FOR the first time, enemy occupied territory has been liberated by its own people. Apart from an American commando detachment, which was landed from captured Italian destroyers on September 17th, the operation was a purely French one. The new French army, ships of the united French navy, the French air force and Corsican patriots combined in this first highly successful liberation operation.

### PREPARATION

This was no hastily prepared landing. Forces in Corsica had been at work preparing for the arrival of the French army ever since General de Gaulle appealed for continued French war effort in June 1940.

The valuable preliminary work accomplished in the years 1940, 1941 and 1942 greatly facilitated the task of Captain Colonna d'Istria, the patriot leader who was landed in Corsica in February 1943 to unite the island's resistance.

Captain d'Istria came from an old Corsican family and knew the island perfectly. Dressed in civilian clothes, he travelled tirelessly up and down Corsica, established points of contact, gave out instructions, watched what the army of occupation was doing, and little by little raised a secret army.

By the first of September he had 15,000 followers. Many of them had left their homes and families and were living in hiding in the forests. Thanks to the radio, they were able to keep constantly in touch with Algiers headquarters. Deliveries of arms, landed secretly, made it possible to store machine guns, tommy guns, grenades,

mines, explosives of all kinds, in the patriots' homes. All of these were brought from Algeria.

A price was set on Captain d'Istria's head by the German and Italian authorities, but the sinister O.V.R.A. was not able to lay hands on him. He lived like a wild creature in the heart of the woods and slept under a rock or at the foot of a tree. He was always kept well informed and was thus able to elude pursuit.

The Italians (then occupying the island) thought that Captain d'Istria's headquarters must be in the Sartene region where he was born. They searched the whole region a number of times, arrested about forty people, some of whom they tortured by burning their nails off with red hot coals. Every patriot except Colonna d'Istria was arrested, but this did not prevent the spirit of revolt from becoming stronger every day in Sartene.

Resistance went on organizing—children, women, old men, each doing his share as best he could. The women carried food to men who were hiding in the

French Moroccan Goumiers participated in the liberation of Corsica. Here one stands guard in a captured village.



\*A compilation from "The Lesson of Corsica," *La Lettre de la France au Combat*, Vol. III, No. 9, and "The Liberation of Corsica," *Free France*, Vol. 4, No. 4.



# ration of Occupied Europe

forests to escape the Italian Gestapo, and children were charged to take messages from one to the other. One youngster of fifteen was ambushed when he was carrying a note to an underground post hidden in the brush-covered country near Cutoli. He drew his revolver and shot an Italian, and then left his donkey behind and fled into the mountains.

At Salenzaro three Germans who had insulted a young girl were killed in the open.

Italian *carabinieri* began to be afraid to show themselves in the streets. For every patriot arrested, an Italian was killed. But Italian repressive measures were enforced by the Gestapo, which was in great strength there, and more and more arrests were made.

To avoid seizure, supplies had to be moved quickly. There were also many difficulties about receiving and transporting arms, most of which had to be carried by mules, or even on men's backs. One day a submarine unloaded between two Italian posts—one 200 yards away, the other 500 yards.

Since the British were very busy in other places, the delivery of arms only began to take place regularly in July and August. Every night, five British planes would drop their cargoes by parachute, on landing fields which had been designated and which were well guarded. A British submarine also shuttled to and fro. On every trip it brought in 5 tons. The submarine *Casabianca* in two trips brought in 27 tons. In this way 150 tons of arms, mostly tommy guns and hand grenades, were brought to the island. Only a very small percentage was seized by the Italians.

Plans for action were thought out so that people would not have to leave the outskirts of their own villages, but could carry out orders wherever they happened to be. Since the partisans had no rear guard and no system of supplies, they could not operate like regular troops. Each village, however small, had an Italian garrison, and the plan was to cut the throats of the officers as they lay sleeping, to attack small outposts, to put snipers in ambush, clear the ground of mines, cut the telegraph wires, and meet and guide friendly parachutists.

After these first missions of surprise attack were accomplished, real operations were to begin; that is to say, groups of men returning from missions were to join together to arrange ambushes, to seize barricades, harass convoys of trucks, cause bottlenecks and then withdraw into hiding in the heath lands, without waiting for any counterattack—in a word, create a state of insecurity which would paralyze the enemy and permit the French troops to land.



French Press & Information Photo  
Soldiers and patriots cut through Corsican Maquis (underbrush) and cut the German communication between northern and southern forces. Note the long line to the left rear.

Organized patriot resistance was to guarantee the French liberating forces free access to the port of Ajaccio. Without this help from within, the success of the landings could not be forecast.

## THE PATRIOTS TAKE AJACCIO

On September 8th, thousands of men greeted the news of the Italian surrender by demonstrating in the streets of Ajaccio. A deputation from the National Front made its way to the Town Hall and demanded that Corsica should rally to Free France. A list of collaborators was drawn up, and the same evening 23 collaborators were brought by the crowd to the police station to be locked up.

The next day, September 9th, there was a new demonstration. Nearly 15,000 Corsicans assembled before the War Memorial. Afterwards the patriots went to the Town Hall to lay out their plan for resistance. They had one fixed idea, to get rid of the municipal council, and above all of the Mayor, who was notorious for his Vichyism. The National Front sent a deputation to the police station to explain to the population that the patriots would henceforth take over the direction of Corsican affairs until liberation. On September 10th, fighting between patriots and the Germans started, shots were fired, six patriots were killed, and a large section of the population went into hiding.

German tanks, concentrated around Sartene, attempted to launch an attack against Ajaccio. They got as far as Cauro and were checked there by the patriots.





French Press &amp; Information Photo

The French Moroccan Goumiers in Corsica used native dress, American equipment.

who, carrying out their orders, cleared a large bridge-head at Ajaccio ready for the French army to land.

#### TROOPS LAND AT AJACCIO

The French were short of ships and planes, and since the operation in Corsica took place at the height of the battle of Salerno, and the success of this operation demanded that all available allied shipping and aircraft should be concentrated in that theater of operations, it was impossible to give any naval or air cover to the French landings.

On the night of September 11th, the French submarine *Casabianca* made two journeys to the island and brought the first company of shock troops. Two days later the destroyers *Fantasque* and *Terrible* brought up the rest of the battalion, as well as the new military governor of Corsica, General Mollard, accompanied by Colonel Deleuze, Chief-of-Staff. The shock troops' orders, General Martin told them, were to hold Ajaccio to enable the French navy to use the port for disembarking troops, and to hold the Campo del Oro airdrome.

Once the airdrome was firmly held by French forces, the next job was to get it in working order so that planes could be based on the island. The commanding general immediately gave orders for antiaircraft guns and quantities of airplane fuel to be brought over from Algiers. By this time the destroyers *Alcyon* and *Tempête*, and the cruisers *Jeanne d'Arc* and *Montcalm* were all bringing up reinforcements.

#### PATRIOTS AND TROOPS COÖRDINATE TO DRIVE OUT GERMANS

Meanwhile, patriots on the island, who had been fighting since September 9th, besides taking Ajaccio, captured Bastia in the north of the island, after a series of conflicts with German troops that resulted in a thousand dead to the enemy and the destruction of many tanks. After two successive attacks on Bastia, however, the Germans succeeded in retaking that town temporarily.

The patriots fought side by side with the Goumiers' shock battalion, the Moroccan Tirailleurs, and American Rangers. Soon the Germans realized that they could not use the main route from Bonifacio to Bastia for it was mined, mountainous, guarded by patriots, and very bad going for tanks. By then, all the enemy forces were concentrated in two areas of the island—in the south, in the triangle formed by Sartene, Porto-Vecchio and Bonifacio, and in the northeast between Ghisonaccia and Bastia.

Shock troops from Algiers went into action in the south on the 19th, and occupied Sartene, and the first signs of mass evacuation of that sector appeared on the 20th when the Germans began destroying their own supply dumps. The following day they evacuated Bonifacio, and two days later, Porto-Vecchio.

On the 24th, the position was considerably improved when the Allies provided the French Command with an L.S.T., and for the first time it was possible to bring over tanks and vehicles. The same day the steamer *Ville d'Ajaccio*, which had been recovered in Corsica, and the cargo-boat *Ville de Djidjelli* transported a large quantity of airplane fuel, and food for the civilian population.

The outcome of the operation was then certain. On September 25th, the French Command declared that

A Corsican patriot gives directions to a French reconnaissance car near Bastia.



French Press &amp; Information Photo



three-quarters of the island had been liberated. That day the Germans evacuated Ghisonaccia, and the following day Oletta, just south of St. Florent. The enemy was driven into the extreme north of the island, and it became clear that the Germans only intended to hold Borgo airdrome, the port of Bastia, and the beaches on the east of Cap Corse, to enable them to evacuate some of their remaining troops. The attack on Bastia was launched on the 1st. Meanwhile, shock troops and Italian forces were attacking Borgo, which they entered on the 3rd. Bastia, the last Nazi point of defense, fell the next morning.

#### CORSICA AFTER THE RECONQUEST

Corsica, which had been occupied by about 100,000 Axis soldiers, had received produce from France only very irregularly. When liberated, the island was faced immediately with two grave problems—one, the problem of supply; the other, the problem created by the continued presence of some 70,000 Italian soldiers on the island. These had taken no part in the military action against the Germans, although in some cases they had been used to keep open roads and communications, and the French population, which had had to put up with them as an army of occupation, felt very resentful toward them. As soon as Corsica was freed, however, the general services of supply were restored as they had existed in France in 1939, with a departmental director at the head; and on October 20, 1943, the French office of the Commissioner of Information, Algiers, reported on supplies to Corsica as follows:

"Bread, which was almost lacking, will now be distributed in daily rations of 300 grams (about 11 ozs.) per person instead of only 100 grams (3½ ozs.) for a worker. Two thousand tons of flour will be sent monthly.

"Shipments of condensed milk will amount to 120 tons a month to provide the rations of 30 cans of unsweetened, or 24 cans of sweetened milk for children under 18 months of age, instead of the 14 cans a month formerly allowed by Vichy.

"One hundred and eighty-five tons of sugar will be delivered monthly, permitting children to receive about 1½ lbs. monthly, instead of the 8 ozs. allowed under the Vichy regime. One hundred and twenty-six tons of noodles will be shipped monthly, *i.e.* about 1 lb. for each person. These will be the first noodles which have been obtainable in Corsica for many months. There will also be 46 tons of oil a month, allowing the ration of 150 grams which was supposed to be available under Vichy to be increased to 255 grams; and 35 tons of soap will allow ½ a pound for each child under three, and ¼ of a pound for other consumers. This soap will contain 72% instead of 10% saponaceous matter.

"In addition, 10,000 hectoliters of wine will be shipped monthly. This will make it possible to open the retail market again at prices which must not exceed 10 francs a liter, whereas wine cost 120 to 150 francs a bottle a few weeks ago.

"The solidarity of the French Empire and of the Al-



German matériel destroyed at Bastia during the liberation of Corsica. Bastia was practically demolished during the fighting.

French Press & Informa

lies with the liberated province has been demonstrated. Condensed milk and sugar have been furnished by the Allies, flour by Algeria, fish and cooked meats by Morocco, oil by Tunisia, and coffee by French West Africa.

"Regular convoys will go to Corsica to bring the population the manufactured goods which were entirely lacking. Twenty thousand pairs of shoes have already been sent, as well as medical supplies, a number of ambulances, motor fuel, coal, cement, metals, chemical products, clothing, blankets, knitting wool, sacks of jute, needles, and newsprint.

"What is immediately needed for agriculture has been calculated, and seed potatoes and grass seed will soon be on their way to the island.

"An expert has been sent to Corsica to study plans for the rebuilding of devastated regions, particularly the town of Bastia, which has suffered severely in the war."

#### SUMMARY FROM LONDON

In the unfolding of the Mediterranean campaign, the campaign for the reconquest of Corsica has its own significant place. . . . The Germans who escaped from Italian Sardinia may well have hoped to have held French Corsica. From their point of view there were solid reasons why they should have tried to keep it or, if that was not possible, to have denied its effective military use to the Allies for as long as possible. Its close relation to the southern coast of France and the northern coast of Italy gives it a strategic and psychological importance which the Germans are the last to have underrated.

Whatever his intention may have been, the enemy seems both to have miscalculated the speed with which the French and Allied forces from overseas would act and to have misjudged the ardor of patriotic rally of the islanders, so long under the usurper and the invader. The resistance movement in France is growing daily in strength and stature and is being heartened by the near approach, after a long waiting and many anxieties, of the victorious French and Allied arms.—(London Times, September 27, 1943.)



CARDED

# MULE PACK TRAIN

*by Technical Sergeant Robert Geake\**

**H**UNDREDS of Italian mules, roped together in pack trains, are filing day and night up and down rocky trails of the Appenines, carrying food and supplies to Fifth Army troops fighting above the "jeep line" in Italy.

Mule pack trains are the logical solution to the tremendous problem of supplying frontline troops who often must battle for days along trackless, wild mountain slopes, well beyond the end of tortuous goat trails.

One of the best of these outfits is the 3rd Infantry Division's mule train which has seen almost continuous action since the start of the invasion. Originally, the mules merely inspired wise cracks. Now the plodding creatures are an irreplaceable part of the division's fighting machine.

The mules were requisitioned or purchased in Sicily

★Hq. Fifth Army.

for use there in preparation for the Fifth Army's invasion. Lighter and "longer barreled" than the familiar Missouri mule of the States, the Sicilian mule is nevertheless sturdy and surefooted for mountain work. The mules pay off by keeping men alive and bringing them bullets with which to fight.

When the division is in action, the mules are assembled at picketlines at a "mule head" established at the farthest point toward the frontlines that can be reached by jeep. Motor vehicles grind up hazardous roads to these points, dump their food and supplies. The mules take it from there.

The mules are fitted with Italian pack saddles. Boxes of food and ammunition and other supplies, such as raincoats, overcoats and "long johns" in season, are lashed to these saddles. When carrying food, for example, three cases of K's or two cans of water and one case of K's are tied on each mule. (K's are individual cardboard boxes containing a can of chopped meat or

*Left: A mule pack train carrying rations for American soldiers picks its way across a rocky Italian slope. Supplies and ammunition must be hauled over this rugged terrain before they reach the Allied Fifth Army.*



Mules plod through the snow with supplies for advanced British infantry somewhere on the Italian front.





# S IN ITALY

eggs or a tin of cheese and biscuits for one man per meal. There are 36 such "meals" in a case.)

Platoons of mules are assigned to each unit as needed—sometimes in particularly rugged country a platoon to a battalion. The mules are roped together in threes and moved along by drivers who accompany the train. Under ideal conditions a pack train averages about one mile an hour over the mountains and completes one round trip a day.

The trains move, day or night, rain or shine. Last fall, along the Fifth Army front, there was mostly rain both day and night.

Since the units are constantly moving, maps are of little value. Train leaders follow communications lines. Signal men always lay these over the worst terrain possible to obtain cover. The trip is a long, weary test of scrambling over wet, muddy rocks, often under fire. The animals slip, throw their shoes and often fall. The 3rd Division's outfit required two days to make one pack; traveled seven miles on another. The average daily haul is a mile and a half.

Commanding this rugged company is Second Lieutenant George C. Costas of Shawnee, Oklahoma. Costas, now working with the oldest form of transportation, began with the newest—as a paratrooper. He is convinced the slow but sure method has its points. In his first combat mission as a parachutist he was shot down over Sicily. Mules always bring him back.

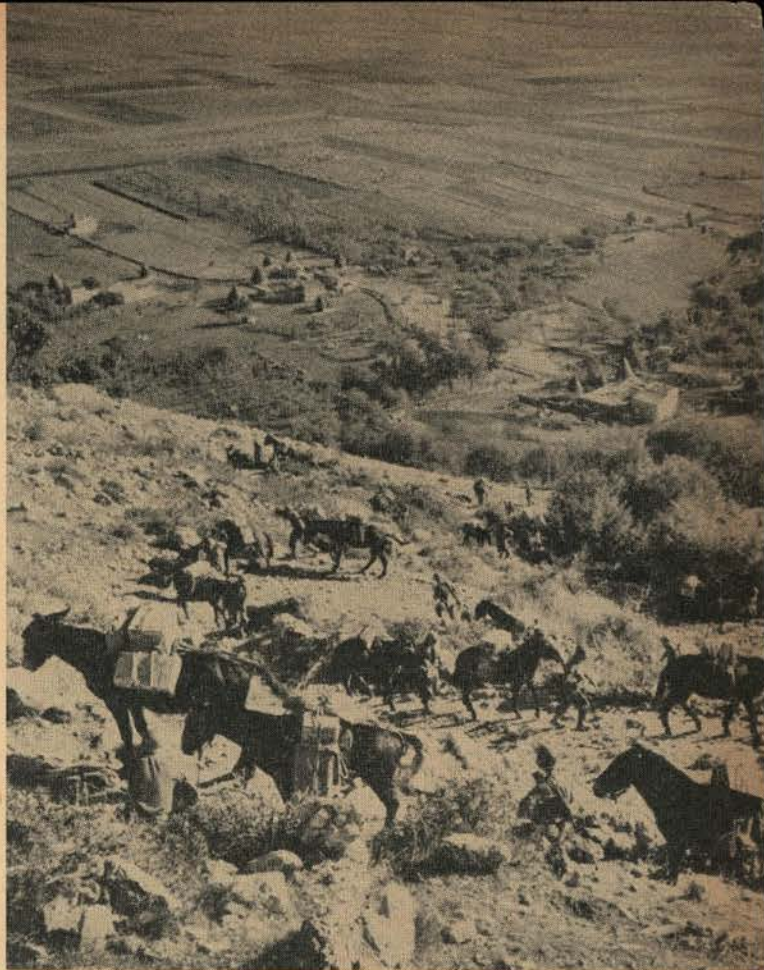
"The biggest kick in this job is seeing those front-line soldiers eat," Lt. Costas said. "Sometimes we're delayed by enemy fire, and when we finally arrive, the men are ready to throw kisses at those mules. Once we fed C rations to a group of men who had not had a bite of food in two days. One fellow gulped down three cans of cold hash as if it were hot fried chicken."

Three blacksmiths keep the mules' feet in shape. Most of the time these men are replacing the long, flat Italian shoe with the shorter American model, which gives the animals much better footing. Although blacksmiths before the war, the men on this job never ex-

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Out where the war is being fought in primitive reality—up steep mountains, across swift streams, through mud and slush, on native trails remote from the pavements to which our gasoline minds have become accustomed—out where hard facts supplant armchair theory, the humble four-legged mule again comes to the aid of the army. On his back go the supplies of gasoline, food and ammunition that otherwise would have to be carried on the backs of soldiers—a vital rôle in an age of mechanized warfare.

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Mule pack trains are meeting one of the most difficult problems of the army in Italy—keeping forward troops supplied with food, water and ammunition. Added to the natural difficulties of the mountains through which the Allied troops now are fighting, are the obstacles left by the retreating Germans. They blow up all bridges and culverts, tear up railroad tracks, fell trees, demolish houses in the mountain villages to block the roads, sow mines and booby traps. Mules can get through where wheeled vehicles would be stuck. Many infantry battalions now have their own "mule skinner" units. Photo shows one of the mule pack trains winding its way up a mountain trail.

pected to shoe mules in a mechanized army!

Any outfit that trails right into the frontlines on schedule every day is asking for trouble. The mule trains—always a good target—are frequently pinned down by mortar fire and snipers.

Curiously enough, the mules are never frightened by the noise of battle and completely ignore artillery shells which explode near by.

As long as the Fifth Army is in "mule country," its mule trains will be on the job, shells or no shells. Soldiers must eat. The men who feed them will be there, too, on time if the shelling and the rain is not too bad, possibly a little late if the Germans spot those mules' ears. It is just another of those plodding service jobs, which no one thinks about—just another job that keeps an army moving.

Probably no one will give the mule trains any medals. "That's okay too," Lieutenant Costas agreed. "We'd rather hear 'Oh, boy' from the guys we feed, than get a pack saddle full of medals."



# "Know Your Enemy"

by Colonel George W. Pardy\*

IN a recent attempt to impress a ten-year-old youngster with our knowledge, we glanced casually at a plane passing overhead and volunteered the information, "B-17, the Flying Fortress." Just as casually, he looked it over and in a very belligerent tone asked, "Oh yeah? An F or a G?"

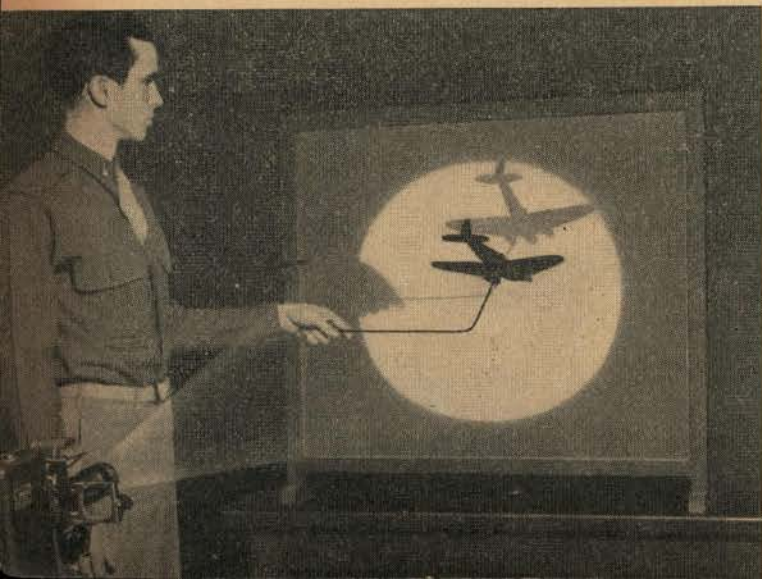
This incident illustrates what can be accomplished when interest in a subject is active. Recognition of ships, planes and tanks is based on two things: repetition and interest. And the hardest of these to generate is interest. Too often the teaching of *recognition* has been allowed to fall into the same routine procedure day after day, with the result that tremendously expensive errors are constantly occurring where they are most costly—in the combat zone.

The close coöperation of air support activities with ground troops makes it necessary for the latter to be able to recognize aircraft at the earliest possible moment. And if the training of men in one branch of the service about equipment of another branch is not made interesting, it is a cinch that the men will not have the knowledge tucked away in that corner of the brain which motivates instinctive action.

Present recognition training programs attempt to incorporate all available training aids in an effort to offset boredom and monotony. The great variety of material available on this subject at the present time should make it easy for any instructor to conduct a recognition course that would force him to put the SRO

\*Chief, AAF Training Aids Division.

The Shadowgraph is a device used to teach recognition of planes, ships and tanks. The instructor, holding a plastic model at the end of a wire, can vary the position at will. This gives the student an opportunity to study various silhouette aspects of the model. View behind screen.



(standing room only) sign outside his classroom constantly.

Recognition of enemy craft—air, land or sea—is one of the numerous imperative subjects in which Air Force troops must be trained. All over the world the AAF is developing new teaching methods, inventing synthetic training and demonstration devices, finding recognition short cuts, discovering graphic teaching techniques, breaking new ground in visual education, and turning out more effective training publications.

As the recognition phase of AAF Training Aids activities is mutual to Air and Ground training, this article emphasizes that topic with only brief mention of the many other phases of Air Forces training.

## SOME RECOGNITION TECHNIQUES AND DEVICES

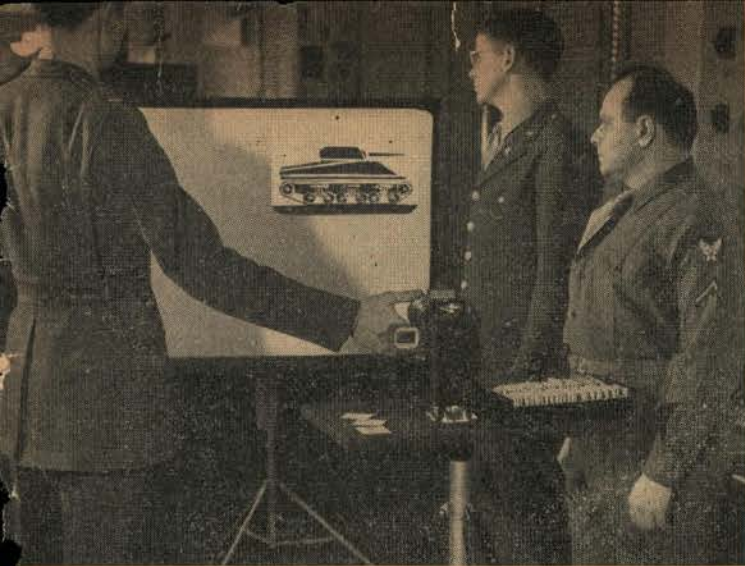
The flash-meter, consisting of a projector, shutter, screen and slides, heads the list of recognition training aids. Pictures are flashed on the screen at speeds from one second to 1/50 of a second to try to force recognition by total form. When presenting new planes or tanks, the flash-meter can also be used with the shutter open to show all the recognition features of the subject.

Supplementing the flash-meter is the shadowgraph, a device that permits motion to be imparted to models being studied. A white screen of some translucent material, a sheet or tracing cloth for example, stretched over a frame about four feet square, a light source behind the screen, a set of models and some wire rods with which to manipulate the models are needed for this device. The wire rods are inserted into the holes in the models which then can be maneuvered behind the screen so as to give realistic motion and countless views not covered by pictures or slides. Two models may be shown at the same time, in order to allow accurate comparisons to be made from all angles.

Another picture projection device is the baloptican. This is basically a box, a light, and a lens. The size of the unit depends on the lens available, since the focal length may vary considerably. The baloptican is for use with photographs or reproductions clipped from various printed sources without having to make special slides. With a homemade shutter on the baloptican, the instructor can approximate the flash-meter method in addition to having an unlimited set of slides.

All of these devices can be used alternatively for daily classroom work and for testing ability of the students, which must be observed carefully and stepped up as the course proceeds. During early periods of in-





Demonstration of the flash-meter and slide projection equipment used in recognition training. A camera shutter on the front of the projector allows "snap-shot" viewing.

struction, the instructor uses easy shots of planes; as the class progresses, he gradually works into the use of difficult angles and distant views. Tests, conducted on the same principle, grow consecutively harder as the proficiency rises.

Silhouettes are the basis of all recognition training. These are the three-view basic blueprints or engineering drawings of an airplane, adapted for recognition purposes and are available in poster form, in manuals, in slides and in the *Army-Navy Journal of Recognition*.\*

Perspective silhouettes are called sillographs and are made from photos of planes taken from various angles as contrasted with the flattened-out standard silhouette. Sillographs are easily made by tracing the outline of a plane from a photograph and then blacking it in solid for visibility.

Photographs are used in training to integrate the three silhouettes and to make the students familiar with equipment from all angles. They are available in slide form, in manuals and in the *Army-Navy Journal of Recognition*.

Scale models are of great value because they show the relative size of different planes or tanks and allow the student to see any angle of a given unit without being limited by the small coverage generally available in photographs.

The introduction of motion and the greatest simulation of reality is accomplished by Training Films. Whereas many students cannot study actual planes or tanks in operation, the training film gives an accurate impression of how they will appear in the field. New films are being made with an eye to interest and value, especially in showing action views and distant or semi-visible sequences which approximate true field conditions.

#### INTEREST—A VITAL NECESSITY

Coverage of the whole recognition training picture is presented in the *Army-Navy Journal of Recognition* which has been published monthly since September

1943. This Journal serves to keep the instructor abreast of the newest developments in Allied and Axis surface craft, armored vehicles and airplanes by making available information and pictures which would otherwise be hard to obtain. Articles on latest training methods and devices permit quicker distribution of ideas to the individual instructor.

Interest, the key to the training program, should not be very hard to generate with such a lineup of equipment and information. Even with only a few of the above items present, an instructor could go through a 20-hour course without once being repetitious.

Operational news is presented along with the first view of the plane or tank and serves to make the students want to see it again. The first questions usually asked are, "How fast will it go?" and "How many guns does it carry?" By combining such information with stories of actual combat accomplishments, it is easy to hold the interest of students and pass on to them a proficiency that will save lives and equipment.

What about the instructor's interest? Is he going to become bored after two or three months of staging the same thing over and over again? *The Instructor's Guide for Recognition Training in the Army Air Forces*, prepared by AFTAD, in addition to showing how the material can be used, also supplies data for the construction of home-made devices, planning and operation of a recognition school, games to stimulate interest, and various ways of testing the student's progress.

#### RECOGNITION BETWEEN GROUND AND AIR FORCES

For the cavalry, whether mounted on flesh or steel, high speed recognition seems more important every day. New tactics for low-flying planes, which bring the planes into closer contact with ground troops, results in more frequent opportunities for mistakes. Armored vehicles cover ground so rapidly that they often out-distance communication facilities, and small units operating on their own find it necessary to rely on recognition rather than official notification that certain planes will be overhead at a given time.

The Model Ship Recognition Display is used in recognition training. Here officers are shown receiving pointers on how to differentiate between naval vessels.



\*Restricted.



This same principle applies to Armored Vehicle Recognition Training. Fast vehicles, carrying longer range weapons than ever before, must be recognized from the air before a plane approaches near enough to receive a sitting duck shot—with the plane's crew still trying to count bogie wheels, turrets and guns.

While spending long hours training in tactics, operation, and maintenance, cavalry troops should, at the same time, allot a certain amount of time to the subject of recognition.

The only way to hold the attention of a man who has just finished an intricate problem dealing with his own equipment is to give him enough interest material to rouse him to new efforts. He must want to learn this

new subject for his own protection and for his own advantage when on the offensive. A semi-darkened room is a wonderful place to doze—especially with the drone of an instructor's voice lulling one off to sleep.

This interest cannot be aroused by shouting nor by compulsion. There must be an incentive to make students sit up and take notice of the class work. Such an incentive is the "pay-off" in battle. The slogan "Know Your Enemy" has become of paramount importance in this war. Daily, in every theater of operation, men in the air and on the ground are finding that split-second recognition of friend and foe—in plane, ship or tank—is a fighting man's best insurance.

## The Japanese Zero

**P**ARTS of five Japanese Zeros, shot down in the battle for the Buna Airstrip, have been used by the Army Air Forces to reconstruct one of the planes.

This Zero, known as the "Hamp," is superior in many respects to its predecessor, the Zeke, and has already been the source of a quantity of information for the AAF.

Used widely in the Pacific theater, both as a land-based and carrier-based plane, the Hamp's structure is all metal. Compared with American planes it is light and fragile.

The metal skin covering is extremely thin, a factor which frightens most pilots when they fly the ship the first time. In flight, the wing surfacing wrinkles like tissue.

The plane has low wing loading, a factor which affords high maneuverability.

Brakes on the Hamp are ineffective. It has a hook for carrier operation, probably one of the reasons why the braking mechanism does not function too efficiently.

Not too much consideration is given to the pilot of the Zero in its construction. There are no warning lights in the cockpit to tell him when to switch over to auxiliary gasoline tanks. The pilot allows his main tanks to

run dry then snaps on the auxiliaries. The ship carries four tanks—a belly tank, fuselage tank and two wing tanks. This gives it a good range.

The cockpit, which was built for small statured individuals, is small and uncomfortable. Everything is in easy reach. Its outstanding departure is of a structural nature. The cockpit is an integral part of the wing—the two being all one structure. The fuselage tail section and engine mounts join onto it.

The Hamp is powered with a Nakajima Sakae radial, 14-cylinder engine. It appears to be a copy of the AAF's Pratt & Whitney engines.

The plane packs lethal armament, but no armor to protect the pilot. The gasoline tanks are not leak proof. Two cannon are mounted in each wing and it has two 7.7 caliber guns firing through the propeller.

The Hamp is a killer, a dangerous adversary in aerial combat, and a weapon in which no pilot has yet been reported to have made use of a static line in the cockpit which can be used automatically to operate a parachute in bailouts. The static line is there, but the canopy cover of the cockpit has no emergency release and must be operated manually to permit egress by the pilot.



HAMP is Type O Mark 2 and, as can be seen from the crash photos, the air scoop is on top inside the cowling instead of below as in Zeke. The other noticeable variation is square wing tips.



# U. S. Army Planes

THE following is currently releasable data on the bulk of the aircraft models now in use by the U. S. Army Air Forces. Descriptions are given as to dimensions, power plants, performance, bomb loads, armament and protection. No alphabetical suffixes of aircraft in a given series within a basic type are given. However, the information given pertains to the latest current model of each plane. Performance figures pertain to normal operations.

## B-17 "FLYING FORTRESS"

*Description:* Four engine heavy bomber constructed as an all-metal, midwing monoplane with conventional retractable landing gear. Originally designed and built by Boeing Aircraft Corporation, but now also being produced by Douglas and Vega. Late models provided with external bomb racks and wing tip tanks. The crew varies from 9 to 11 men.

*Dimensions:* Span: 103 feet, ten inches. Length: 74 feet, 9 inches. Height: 19 feet, one inch. Tread



B-17 "Flying Fortress"

width: 21 feet, 2 inches. Wing area: 1,420 square feet. Approximate maximum weight: 60,000 pounds.

*Power Plant:* Four Wright R-1820, 1,200 hp engines with turbo superchargers. Hamilton 3-bladed automatic control full-feathering type propellers.

*Performance:* Rated at a speed of about 300 mph. Approximate service ceiling over 30,000 feet. Tactical radius of action—700 miles.

*Bomb Load:* 6,000 pounds.

*Armament:* Latest model has 13 x .50 caliber guns as



B-24 "Liberator"

follows: 2 in Sperry mid-upper turret; 2 in Sperry ball-type lower turret; 2 in tail turret; 1 in radio compartment; 2 in nose; 2 in chin turret; 2—one each side—at waist position.

*Protection:* Armor for: Pilot, co-pilot, radio operator, top-ball, waist and tail gunner. Navigator and bombardier are partially protected. De-icer boots, wing and tail; anti-icing for propellers. Equipped for desert operation.

## B-24 "LIBERATOR"

*Description:* Four-engine heavy bomber constructed as an all-metal, high-wing monoplane with hydraulically operated tricycle landing gear and Fowler flaps. Deep-bellied fuselage, twin tail. The crew varies from 9 to 11 men.

*Dimensions:* Span: 110 feet. Length: 66 feet, four inches. Height: 17 feet, 11 inches. Tread width: 25 feet, 7½ inches. Wing area: 1,048 square feet. Approximate maximum weight: 60,000 pounds.

*Power Plant:* Four Pratt & Whitney R-1830, 14-cylinder 1,200 hp engines with turbo superchargers. Hamilton Standard 3-bladed automatic control full-feathering propellers.

*Performance:* Rated in 300 mph class. Approximately service ceiling over 30,000 feet. Tactical radius of action up to 750 miles (normal mission). Has carried out many long range missions.

*Bomb Load:* 6,000 pounds.

*Armament:* Ten or more .50 caliber guns: 2 in nose turret; 2 upper turret; 2 lower turret; 2 waist guns; 2 tail turret.

*Protection:* Armor for all crew members in battle



stations from rear and partially from front. Leak-proof tanks and bullet-proof glass.

### B-29 "SUPERFORTRESS"

*Description:* Four-engine very heavy bomber. Manufactured by Boeing and other major aircraft manufacturers.

*Power Plant:* Four Wright Cyclone 18-cylinder radial air-cooled R-3350 engines 2,200 hp. Hamilton Standard 4-bladed propellers.

*Performance:* Long range, high altitude, heavy bomb loads.

*Armament and Protection:* Heavy armored and armed with multiple-gun and power-operated turrets.

### B-25 "MITCHELL"

*Description:* Twin-engine medium bomber constructed as an all-metal, midwing, land monoplane. Twin tail, tricycle landing gear. Crew of 5 or 6. Manu-



B-25 "Mitchell"

factured by North American at Inglewood, California, and Kansas City, Missouri.

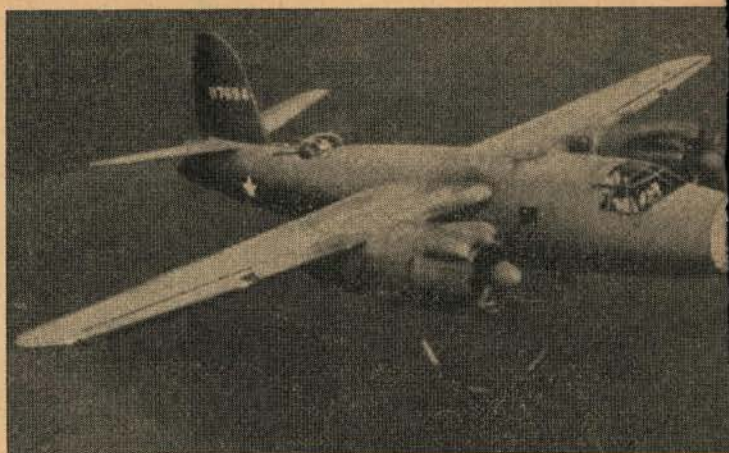
*Dimensions:* Span: 67 feet, 6 inches. Height: 15 feet, 9 inches. Tread width: 19 feet, 4 inches. Wing area: 610 square feet. Length: 51 feet, 11 inches. Approximate maximum weight: 35,000 pounds.

*Power Plant:* Two Wright R-2600 air-cooled radial 14-cylinder 1,700 hp engines, with 2-speed turbo superchargers. Hamilton Standard 3-bladed, hydromatic full-feathering propellers.

*Performance:* Rated in 300 miles per hour class. Approximate service ceiling 25,000 feet. Tactical radius of action—400 miles.

*Bomb Load:* 2,000 pounds.

*Armament:* Attack version: 1 x 75mm cannon. Fourteen x .50 caliber machine guns, including four in power turrets. Bomber version: Regular bombardier nose, no cannon, 12 guns.



B-26 "Marauder"

*Protection:* Armor for all crew members at battle stations. Leak-proof tanks.

### B-26 "MARAUDER"

*Description:* Twin-engine medium bomber constructed as an all-metal, high-wing land monoplane with single tail. The crew is normally 6. Manufactured by Martin. Has tricycle landing gear.

*Dimensions:* Span: 71 feet. Length: 58 feet, 2 inches. Height: 21 feet, 6 inches. Wing area: 623.6 square feet. Tread width: 22 feet. Approximate maximum weight: 35,000 pounds.

*Power Plant:* Two Pratt-Whitney R-2800 air-cooled radial type, 18 cylinder engines developing 2,000 hp and equipped with a 2-speed engine driven supercharger. Four-bladed Curtiss constant speed full-feathering propeller.

*Performance:* Rated in 300 miles per hour class. Approximate service ceiling 20,000 feet. Tactical radius of action—350 miles.

*Bomb Load:* About 2,000 pounds.

*Armament:* 12 x .50 caliber guns, including 4 in power-turrets.

*Protection:* Armor for: pilot, co-pilot, nose gunner, tail gunner and radio operator. Leak-proof tanks.

### B-34 "VENTURA"

*Description:* Twin-engine light bomber constructed as an all-metal, midwing monoplane with hydraulically operated landing-gear flaps, bomb doors and brakes. Twin tail. Crew of five: pilot, bombardier-navigator, turret gunner, radio operator, tunnel gunner. The B-34 is an enlarged version of Lockheed "Lodestar" commercial transport, originally built for the British by Vega Aircraft Corporation, a Navy version of the PV-1. The AAF acquired a number of B-34s for use as gunnery trainer, navigator trainer and glider tow planes. A number are now in combat action.

*Dimensions:* Span: 65 feet, 6 inches. Length: 51 feet, 5 inches. Height: 12 feet. Tread width: 15 feet. Wing area: 551 square feet. Approximate weight: 30,000 pounds.



**Power Plant:** Two Pratt & Whitney twin row R-2800 radial air-cooled 18-cylinder 2,000 hp engines, with 2-speed geared superchargers. Hamilton 3-bladed automatic control full-feathering propellers.

**Performance:** Rated in 300 miles per hour class. Approximate service ceiling 30,000 feet. Tactical radius of action—350 miles.

**Bomb Load:** 2,000 pounds.

**Armament:** AAF version: 2 x .50s and 2 x .30s in nose; 2 x .30s in sides; 2 x .50s in upper turret; 2 x .30s in lower rear tunnel.

**Protection:** Armor for all crew members.

#### A-20 "HAVOC"

**Description:** Twin-engine light bomber constructed as an all-metal, midwing monoplane, tricycle landing gear and single tail. Crew of three. The A-20 is a later version of the British DB-7 or "Boston." It is used for ground attack, skip-bombing, and also torpedo attack against naval units. Manufactured by Douglas.

**Dimensions:** Span: 61 feet, 4 inches. Length: 48 feet. Height: 18 feet, 1 inch. Tread width: approximately 17 feet. Wing area: 465 square feet. Approximate maximum weight: 25,000 pounds.

**Power Plant:** Two Wright R-2600, 14-cylinder, 1,700 hp double radial air-cooled engines, with two-speed supercharger. Three-bladed Hamilton Standard hydromatic propellers.

**Performance:** Rated at a speed of over 320 miles per hour. Service ceiling over 20,000 feet. Tactical radius of action—300 miles.

**Bomb Load:** Approximately 2,000 pounds.

**Armament:** Bomber version: 5 x .50 caliber guns.



A-24 "Dauntless"

tail and dive brakes. The crew consists of two—pilot and gunner. Manufactured by Douglas. Designed for dive bombing or scouting operations from either shore stations or aircraft carriers. Will take off on ground or carrier deck with or without aid of catapult, and will land on an ordinary landing field with or without landing flaps or on a carrier deck with arresting gear.

**Dimensions:** Span: 41 feet, 6 inches. Length: 33 feet. Height: 10 feet. Tread width: 10 feet. Wing area: 325 square feet. Approximate maximum weight: 9,000 pounds.

**Power Plant:** One Wright R-1820, 1,200 hp engine. Hamilton 3-bladed constant-speed propeller. Two-speed supercharger.

**Performance:** Rated at a speed of over 230 miles per hour. Service ceiling over 20,000 feet. The tactical radius of action is more than 200 miles.

**Armament:** Two .30 caliber guns in rear cockpit. Two .50 caliber guns in nose.

**Protection:** Armor protection for pilot and gunner. Leak-proof tanks and bullet-proof glass.

#### A-36 "MUSTANG" FIGHTER-BOMBER

**Description:** Single-engine light bomber (attack) constructed as an all-metal, low-wing monoplane with single tail. Equipped with bomb racks and diving brakes. Crew consists of one—pilot. Manufactured by North American. Developed from the P-51. Similar in appearance to the ME-109E.

**Dimensions:** Span: 37 feet. Length: 32 feet, 3 inches. Height: 11 feet, 1 inch. Tread width: 11 feet, 10 inches. Wing area: 233 square feet. Approximate maximum weight: 10,000 pounds.

**Power Plant:** One Allison V-1710 engine. Curtiss electrically controlled constant-speed 3-bladed propeller.

**Performance:** Approximately 400 miles per hour.



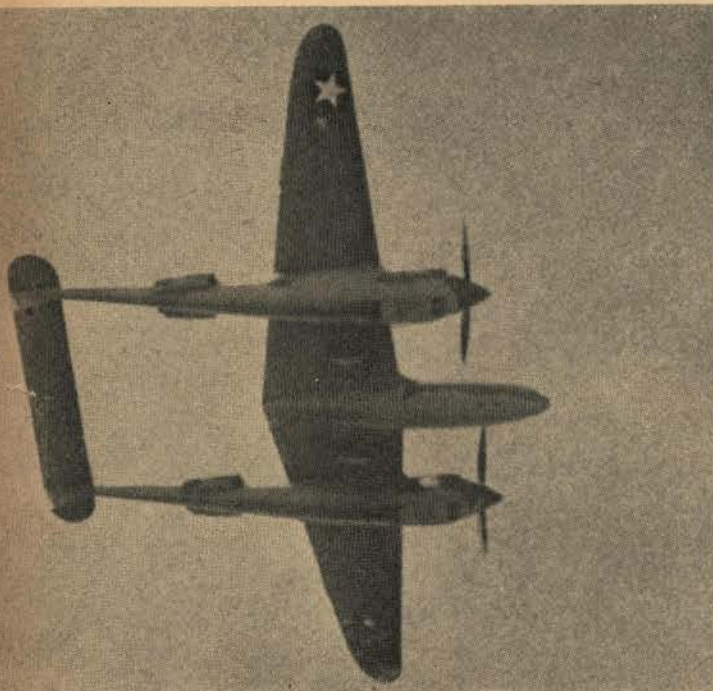
A-20 "Havoc"

**Protection:** Armor for pilot, upper and lower gunner. Leak-proof tanks and bullet-proof glass.

#### A-24 "DAUNTLESS"

**Description:** Single-engine light bomber constructed as an all-metal, low-wing land monoplane, with single





P-38 "Lightning"

Service ceiling over 25,000 feet. The tactical radius of action is 200 miles.

*Bomb Load:* 1,000 pounds.

*Armament:* Six .50 caliber guns, two in nose and four in wings.

*Protection:* Armor, leak-proof tanks and bullet-proof glass.

P-38 "LIGHTNING"

*Description:* Twin-engine fighter constructed as an all-metal, midwing monoplane with twin bombs supporting twin tails. Hydraulically operated flaps and nose wheel. Crew consists of one—pilot. Built by Lockheed. Component parts and finished airplanes will also be manufactured by Consolidated Vultee.

*Dimensions:* Span: 52 feet. Length: 37 feet, 10 inches. Height: 12 feet, 10 inches. Tread width: 16 feet, 6 inches. Wing area: 328 square feet. Approximate maximum weight: 18,000 pounds.

P-39 "Airacobra"



*Power Plant:* Two Allison V-1710 engines with turbo superchargers. Two Curtiss electric 3-bladed constant-speed, full-feathering propellers.

*Performance:* Approximate maximum speed is 400 miles per hour. Service ceiling over 40,000 feet. The tactical radius of action is over 400 miles.

*Bomb Load:* 2,000 pounds.

*Armament:* One 20mm cannon and four .50 caliber guns in nose.

*Protection:* Armor for pilot, front and rear. Leak-proof tanks and bullet-proof glass.

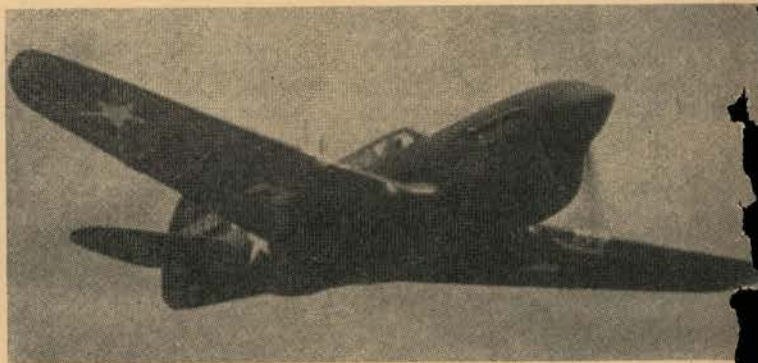
P-39 "AIRACOBRA"

*Description:* Single-engine fighter constructed as an all-metal, low-wing, land monoplane with tricycle landing gear and single tail. Crew of one—pilot. Manufactured by Bell. Power plant located behind pilot and drives propeller by extension shaft.

*Dimensions:* Span: 34 feet. Length: 30 feet, two inches. Height: 11 feet, 10 inches. Tread width: 11 feet. Wing area: 213 square feet. Approximately maximum weight: 8,500 pounds.

*Power Plant:* One Allison V-1710 vertical "V" type engine of 1,325 hp, 3-bladed Aero Products hydraulic, selective, or automatic controllable pitch propeller.

*Performance:* Rated at an approximate speed of 375



P-40 "Warhawk"

miles per hour. Service ceiling over 35,000 feet. The tactical radius of action is 100 miles.

*Bomb Load:* 500 pounds.

*Armament:* Four .50 caliber guns. Two in nose and two in wings. One 37mm cannon in propeller hub.

*Protection:* Armor: front and rear armor protection for pilot. Other points of plane also have armor protection. Leak-proof tanks and bullet-proof glass.

P-40 "WARHAWK"

*Description:* Single-engine fighter constructed as a single-seat, low-wing monoplane with conventional landing gear. Crew of one—pilot. Designed and built by Curtiss.

*Dimensions:* Span: 34 feet, 4 inches. Length: 33 feet, 4 inches. Height: 12 feet, 4 inches. Tread width: 8 feet, 2 inches. Wing area: 236 square feet.

*Power Plant:* One Allison liquid-cooled V-1710—





P-47 "Thunderbolt"

1,150 or 1,325 hp engine (P-40E and later models) or —one liquid-cooled "V-1650"—1,300 hp engine, Rolls Royce "Merlin" Packard-built. (P-40F and later models.) Curtiss 3-bladed, electrically controlled propeller.

**Performance:** Rated at speed of over 350 miles per hour. Service ceiling over 30,000 feet. The tactical radius of action is 150 miles.

**Bomb Load:** Has carried 1,000 pounds.

**Armament:** Six .50 caliber guns.

**Protection:** Armor plate, bullet-proof glass and leak-proof tanks.

P-47 "THUNDERBOLT"

**Description:** Single-engine fighter constructed as a low-wing, single-place, all-metal monoplane with single tail. Bulky oval shaped fuselage and elliptical wing are characteristic. The crew consists of one—pilot. Manufactured by Republic. Used as fighter protection for bombers, fighter sweeps at high and medium altitudes, and as a fighter-bomber.

**Dimensions:** Span: 40 feet, 8 inches. Length: 36 feet, 1 inch. Height: 14 feet, 2 inches. Tread width: 15 feet, 6 inches. Wing area: 300 square feet. Approximate maximum weight: Over 13,500 pounds.

**Power Plant:** One Pratt & Whitney R-2800 twin-row 18-cylinder 2,000 hp radial air-cooled engine. Both geared and turbine superchargers. Four-bladed Curtiss electrically controlled, constant-speed, multi-position propeller.

**Performance:** Rated at a speed of over 400 miles per hour. Service ceiling approximately 40,000 feet. The tactical radius of action is 350 miles as escort fighter.

**Bomb Load:** 500 pounds.

**Armament:** Eight .50 caliber guns in wings.

**Protection:** Front and rear armor protection for pilot. Leak-proof tanks, bullet-proof glass.

P-51 "MUSTANG"

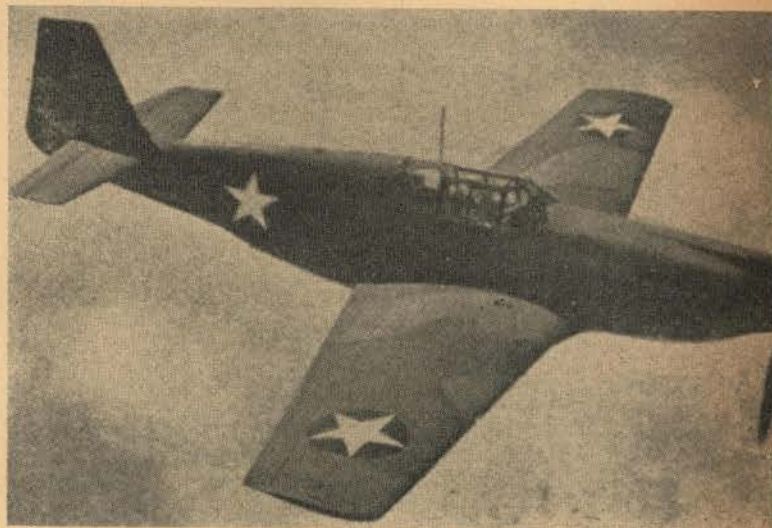
**Description:** Single-engine fighter constructed as a

low-wing monoplane with single tail. Crew of one—pilot. Manufactured by North American. Similar in appearance to ME-109E.

**Dimensions:** Span: 37 feet. Length: 32 feet, 3 inches. Height: 12 feet, 2 inches. Tread width: 11 feet, 10 inches. Wing area: 233 square feet. Approximate maximum weight: 9,500 pounds.

**Power Plant:** (1) Allison-powered: One Allison V-1710 liquid-cooled 1,200 hp 12-cylinder engine. One Curtiss electrically controlled constant-speed propeller.

**Performance:** Rated at an approximate speed of 400 miles per hour. Service ceiling approximately 30,000 feet. The tactical radius of action is 250 miles, as fighter-bomber—400 miles as fighter.



P-51 "Mustang"

**Power Plant:** (2) Merlin-powered: One Packard-built Rolls Royce "Merlin" V-1650 engine, 1,520 hp with 2-stage, 2-speed supercharger. Curtiss electrically controlled 4-bladed propeller.

**Performance:** Rated at a speed of over 400 miles per hour. Service ceiling over 40,000 feet. The tactical radius of action is over 500 miles as escort fighter.

**Bomb Load:** 1,000 pounds.

**Armament:** Four .50 caliber guns in wings.

**Protection:** Pilot protected front and rear with armor plate. Plane equipped with leak-proof tanks and bullet-proof glass.

P-61 "BLACK WIDOW"

**Description:** Twin-engine night fighter, equipped with latest devices. Manufactured by Northrop.

**Power Plant:** Two Pratt & Whitney radial air-cooled engines.

**Performance:** Fairly long range; effective speed and climb characteristics.

**Armament and Protection:** Heavily armored and armed.

P-70 "HAVOC"

**Description:** Twin-engine night fighter constructed as an all-metal, high-wing monoplane, single tail, tri-





C-46 "Commando"

cycle landing gear. Crew consists of pilot and radio operator. Manufactured by Douglas, the P-70 has been converted from the A-20. Forward compartment and bomb bays eliminated. Special interceptor equipment added.

*Dimensions:* Span: 61 feet, 4 inches. Length: 47 feet, 7 inches. Wing area: 465 square feet. Height: 17 feet, 7 inches. Approximate maximum weight: 19,000 pounds.

*Power Plant:* Two Wright R-2600 air-cooled radial 14-cylinder 1,600 hp engines. Three-bladed constant-speed, full-feathering propellers.

*Performance:* Rated at a speed of over 325 miles per hour. Service ceiling over 25,000 feet. The tactical radius of action is 400 miles.

*Armament:* Four 20mm cannon in belly.

*Protection:* Armor, leak-proof tanks, bullet-proof glass.

C-46 "COMMANDO"

*Description:* Twin-engine transport constructed as

C-47 "Skytrain"



an all-metal, stress-skin, semi-wing land monoplane with single tail. Crew consists of three or four. Manufactured by Curtiss Airplane Division.

*Dimensions:* Span: 108 feet. Length: 76 feet, 4 inches. Height: 22 feet. Tread width: 26 feet. Wing area: 1,360 square feet. Approximate maximum weight: Over 50,000 pounds.

*Power Plant:* Two Pratt & Whitney R-2800, 2,000 hp engines. Hamilton four-bladed, full-feathering constant-speed propellers.

*Performance:* Rated at a speed of over 250 miles per hour. Service ceiling over 25,000 feet. Tactical radius of action 800 miles.

C-47 "SKYTRAIN"

*Description:* Twin-engine transport constructed as an all-metal, low-wing, bi-motored monoplane. Hydraulically operated conventional landing gear and flaps. Crew of four: pilot, co-pilot, radio operator and aerial engineer. Built by Douglas. Military adaption of the



C-54 "Skymaster"

DC-3 airliner. C-53 is called "Skytrooper."

*Dimensions:* Span: 95 feet. Length: 64 feet, 6 inches. Height: 17 feet. Tread width: approximately 19 feet. Wing area: 987 square feet. Approximate maximum weight: over 29,000 pounds.

*Power Plant:* Two Pratt & Whitney R-1830 engines, 1,050 hp normal, 1,200 for take-off. Two Hamilton standard hydromatic quick-feathering type, 3-bladed propellers.

*Performance:* Rated at a speed of over 200 miles per hour. Service ceiling over 22,000 feet. Tactical radius of action 750 miles.

C-54 "SKYMASTER"

*Description:* Four-engine transport constructed as a large all-metal, low-wing monoplane with large single tail. Hydraulically operated flaps and nose wheel. Tricycle landing gear. Crew of six. Manufactured by



Douglas. Military adaption of the DC-4 commercial airliner.

*Dimensions:* Span: 117 feet, 6 inches. Length: 93 feet, 10 inches. Tread width: 25 feet. Wing area: 1,461 square feet. Approximate maximum weight: 60,000 pounds.

*Power Plant:* Four Pratt & Whitney twin-wasp R-2000 engines, 1,350 hp 14-cylinder air-cooled with two-speed supercharger. Hamilton Standard 3-bladed automatic full-feathering propellers.

*Performance:* Rated at a speed of over 275 miles per hour. Service ceiling over 20,000 feet. Tactical radius of action 1,000 miles.

#### C-69 "CONSTELLATION"

*Description:* Four-engine transport, low-wing, tricycle gear, triple vertical tail, pressurized cabin. Crew of nine. Manufactured by Lockheed.

*Power Plant:* Four Wright R-3350 air-cooled radial type, 18-cylinder engines, developing 2,220 hp. Hamilton Standard 3-bladed propellers.

*Performance:* Cruising speed considerably faster than standard air cargo or airline planes. Service ceiling 20,000 to 35,000 feet. Will cross the continent in 10 hours, or fly to Honolulu in 12 hours.

#### C-87 "LIBERATOR EXPRESS"

*Description:* Four-engine transport constructed as an all-metal, high-wing monoplane with hydraulically operated tricycle landing gear and Fowler flaps. Crew of five. The C-87 is a cargo-transport version of the B-24 bomber.

*Dimensions:* Span: 110 feet. Length: 66 feet, 4 inches. Height: 18 feet. Tread width: 26 feet. Approximate maximum weight: 50,000 pounds.

*Power Plant:* Four Pratt & Whitney R-1830, 1,200 hp engines with turbo superchargers. Hamilton Standard 3-bladed automatic control full-feathering type propellers.

*Performance:* Rated at a speed of over 275 miles per hour. Service ceiling over 30,000 feet.

#### CG-4 GLIDER

*Description:* Glider. Waco design. Built by several manufacturers. Crew consists of pilot and co-pilot.

*Dimensions:* Span: 83 feet, 8 inches. Chord: 10 feet, 6 inches. Wing area: 852 square feet. Weight (empty): Over 3,000 pounds. Design gross weight: Over 6,000 pounds.

*Useful Load:* Over 3,000 pounds. Carries 15 fully equipped men, or a jeep and six men.

*Design Tow Speed:* 150 miles per hour.

*Construction:* Fuselage—tubular steel, fabric covered. Wings—wood, plywood and fabric.

#### CG-13 GLIDER

*Description:* Waco design. Built by several manufacturers. Crew consists of pilot and co-pilot.

*Dimensions:* Span: 85 feet, 8 inches. Chord: 10 feet, 6 inches. Wing area: 872 square feet. Weight (empty): 7,500 pounds. Design gross weight: Over 17,000 pounds.

*Useful Load:* Over 9,000 pounds. Carries 30 fully equipped men.

*Design Tow Speed:* Over 150 miles per hour.

*Construction:* Fuselage—welded tube construction, fabric covered, wood floor. Wings—wood, plywood and fabric, externally braced.

#### R-4 SIKORSKY HELICOPTER

*Description:* Helicopter constructed with main powered rotor with three 15-foot blades, each one foot wide, operating at approximately 280 rpm. Three-bladed variable pitch rear motor.

*Dimensions:* Height: 12 feet, 6 inches. Rotor diameter: 38 feet. Length: 48 feet. Approximate maximum weight: 2500 pounds.

*Power Plant:* Franklin 6-cylinder 100 hp air-cooled engine or Warner 165 hp engine.

*Performance:* Approximate maximum speed: 100 miles per hour.

#### JET-PROPELLED FIGHTER

*Description:* Twin-engine jet-propulsion fighter. Manufactured by Bell.

*Power Plant:* Two General Electric jet-propulsion type engines. No propellers.

*Performance:* Secret. In general the aircraft has high speed and high ceiling.

*Armament and Protection:* Heavily armored and armed.

#### RECONNAISSANCE (PHOTOGRAPHIC) AIRCRAFT

##### F-5

*Description:* Same as the P-38 except for installation of aerial cameras and two droppable belly tanks in lieu of armament.

#### LIAISON AIRCRAFT (GRASSHOPPER)

##### L-1

*Description:* Manufactured by Vultee (Stinson). Lycoming engine.

##### L-2

*Description:* Manufactured by Taylorcraft. Continental engine (L-2M).

##### L-3

*Description:* Manufactured by Aeronca. Continental engine.

##### L-4

*Description:* Manufactured by Piper. Continental engine.

##### L-5

*Description:* Manufactured by Vultee (Stinson). Lycoming engine.



# Cavalry Lea

by

*Lieutenant Colonel Ralph Perkins,*

*Cavalry\**



INVESTIGATIONS regarding concealment and camouflage of mounted troops were started at the Agricultural and Mechanical College of Texas because the cavalry instructors found, during tactical problems held in conjunction with the A. and M. Flying School, that there was an unaccountable discrepancy in the ability of various units to conceal themselves from aerial observation. Valuable assistance in these experiments were furnished by Mr. E. J. Urbanovsky, chief instructor of camouflage of the Landscape Art Department of the A. and M. College of Texas; the photographic section of Bryan Army Air Field; and the local C.A.P. unit.

The pictures were all made at College Station, Texas from slow, low flying planes on bright days in January when foliage offers a minimum of protection.

In the accompanying pictures, the officers were mounted on white horses as a help to the planes in locating the area to be photographed. No attempt was made to conceal them.

It is hard to conceive a situation when cavalry would

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\*\*Photographic Officer, Bryan Army Air Field.

Picture 1 illustrates the value of taking advantage of shadows where complete concealment is not available. The group at A would have done better had they headed their horses toward the trees, in the trunk shadow and not perpendicular to it. The rider at B is perfect. Horse and rider at C are well concealed. See picture 3 for same horse and rider.

Picture 2 shows both good and poor use of protection. At normal altitude a reconnaissance plane would not be able to tell that there were 18 mounted men in this area.

Picture 3. Each horse in this picture is of different color and has dismounted rider at its side. The dun at A and buck-skin at B come nearer harmonizing with this East-Texas winter pasture than the bays, browns, and blacks. The gunny sack covering is of no use on horses in open but helps materially on horses partially concealed, as at C, D, and E. Horse and rider at F are the same as shown at C in picture 1 and in same location.

Picture 4 shows a platoon caught on the move with no attempt to conceal shadows. Gunny sacks are worthless when the shadow gives the complete picture. These gunny sacks had not been treated. Note the reflection.



# es No Tracks

and

*Lieutenant Newell D. Boyd,*

*A.A.C.\*\**

have to protect itself from detection from detailed photographic study. The objective in these experiments was to find the best and quickest method of gaining concealment. This was done by one cavalry officer in a plane recording the number of mounts that he could detect in a prearranged locality. The photographs were made to record what was seen from the air and were then made into slides and shown to the enlisted personnel who participated. In this way mistakes were made apparent.

From the viewpoint of the cameraman, the following observations were made during the photographing of the attempted concealment of the Cavalry Unit at Texas A. and M. These observations are not to be considered as conclusive, as the study made has not been extensive.

Since the cavalry is a moving organization, extensive camouflage measures are neither practical nor necessary. Such a unit, however, is extremely vulnerable to strafing attacks from low flying aircraft, and it will be with this fact in mind that this article is written.

The first and most important idea to keep in mind is that during any strafing attack the unit should be well dispersed unless exceptionally good protective covering or concealment facilities are at hand. This fact is proven in photograph No. 1 where a platoon was caught on the move and is in a position where one plane could practically destroy the entire unit in a single attack by simply making a strafing run down the ravine.

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Picture 5 shows that the troop of cavalry that constantly passed through this gate left no tracks while tracks of the automobile show the exact route traveled. The net at A, although well constructed for concealment of 8 horses is of too opaque material and therefore reflects, rather than absorbs light. The net at B was an attempt to reproduce the straw stack at C.

Picture 6 was taken of an area in which 28 inexperienced men were told to take individual cover.

Picture 7 illustrates the fact that both concealment and shadow must be considered to avoid aerial detection. Several of the 28 men in this area took advantage of the live oak at A.

Picture 8 shows the fallacy of neglecting shadows. Lead riders at A are well concealed had they not exposed their shadows.







If the strafing attack is a complete surprise and the time too short for dispersion, then the rider should dismount, assume a prone position, put the horse in a prone position with the sun directly in front of or directly to the rear of the horse. This last idea will hold true in either standing or prone position as the shadows are least recognizable with the sun directly in front of or behind the subject.

For concealment under trees, it is best to find a tree with the heaviest foliage, because it casts the darkest shadow. In any type of protective covering, if the rider and his mount can be covered completely by a dark shadow, the chances of discovery from the air are greatly lessened.

In the event the unit is caught in a position where there are no trees, a deep ravine or ditch may be used to advantage. In using a ravine for concealment the rider should stay as close to the side of the ravine as possible and always on the same side as the approaching plane.

Every cavalryman should receive individual instructions in concealment so that he will know how to take advantage of protective coloring, and other natural and man-made features of the terrain. He should not permit his horse or himself to cast a telltale shadow. He should be prepared to use gunny sack or netting to best advantage on prone or standing mount and should appreciate that movement is the greatest help to detection. He should know that the texture of gunny sacks reflects light so that they should be roughed up, dipped in mud, dabbed with neutral colored paints or rubbed with coffee grounds in order to get the best results.

Little need be said about tracks, as nothing seen or photographed from the air indicated that horses leave any tracks on this terrain. This situation probably would not exist in a climate where there is a heavy dew. It was also learned that the color of the horse made very little difference.

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EDITOR'S NOTE: For a detailed study on the subject of Camouflage, reference is made to two previously published articles on this subject which have appeared in recent issues of *The Cavalry Journal*—"Camouflage for Armored Forces," by Lieutenant S. Daniel Cavallero, November-December, 1943; and "The Three C's—Cover, Concealment, Camouflage," by Captain George E. Price, January-February, 1944.

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Picture 9 shows a troop caught on the road.

Picture 10 was taken one minute after 9 of same area. These men had had only three days training in concealment. The group at A are judges.

Picture 11. Good concealment of 18 men. Troopers at C used mud soaked gunny sacks.

Picture 12 shows an excellent use of net at A. There are 6 mounted men concealed under this net that fills the entire square.



# The Reconnaissance Squadron (Light)

*A Suggested T. O.—by Captain James P. Barry*

THE Reconnaissance Squadron (Light) is conceived to furnish a more flexible unit than exists at present. In some ways it is similar to the reconnaissance battalion of a German infantry division.

Troop A of the proposed squadron is a mechanized reconnaissance troop of the familiar type, organized under the present tables of organization and equipment.

Troop B is a horse reconnaissance troop. Present tables for the reconnaissance troop would provide a unit fairly well equipped, though probably it would be wise to add a 60mm mortar to the weapons of each platoon to increase the fire power of the troop.

Troop C is the support troop of the squadron, and is subdivided into two elements: mechanized and horse. The primary weapons of the mechanized will be self-propelled 75mm howitzers of the sort used in the present assault gun troop. The animal platoon of the troop may have 75mm pack howitzers, or field howitzers. The choice would depend upon whether emphasis was to be placed on ability to penetrate very rough country or jungle, or on mobility and maneuverability. If a field howitzer were to be used, the 105mm might be worth considering. 105s would increase the fire power of the unit considerably, but might complicate ammunition supply.

Service and Headquarters Troops could be combined, but with the complicated supply and transportation problems of such a squadron it would probably be better to have them separate.

There need be nothing very startling about Headquarters Troop. With a few adjustments to meet the mixed character of the squadron, one of the present TOs, could be used.

In combat, the squadron could be split into three parts: mechanized, horse, and rear elements. The support troop would then be divided and one platoon attached to each reconnaissance troop. There would be two semi-independent reconnaissance commands, which would furnish the commander with a tool for any sort of terrain.

## RECONNAISSANCE SQUADRON (LIGHT)

600 EM	32 O
<b>Headquarters Troop</b>	5 1-ton trailers
62 EM 12 O	9 60mm mortars
3 armored utility cars	<b>Troop B</b>
6 ¼-ton trucks	157 EM 5 O
2 ¾-ton command cars	149 mounts
2 ¾-ton weapons carriers	30 pack horses
1 2½-ton truck & kitchen gear	3 60mm mortars
1 1-ton trailer	<b>Troop C</b>
5 ¼-ton trailers	122 EM 4 O
20 mounts	3 SP 75mm howitzers
5 pack horses	3 75mm field howitzers
<b>Troop A</b>	3 caissons
140 EM 5 O	6 limbers
12 light armored cars	5 half-track carriers
4 half-track carriers	1 tank recovery vehicle
23 ¼-ton trucks	1 2½-ton truck & kitchen gear
1 2½-ton truck & kitchen gear	2 ¼-ton trucks

42 draft horses	1 wrecker truck
40 riding horses	1 tank recovery vehicle
1 pack horse	6 2½-ton trucks
<b>Service Troop</b>	(1 with kitchen gear)
119 EM 6 O	33 portee vehicles
1 half-track carrier	9 ¼-ton trucks
	6 1-ton trailers

## SUPPORT TROOP (LT RCN SQ)

122 EM	4 O
<b>Assault Gun Platoon</b>	<b>AMMUNITION SECTION</b>
36 EM 1 O	18 EM
3 GUN SECTIONS	3 caissons
(each)	3 limbers
4 EM	18 draft horses
1 SP 75mm howitzer	9 riding horses
<b>AMMUNITION SECTION</b>	<b>HEADQUARTERS</b>
13 EM	4 EM
3 half-track carriers	4 riding horses
3 ammunition trailers	1 pack horse
<b>HEADQUARTERS</b>	<b>Troop Headquarters</b>
11 EM	28 EM 2 O
1 half-track carrier	<b>MAINTENANCE SECTION</b>
<b>Horse Platoon</b>	10 EM
58 EM 1 O	1 half-track carrier
3 GUN SECTIONS	1 tank recovery vehicle
(each)	1 ¼-ton truck
12 EM	6 draft horses (spare team)
1 75 field howitzer	6 riding horses
1 limber	<b>ADMINISTRATIVE, MESS,</b>
6 draft horses	<b>SUPPLY SECTION</b>
7 riding horses	18 EM
	1 2½-ton truck & mess gear
	1 1-ton trailer
	1 ¼-ton truck

A pack platoon would replace the horse platoon in units intended for operations in extremely rough country or in jungle.

<b>Pack Platoon</b>	<b>AMMUNITION SECTION</b>
52 EM 1 O	19 EM
3 GUN SECTIONS	15 mules
(each)	<b>HEADQUARTERS</b>
19 EM	14 EM
10 mules	5 pack mules
1 75mm pack howitzer	3 riding mules

## SERVICE TROOP (LT RCN SQ)

119 EM	6 O
<b>MAINTENANCE PLATOON</b>	<b>SUPPLY SECTION</b>
29 EM	7 EM
1 light armored car	3 2½-ton trucks
1 half-track carrier	3 1-ton trailers
2 2½-ton trucks	<b>3 PORTEE PLATOONS</b>
1 wrecker truck	(each)
1 tank recovery vehicle	20 EM
2 ¼-ton trucks	11 portee vehicles
2 1-ton trailers	2 ¼-ton trucks
<b>Troop Administrative, Mess, and Supply Section</b>	
23 EM	1 ¼-ton truck
1 2½-ton truck & kitchen gear	1 1-ton trailer

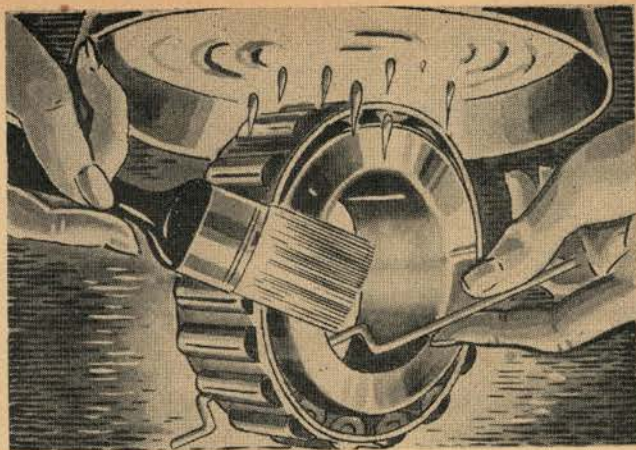
Two portee platoons to be attached to horse reconnaissance troop and one portee platoon to be attached to support troop when horse elements need motor transport.

Supply Section vehicles may be augmented by empty portee vehicles.



# DO'S and DONT'S on *Care of Bearings*

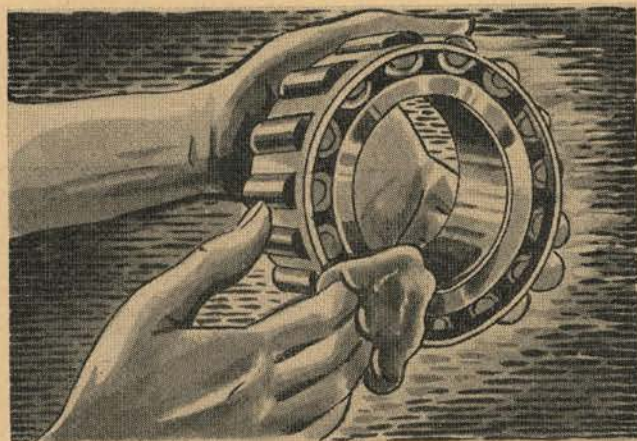
With our Cavalry largely on wheels we ought to know as much about ball and roller bearings as Phil Sheridan knew about cartilage. Bearings, like tires, are acutely critical. You can help make bearings last. This page will show you how.



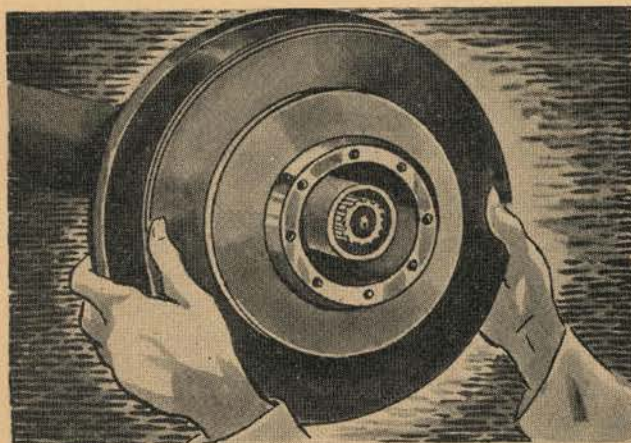
**Clean Bearings Thoroughly**—Always use a dry cleaning solvent that is itself *clean*, and a brush if necessary. Place the bearing on a clean piece of paper to dry. Remember, just one speck of sand or grit can ruin a bearing.



**Inspect Bearings Carefully**—Don't throw bearings away just because they are stained—possibly by chemicals in lubricants—and don't look like new. But inspect carefully for pits, flaws and extreme corrosion.



**Lubricate Bearings Correctly**—Bearings that are going to be grease-packed, like wheel bearings, must *not* be oiled before installation. Pre-lubricated bearings don't need to be touched. Consult your Lubrication Guide or Technical Manual.



**Install Bearings Properly**—Be sure the bearing itself is clean, and that all parts of its assembly—spindles, hubs and cups—are absolutely free from sand and grit. Install, adjust and lubricate only according to authorized instructions.



**Use Your Lubrication Guide**—Lack of lubrication, the wrong kind of lubricant, or too much lubricant will overheat and ruin a bearing. Maintain bearings with the care you would give jewels. Spread the word they are critical.



# Book Reviews

**THE AXIS GRAND STRATEGY.** Compiled and edited by Ladislav Farago. Military Service Publishing Co. \$3.50.

Compiled from original material prepared by Staff Officers of the German Army, Navy and Air Force, this book offers an over-all picture of the German blueprints for total war.

Originally published in 1942, the book is considered of such tremendous value that it has been republished at this time.

*The Axis Grand Strategy* describes the plan for modern war from the political and psychological preparations to the ultimate campaign of military destruction. It does not limit itself to the purely military ends, but takes into consideration the utilization of political and economic weapons, fifth column penetration and geopolitical strategy. One writer, in discussing the Far Eastern strategy, actually predicts the attack on Pearl Harbor.

† † †  
**PIPELINE TO BATTLE.** By Major Peter W. Rainier. Random House. \$2.50.

The author of *Pipeline to Battle* is an extremely interesting South African who, after an adventurous career as a mining engineer, inveigled himself into the English army as a subaltern, age 47. Fortunately for the army, he had had experience laying pipelines, and soon became "the water Bloke," whose responsibility it was to see that the supply lines provided sufficient water to the mobile front across the North African desert.

Gifted with a grim, sardonic humor and a skilful ability to describe vividly the scenes he encountered, Major Rainier has written a graphic record of the African struggle that never wavers in its interest. His duties as Chief Water Supply Officer kept him constantly in the forefront of the battle, and enabled him to give a consecutive story of the war from the days of Wavell's Thirty Thousand to Montgomery's triumphal entry into Tunis.

*Pipeline to Battle* is a sincere and honest tribute, worthy of the men to whom it is dedicated—the men whose graves mark the route of the Eighth Army.

† † †  
**PHYSICS, Course I, *Mechanics*, two volumes, textbook and workbook, \$1.50. Course II, *Heat, Light and Sound*, two volumes, textbook and workbook, \$1.50. Course III, *Electricity*, two volumes, textbook and workbook, \$1.50. Henry Holt & Co.**

These three courses are identical with the United States Armed Forces Institute editions. They are planned for self-teaching, with mathematical pointers for those lacking a thorough knowledge of that subject. The material is so arranged as to eliminate the necessity for a laboratory, and to make the maximum use of objects and examples at hand to illustrate the problems involved. The necessary protractor is included in the course in mechanics.

**THE ROAD TO TEHERAN.** By Foster Rhea Dulles. Princeton Press. \$2.50.

For those interested in a concise intelligent treatment of the Russo-American political relations from 1781 to 1941 this book offers the only complete coverage yet published.

Professor Dulles of Ohio State University has used all available material from our State Department and the Russians, as well as books and newspapers of the various periods. While he views events from the American aspect, he carefully avoids bias or ideological prepossessions and formulates almost no conclusions.

Common interests and minor differences flavor the entire history of the relations of these two powers from the time of John Quincy Adams' *Mission to Russia* to Joseph E. Davies' *Mission to Moscow*. *The Road to Teheran* is a fascinating as well as enlightening book, written with an undertone of wit that reminds the reader that the author is a former newspaperman turned historian.

† † †  
**INTERVENTION AT ARCHANGEL.** By Leonid I. Strakhovsky. Princeton Press. \$3.00.

Publication of this complete and documented account of Allied intervention and Russian counter revolution in 1918 is most timely. In the near future, problems of military government will be paramount in a number of countries and among a great variety of peoples.

The question of whether or not foreign intervention in Russian affairs was justified is not presented. Grave errors were made at Archangel in 1918-20 by the British, Americans and French. Mr. Strakhovsky appears to feel that many of these mistakes were due primarily to the failure of the interventionists to understand the nature and utilize the peculiarities of the people to the maximum advantage.

It is hoped that this very intelligent study will succeed in its purpose to assist students of military government to recognize the pitfalls to be avoided—some of which are even now becoming evident.

† † †  
**UNFINISHED BUSINESS.** By Stephen Bonsal. Doubleday, Doran. \$3.00.

This secret diary, kept at the request of President Wilson, and used by him to check his own memory of events, throws much interesting light on the problems and failures of the last peacemaking. It is not a rehash of already published documents, but a record of meetings and conversations of which no official records were kept.

Colonel Bonsal felt that the publication of these notes might inform, and thereby influence, people to avoid the obvious pitfalls of Versailles in which the present war was founded.

It is a significant book, the latest of a long line of significant books, hopefully presented to the public over a period of twenty-five years.



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GERMANY WILL TRY IT AGAIN. By Sigrid Schultz.  
Reynal & Hitchcock. \$2.50.

WHAT TO DO WITH GERMANY. By Louis Nizer.  
Ziff-Davis. \$2.50.

American-born Sigrid Schultz was taken to Germany by her Scandinavian parents just before the last war. Her father's position as a well known portrait painter undoubtedly placed her in a particularly advantageous position to study a certain strata of German society, an advantage she exploited intelligently and well.

After the Armistice Miss Schultz became a member, and later head, of the Berlin office of The Chicago Tribune, and broadcaster from Berlin over Mutual. Over a long period of time the author watched Germany gird for war while circumventing those treaties that she dared not violate openly. The course of German coördination of resources from 1918 to 1939 as presented in this book indicates that there is evidence of similar planning at the present time.

Louis Nizer in outlining the German character quotes from writers as far back as Caesar and Tacitus. He points out the fact that it has been the intellectual Germans—Wagner, Hegel, Treitschke, Nietzsche and de Gobineau—who have generated and fathered the attitude of superman, Aryan domination and German world conquest.

Mr. Nizer traces the history of German military behavior during and after the last war and concludes with suggestions as to methods of obliterating the Germanic spirit from which wars have emanated in Europe for so many hundreds of years.

The most striking aspect of these two books is the fact that while one is a recounting of personal experiences and observations, the other a series of logical deductions based on writings of and by the German people, they both arrive at the same conclusions and an identical appraisal of Germanic character.

HISTORICAL ATLAS OF THE UNITED STATES.  
By Clifford L. Lord and Elizabeth H. Lord. Henry  
Holt & Co. \$3.00.

For breadth of concept and quick comprehension there is no handy atlas of American history that can compare with the book compiled by Clifford and Elizabeth Lord. It contains maps indicating the economic and political growth of the nation as well as the social progress that has been made through the years.

There are maps to illustrate colonial and state boundaries, military campaigns, explorations, national expansion and trade routes. Maps are used to show what areas were devoted to tobacco and rice in 1775, what states regulated the working day for women in 1850, the comparative day's travel in 1800, 1830, 1860, and so on. This method of reference is a great advancement over the process of reading long passages of semi-relevant material.

The only criticisms of this book are the occasional lack of sufficient variation in the shadings used, and the exceptionally small scale of the world maps. Both of these weaknesses can undoubtedly be corrected in future revisions, and would appear to be insignificant in comparison with the great value of the material and its method of presentation.



**THE CURTAIN RISES.** By Quentin Reynolds. Random House. \$2.75.

One of Mr. Reynolds' outstanding attributes is his ability to make people like him, probably because he evinces his enjoyment of them. This is a direct contribution to his books in that he is welcomed into far more intimate knowledge of the people with whom he comes in contact than the average reporter is ever permitted.

His latest book, *The Curtain Rises*, embraces Moscow during the winter after Stalingrad, the Middle East after the armies had been rolled back from its borders, and Algeria in the midst of war. The climax is undoubtedly the recounting of the landing at Salerno—perhaps the best story of this incident yet published.

✓ ✓ ✓

**LAST FLIGHT FROM SINGAPORE.** By Flight Lieutenant Arthur G. Donahue, D.F.C. Macmillan. \$2.50.

Flight Lieutenant Donahue's first book *Tally-ho: Yankee in a Spitfire* went into its fifth printing shortly before he was reporting missing. In this first book he told of his experiences with a fighter squadron in England during the Battle of Britain. His stories of combat were varied with descriptions of the normal routine, which may consist of flying for days without an actual encounter with the enemy.

*Last Flight From Singapore* is what its name implies, an account of air combat prior to the last days of Singapore and during the fall of Palembang. The author's obvious sincerity, evidenced throughout the book, is climaxed by the inclusion of several personal letters to members of his family. The manuscript was found among his possessions when, after his return to England, he was listed as missing from a European patrol.

✓ ✓ ✓

**MY LIFE WITH THE ENEMY.** By Phyllis Argall. Macmillan Company. \$3.00.

In 1916, at the age of seven, Miss Argall went to Japan and, except for a few years during which she took her B.A. and M.A. at the University of Toronto, remained there until she returned to America on the *Gripsholm* in 1941. After getting her degree she taught first in Tamsui, Formosa, and then in Tokyo, where she started free-lance writing. In 1939 she joined the staff of *Japan Newsweek*.

Miss Argall has written an interesting and thoroughly convincing account of her experiences. Her analysis of the Japanese character is based on many years of dealing with the Japanese as students, as social acquaintances, business partners and rivals and finally as captors.

✓ ✓ ✓

**TANK WARFARE.** By J. R. Lester. W. W. Norton & Co. for George Allen & Unwin, Ltd. \$2.25.

*Tank Warfare* traces the development of British and German panzers from the time of the last war. It describes the early clashes of armored units, charts the mistakes learned in battle experience, and looks forward to a possible mass invasion of tanks, for which the Dieppe raid is used as an example.

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**CHINA HANDBOOK 1937-1943.** Compiled by the  
Chinese Ministry of Information. Macmillan. \$5.00.

**WINNING THE PEACE IN THE PACIFIC.** By S. R.  
Chow. Macmillan. \$1.50.

These two books will be of interest to those readers who are interested in learning something more of our Pacific Ally at this time. *China Handbook* contains information on the area, population, topography, climate, history and religion of the country as well as education and economic conditions, foreign relations and permissible military information on campaigns and battles. A Chinese Government directory is included, and a "Who's Who" with biographical sketches of prominent men and women of the day.

*Winning the Peace in the Pacific* presents a Chinese view of the Eastern postwar plans and requirements. It is an effort to dispell the impression that China is too involved in fighting the war to be interested in the peace.

**MILITARY DECORATIONS AND CAMPAIGN  
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# "Are Horses Essential?"

by Major P. D. Eldred\*

THERE were plenty of "ducks" and trucks to move supplies across the Sicilian beaches and haul them up the highways. And when the armor landed, there was enough of that, too. But when the Seventh Army started fighting its way through Sicily's precipitous mountains, there were two things it did not have—pack transport and horse cavalry.

It was not long after the Americans hit the beaches before everybody, from the Commanding General down, realized that Sicily's tortuous terrain was a "natural" for pack trains and horse cavalry. Without them, supply was a back-breaking problem; reconnaissance was made difficult. Heavy weapons sometimes lagged behind the infantry, and pursuit of the retreating Germans was never quite fast enough to accomplish their destruction.

\*Hq. Seventh Army.

*Below:* Mounted French Moroccan troops move to the front in Sicily. *Top insert:* Lieutenant General Omar S. Bradley. *Lower insert:* Lieutenant General George S. Patton with Brigadier General Hobart Gay in background.

As a result, some of the German forces eventually escaped across the Strait of Messina and lived to fight another day against Allied troops in Italy.

The invasion of Sicily on July 10 probably was as thoroughly planned an operation as American troops had ever undertaken. Every piece of motorized or mechanized equipment that conceivably could be used was provided. The speed with which the island was conquered (thirty-eight days) attested to the efficiency of operational planning.

Because pack transport and horse cavalry were not available, however, they were not included in this operational planning. One infantry division, anticipating supply problems, did bring 90 burros across from North Africa, but these light animals could not handle the job.

After the Sicilian operation was actually under way and fighting had progressed into rugged mountain terrain, with supply hampered by inadequate roads, blown





# al in Modern War?"

bridges and mine fields, it was necessary hastily to improvise pack trains. A limited number of mules and horses were hurriedly rounded up, hauled to the front in trucks and, with inadequately trained personnel, put into service. Naturally, the result, while helpful, was far from satisfactory.

At the conclusion of the campaign, **LIEUTENANT GENERAL GEORGE S. PATTON**, Commanding the Seventh Army, and his corps and division commanders made some significant comments on the need for pack transport and horse cavalry in mountainous terrain.

**GENERAL PATTON** summed up his conclusions as follows:

"In countries such as Sicily, it is almost necessary to have pack animals.

"In almost any conceivable theater of operations, situations arise where the presence of horse cavalry, in a ratio of a division to an army, will be of vital moment.

"It is the considered opinion, not only of myself but of many other general officers who took their origin from the infantry and artillery, that had we possessed an American cavalry division with pack artillery in Tunisia and in Sicily, not a German would have escaped, because horse cavalry possesses the additional gear ratio which permits it to attain sufficient speed through mountainous country to get behind and hold the enemy until the more powerful infantry and tanks can come up and destroy him."

**MAJOR GENERAL M. S. EDDY**, commanding the 9th Infantry Division, went into more detail on the subject:

"Infantry can advance only so far without receiving its daily supplies of water, ammunition and food. In this (the Sicilian) campaign, even in the case of infantry advancing along a main road, the advance was temporarily held up, primarily because of the difficulties of supply.

"Because practically all bridges had been blown and the terrain was such that motor vehicles could not be used until engineers had constructed long and difficult by-passes, pack mules had to be employed.



**Major General Lucien K. Truscott** is shown in conference with **General Bradley** during operations in Sicily.

"A conglomeration of pack equipment was finally collected that was neither adequate nor efficient. Inexperienced packers did the best they could, and the drain on manpower to furnish packers and mule leaders was quite heavy. To obviate these difficulties in future operations, the following recommendations are made:

"1. Provide organized pack trains for any operation where mountainous terrain is to be encountered. These units could be in corps or army reserve, to be attached to divisions as needed.

"2. In case organized pack units are not available, provide a stock of American pack equipment, including special pack saddles for the six loads of the 75mm mountain howitzer and for the heavy weapons of the infantry. Again, the stock could be held in army dumps to be issued as needed.

"3. Provide units with pack equipment and mules on a loan basis during their training period before an

## "YES," say the generals from the Sicilian Campaign



## The Cry for Horses

★

Despite mechanization of modern weapons of war, the value of the horse on the field of battle has been dramatically rediscovered during the past winter and has been the difference between success and failure on the Russian front.

It is an old cavalry axiom that a horse can go wherever a man can travel, and this is still not true of the tank, truck—or even the faithful jeep. This winter on the Russian front, horses have packed men, munitions, supplies and weapons over impossible and practically impassable terrain. Pulling wagons, sleighs, caissons and guns, horses have kept pace with the Red Army.

In Italy the cry for horses, mules, and more horses became almost a howl during the past winter months as troops operating in treacherous mountain country faced the problem of packing in food, ammunition and other supplies and packing out wounded men. Once again the horse filled the vital need, and many an old cavalryman watching man's beast of burden pass a column of mud-embedded motor transport smiled a knowing smile and kept his peace.

The German army has used the horse to supplement its motor transport from the first day of war, and on the Eastern front has developed the use of animal-drawn vehicles to a scale almost equalling that of World War I. In China, both the Japanese and Chinese find the military value of the horse undiminished when used to support campaigns in mountainous terrain. And the god of war, still crazy over horses, has given many a recent victory to the army commander who has been able to assemble sufficient animals to meet the needs of the military situation—planes, trucks and tanks notwithstanding. — *Stars and Stripes*, 25 March 1944.

operation in order that instruction in packing may be given."

MAJOR GENERAL L. K. TRUSCOTT, JR., commanding the 3d Infantry Division, in discussing lessons learned by his division, said:

"The 3d Division landed at Licata with about 90 burros brought from Africa. The burros were gradually discarded and replaced by both mules and horses. At the end of the Palermo phase we had accumulated a number of horses and mules equipped with captured and improvised pack saddles. Losses and wastage among these pack animals were extremely high because of the crude improvisations and the lack of trained personnel in the division to handle them.

"During the final advance on Messina, it was necessary to increase greatly the number of pack animals. They were in constant use supplying elements engaged in flanking movements through the mountains."

At the end of the Sicilian Campaign on August 17, the 3d Division had on hand 301 pack mules, of which 48 were unserviceable. In all, the division used about 500 pack animals during the final phase of the campaign. The division also had 115 horses, of which 34 were unserviceable.

GENERAL TRUSCOTT added:

"The need for mounted reconnaissance and combat elements to work in close coöperation with the infantry in rough terrain was no less marked than the need for pack animals. The need for such elements . . . is obvious. However, such elements cannot be improvised in combat from untrained personnel, although we made strenuous efforts to do so. Considerable use was made of riding animals for command and communication purposes and, to a very limited extent, for scouting.

"I am firmly convinced that if one squadron of horse cavalry and one pack troop of 200 mules had been available to me at San Stefano on August 1, they would have enabled me to cut off and capture the entire German force opposing me along the north coast road, and would have permitted my entry into Messina at least 48 hours earlier."

During the campaign, General Truscott organized a provisional mounted troop and a provisional pack troop and began training personnel in animal management in order to provide more efficient and economical handling of animal transportation.

The provisional mounted troop consisted of troop headquarters and three reconnaissance platoons of three squads each. The provisional pack troop had about 250 serviceable pack mules. Both units were under a competent cavalry officer. Pack equipment included Phillips packs as well as captured equipment of the French Army type.

After the campaign, General Truscott recommended



that the division be authorized to organize a mounted troop and a pack troop on a provisional basis.

GENERAL TRUSCOTT concluded by making the following remark:

"I am firmly of the opinion that if future operations contemplate the employment of this division in terrain approaching that encountered in the Sicilian operation, that these organizations (pack, mounted reconnaissance and combat units) will be worth their weight in gold."

GENERAL EDDY stated:

"The heavy weapons company must be the base of advance of the entire infantry battalion; therefore, to facilitate the advance of the battalion, it must be driven home to those responsible for the organization and equipment of the infantry battalion that heavy weapons cannot be manhandled and still keep up with the advance of rifle companies. Weapons carriers can go only so far in mountainous terrain, and their use is limited. Their use is also limited by swamps and jungles in other types of terrain.

"In many instances in this campaign and in the Tunisian campaign, the weapons carrier drew hostile artillery fire and, from that point, the heavy weapons had to be carried by personnel unless pack mules were furnished.

"Whenever pack mules could be secured or spared from supply functions they were furnished to heavy weapons companies, and in such instances, the heavy weapons companies had no trouble keeping up with the rifle companies. Whenever the heavy weapons had to be carried by hand, the heavy weapons company lagged behind."

Major General Eddy recommended that heavy weapons companies should have as part of their standard equipment the necessary pack equipment to be used when packing heavy weapons becomes necessary. "Mules," he said, "were always easily secured in North Africa and Sicily, and mules and horses will be available in Europe."

LIEUTENANT GENERAL O. N. BRADLEY, commanding the II Corps, also noted that infantry divisions had successfully employed pack mules. He concluded:

"In contemplated operations in mountainous terrain, plans should include facilities for supply by pack train."

That which has been said of Sicily was equally true in Tunisia and of the mountainous terrain of Italy and probably of the jungles and swamps of the Southwest Pacific. With the added difficulty of rainy seasons, there is no question but what serious terrain problems will present themselves in any theater of operations. Knowing this and bearing in mind "that you get on the roads to march and must get off the roads to fight," what is the answer to the question, "Is Pack Transport and Horse Cavalry Essential in Modern Warfare?"



Beyond the "jeep line" in Italy a mule pack train winds its way up the mountain side with supplies for troops. It will take about four hours to make the tedious five-mile trip.

#### Improvised Cavalry in Italy

*"A certain ingenious general, an old cavalryman, now commanding infantry, has organized a battle-strength cavalry troop with commandeered horses and pack mules to smoke out the Germans in isolated areas. This general has had to turn infantrymen and artillerymen into cavalymen to accomplish his purpose. While there are a few dead mules and horses lying about, this anonymous general (Editor: Major General Lucien Truscott, Commander 3d Infantry Division) has been very successful with his makeshift cavalry."*

*"It would seem obvious that, in regions where mechanized warfare breaks down because of lack of communications, horses and mules would speed up the task of harassing and defeating the enemy, but there is no sign that the masterminds of this war, who are determined that the war shall roll on wheels even when it can't, intend to use cavalry in any large way."*—Frank Gervasi, Collier's, December 18, 1943.



# TANKS IN SICILY

by Lieutenant Colonel  
W. B. Goddard\*

UNTIL American forces began their large-scale amphibious operations in the North African-Mediterranean Theater, it had been customary to think of tanks in the rôle of massed power, driving deep into the enemy's rear areas, crushing his resistance, overrunning his positions and disrupting his communications.

\*G-3 Section, Hq. Seventh Army.

But there are other missions, perhaps not so spectacular, but equally as important to the defeat of the enemy, which are now recognized as vital to successful operations. Of these, none is more important than the support that tanks are able to give infantry units.

## WITH THE INITIAL LANDING

In operations such as the Sicilian invasion, tanks are an essential element of a force landing on a hostile

M-4 and M-5 tanks (not shown in picture) fire from a Sicilian valley at a pillbox on opposite hill just before it fell, July 1943. Infantry can be seen on road to right. This is an example of tanks employed in support of infantry attack.





shore. Initially, the fire power of the medium tank provides the support necessary to the infantry until field artillery can be landed and moved into position.

It is obvious that a mobile force, with adequate fire power and capable of moving forward rapidly and aggressively, is of utmost importance in driving the enemy back for a sufficient distance from the beach to make possible the placing of field artillery in suitable positions. In the performance of this mission, tanks play a key part in successful landing operations.

It is needless to say that any kind of moral support for the infantry during this critical phase of combat is most welcome.

#### AGAINST ENEMY COUNTERATTACKS

After the initial landing has been made and the beachhead established, the landing force must be prepared to repulse enemy counterattacks. Here again, the tank takes a prominent rôle.

In the landing of the 1st Infantry Division at Gela, Sicily, American tanks played an important part. The terrain around Gela was not suited to mass attacks by

In the 38-day Sicilian campaign tanks of the 2d Armored Division performed many valuable missions other than the spectacular "blitz" from Agrigento to Palermo.

medium tanks, but the tanks initially landed were used very effectively to repel strong German counterattacks on the second day. These attacks were broken up only a short distance northeast of Gela.

#### WITH AMPHIBIOUS "LOOP" LANDINGS

In addition to amphibious landings, such as the actual invasion of Sicily, there are special amphibious operations in which tanks may be employed in support of ground forces. On three different occasions, this type of special operation was used in the Sicilian Campaign along the north coast while the Seventh Army was advancing east toward Messina.

The axis of advance was the twisting coastal road, which closely follows the shoreline. Precipitous mountain ranges drop abruptly to the sea and, in places, the road actually is notched from the cliffside. The terrain is ideal for enemy delaying actions, successively defending well-chosen positions.

On each of the three occasions where special amphibious operations were used, the terrain encountered was such as to prevent successful execution of a frontal attack, or to envelop the enemy left (south) flank, without excessive cost. But, by amphibiously "looping" up the coast and landing task forces in the rear of German positions, it was possible to force enemy withdrawal and continue the advance of the main attacking force. Tanks included in these special task forces rendered fire support to the infantry and helped to repulse German counterattacks. They were credited with contributing largely to the success of the operations.



An M-4 tank of the 2d Armored Division advances into the town of Sceaco in western Sicily July 20.



An armored unit moves through Palma, Sicily July 11—the day after initial landings.



### WITH INFANTRY ATTACK

The mountainous terrain of Sicily tended to canalize the movement of tanks in most areas. There were certain areas, however, where tanks could be used to advantage in assisting the infantry in gaining ground by making lightning thrusts, closely followed by the infantry assault. In such cases, and whenever such an attack was made, the objective was taken.

The conditions favoring attacks of this nature presented themselves so seldom that the enemy never knew when to expect a tank attack. As a result, at times when Allied tanks were not being used, many German antitank guns, set up well forward to destroy tanks, were overrun by the infantry. In the latter stages of the campaign, German losses of antitank guns were considerable. This might be described as an indirect means by which tanks aided in the defeat of the Germans.

At times during the Sicilian Campaign a light tank battalion and a company of medium tanks were attached to the 1st Infantry Division. In general, these tanks were very successful in clearing out enemy strong-points, artillery, and even personnel. On many occasions, the 1st Infantry Division used this tank force advantageously.

### LIGHT TANKS IN SUPPORT OF INFANTRY

The light tanks of a reconnaissance squadron proved to be most essential to the squadron in accomplishing some of its assigned missions. Also, on several occasions, these tanks were of valuable assistance in expediting the advance of adjacent infantry units, by moving quickly around the flank and knocking out enemy machine gun positions that were cleverly located to delay the advance of our infantry.

This tank and crew was a part of the amphibious force landed behind German lines at Cape Orlando on the north coast road August 7. It is shown here plunging ahead to intercept German units retreating toward Messina.



Lieutenant General George S. Patton, Jr., commander of the Seventh Army during the Sicilian Campaign, tells of one notable instance in which light tanks, supporting infantry units, proved of utmost importance to the 1st Infantry Division:

"During the Sicilian Campaign a very interesting tank action took place between Butera and Mazzarino. Some 14 German Mark IV tanks attacked a regiment of the 1st Division while the regiment was deployed and in no position to repel the attack. These veteran soldiers, however, merely took cover and the tanks passed through them without doing any particular damage. These German tanks then turned to the north along the axis of retreat of the enemy. In so doing they came in contact with about 30 light tanks of one of our GHQ battalions. In the ensuing fight, at extremely short range, the 14 German tanks were destroyed. Our losses were three light tanks, none of which were damaged except in their running gear."

### NEW TANK TACTICS

This article has mentioned some of the various situations in which tanks are called on to assist the infantry. Authorities on tank operations, alert to evolutionary changes, believe that the pendulum has swung in the opposite direction and that now the infantry must assist the tanks to obtain the best results from this powerful weapon.

As an example of successful tank-infantry employment, General Patton cites the following example:

"The operation of the Provisional Corps in the taking of Palermo was a classic example of this method of using tanks. Initially, the tanks were held back so that the enemy was unable to determine in which direction the 2d Armored Division would operate. When the infantry of the 3d and 82d Divisions had secured an open flank, the 2d Armored Division moved rapidly around it, and during the day of July 22 advanced some 69 miles in about 12 hours. In the course of this move they had to overcome four distinct enemy positions."

In considering the employment of tanks, General Patton cautions:

"There must be a careful differentiation between armored divisions and GHQ tank battalions; both are necessary. The GHQ tank battalions are used primarily for the purpose of supporting infantry, so that the integrity of the armored division is not destroyed. The present homogeneity of the battalions, however, makes it possible to add GHQ battalions to armored divisions when the circumstances demand additional armored force."

This discussion of the use of tanks in the Sicilian Campaign calls attention to some of the many ways in which tanks must be prepared to work with the infantry in defeating the enemy. All are based on the accurate employment of fire power and aggressive action to the highest degree.



# Sicilian Terrain



When the Seventh Army was advancing east toward Messina, the main axis of advance was the twisting, coastal road which closely followed the shoreline. This picture, taken of an area 45 miles west of Messina, shows the typical terrain over which the advance was made. A railroad bridge and a highway bridge can be seen close to the water's edge.



In a great many places along the coastal highway, precipitous mountain ranges dropped abruptly to the sea, and often the road was actually notched from the cliffside.



The second amphibious landing in rear of a securely held German position was made on this beach. The landing referred to was probably that at Brolo, August 11th.





Scene on Gela Beach on "D" day—10 July. Matériel was slow to arrive, and troops were unable to proceed immediately. A strong German counterattack delayed advance.



Troops landed at Licata Beach proceeded immediately through the town. Licata is pictured from elevation in the interior.

*by Colonel Paul A. Disney, Cavalry\**

THE story of the action of this Reconnaissance Battalion is one of typical cavalry action albeit the mounting of the participants was on steeds of iron instead of flesh. It should be of particular interest, therefore, to all cavalymen.

In a period of less than two weeks, the battalion operated on separate occasions as a reconnaissance battalion for its own armored division and for a provisional corps. During this period, frequently simultaneously with these operations, smaller elements operated as attachments to separate combat commands within the armored division, and companies operated in zones of advance of infantry divisions of the provisional corps—reporting directly to those divisions as well as to the Battalion.

It is believed that the command of a reconnaissance platoon gives a young officer an opportunity to display his ability in a manner afforded by no other command of comparable size. Of seven platoon leaders in the Battalion who have had the opportunity of displaying their wares in combat, one has been recommended for the Distinguished Service Cross, and four have re-

ceived the Silver Star (one of them twice). The remaining two had hard luck and got the Purple Heart while leading their platoons. Two of these awards were made during landing operations in French Morocco in November 1942.

All of the platoons which were observed in action performed as though going through platoon combat exercises and tests, which have formed a part of the training in this Battalion for a considerable period of time. The principles laid down in the training manuals are sound. "The proof of the pudding is in the eating."

The period covered by this account starts with the departure of elements of the Battalion from Africa and ends on the day that they entered Palermo.

Most elements of this Battalion spent the period 1-5 July at an African Port of Embarkation loading vehicles and making preparations for an embarkation of personnel for amphibious operations. Headquarters Company and Company "A" were to remain in Africa. Company "B" had already departed for a staging area. Company "C" was attached to a Combat Command of the 2d Armored Division. Company "D" comprised a part of the reserve of the Task Force. Battalion Headquarters, consisting of the Battalion Commander, four staff officers, a medical officer and ten enlisted personnel,

\*Commander, Reconnaissance Battalion, Sicily.

# Red

## —Activities of



# Reconnaissance in Sicily

## A Reconnaissance Battalion from the Landings at Licata and Gela to the Entry into Palermo

embarked with the understanding that elements of the Battalion would be assembled later for operations as a tactical unit.

### COMPANY "B"—LICATA TO NARO—10-11 JULY

The first element of the Battalion to reach Sicily was Company "B," which landed near Licata on 10 July between 2200 and 2300 and moved directly from the dock areas to a de-waterproofing area northwest of the town. Vehicles were de-waterproofed and tires inflated. Outpost was established and maintained by the 3d Platoon until 0400, 11 July.

On the morning of 11 July Company "B" moved out in advance of a Combat Command in an attack on the town of Naro.

About one mile south of Naro the 2d Platoon, as the leading element of the company, observed an enemy tank moving east from the town. A patrol was sent after it, but it made a successful getaway. The 2d Platoon then entered Naro at 1100 without opposition. One

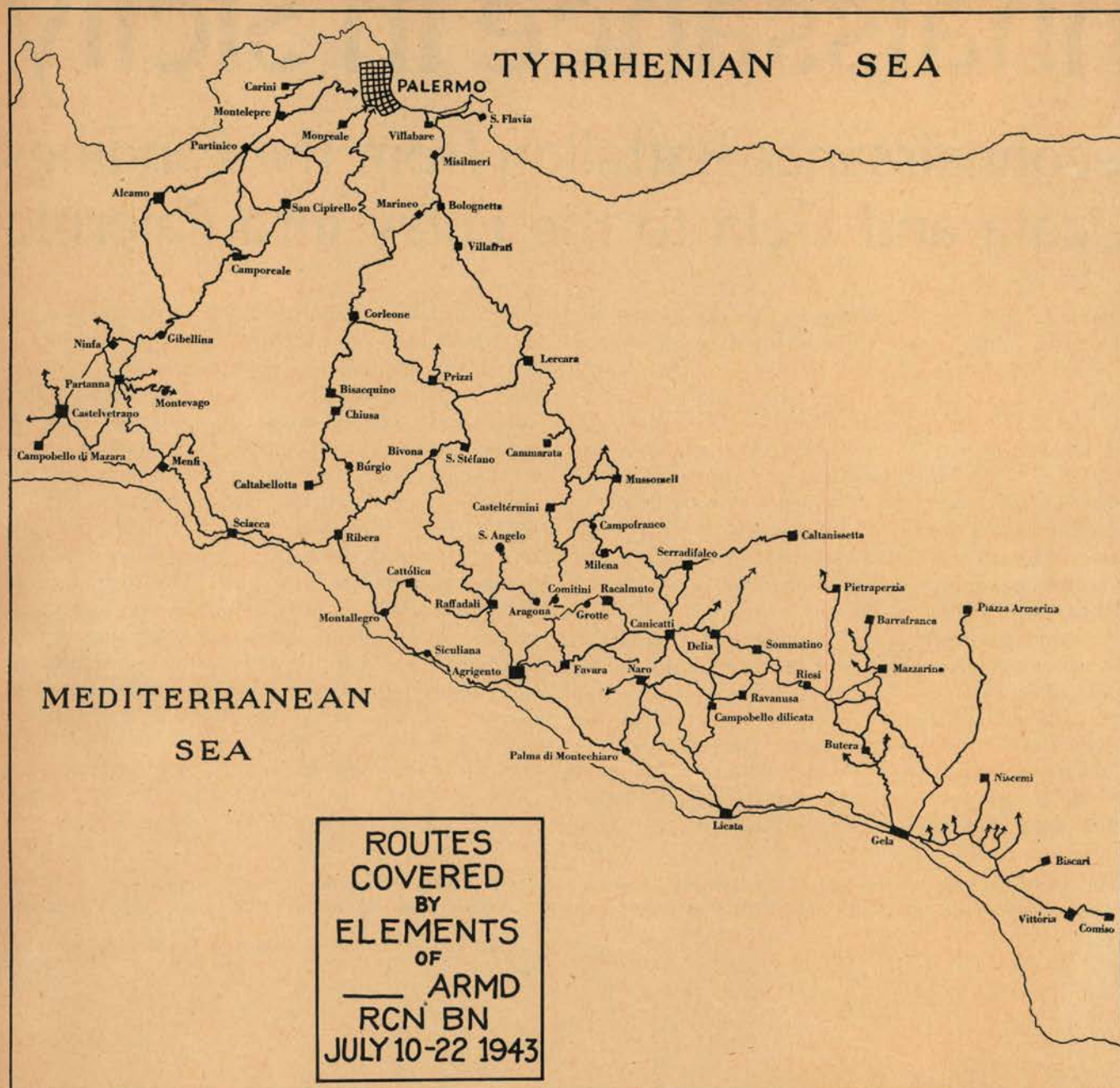
Italian truck of ammunition was found abandoned and was turned over to Company Headquarters. Orders were received to outpost the town. On a ridge 5 miles north of Naro, enemy fire was encountered. Two Italian trucks coming from the north met with the leading ¼-ton truck of the patrol. Fire, promptly opened on the trucks, killed six of the enemy. Of the remaining, 3 Italian soldiers surrendered, and an estimated 30 or 40 more were killed or wounded. The Italians, evidently from other trucks, built up a strong firing line with machine guns and antitank guns. The 2d Platoon assault gun was brought forward and used with direct fire on the enemy positions. The enemy continued to reinforce its position from the north. After fighting for 2½ hours and being unable to get around either flank, the platoon set fire to the two Italian trucks and withdrew to a ridge just north of Naro, where it remained in observation of the enemy during the night and next day.

Meanwhile, the 1st Platoon, which left its position north of Licata at about 0315, proceeded north and

The city of Palermo, capital of Sicily, fell to the Americans on 23 July 1943. Elements of this Reconnaissance Battalion entered its outskirts on 22 July. The Provisional Corps covered distance from Agrigento in 72 hours' forced marching.







northwest by road to a point about 7 miles north of Licata. It moved over this route at a fair rate of speed and arrived at Conostro at about 1000. The city was deserted of soldiers, and the platoon, proceeding immediately to Naro, arrived there shortly after the 2d Platoon had taken the town. The 1st Platoon was then sent to establish an OP *west* of Naro, which it maintained during the night and until 0300 on 12 July.

The 3d Platoon arrived at Naro and moved north on the main highway to Canicatti. At the highway and railroad junction, midway between Naro and Canicatti, it came under fire of enemy small arms, machine guns, and two artillery pieces. The platoon was trapped in a canyon but worked its way back by fighting a rear guard action. All except one enemy gun was destroyed, without any casualties or vehicular losses within the

platoon. At about 1830 the platoon was bombed and strafed on the highway just north of Naro. One man was killed, three men injured, and two vehicles were lost. At 2100 it established an OP on a hill three miles *east* of Naro and maintained it for the remainder of day.

#### 3D PLATOON, COMPANY "B"—NARO-SERRADIFALCO— 12-15 JULY

At dawn on 12 July, the 3d Platoon, which had established an OP east of Naro, was divided into two sections. One section remained at OP, and the other patrolled and reconnoitered the Naro-Palma Di Montechiaro road for an enemy armored division reported to be in that locality. No contact with the enemy was made, but hostile planes continued to bomb and strafe,



and the platoon leader and driver were wounded by fragments from German artillery shells.

The next day the 3d Platoon proceeded north of Naro to Canicatti, which had now fallen, and established an OP four miles in advance of the infantry front lines. A patrol moved toward Serradifalco, gained contact with the enemy and found a large oil dump on fire. Artillery was firing on the enemy south of Serradifalco. That evening the 3d Platoon withdrew to an OP one-quarter mile north of Canicatti, and a patrol moved three miles west of that town and established an OP on high ground. Two German prisoners were captured at this point.

At 0600 on 14 July, one section of the 3d Platoon moved three miles west of Castrofilippo, gained contact with the 2d Platoon, and then withdrew to the original OP because of friendly artillery barrage in that sector. A patrol was then sent southeast of Racalmuto on reconnaissance.

The second section of the 3d Platoon went north toward Serradifalco to the OP of the preceding day and again gained contact with the enemy. A patrol moved to the northwest and located an evacuated German bivouac area, which had apparently been a regimental headquarters and contained much German equipment. After finding and turning in many documents, the patrol set up an OP there for the rest of the day. Six Italian prisoners in civilian clothes were captured.

The next day, this same section went cross-country north to about three miles south of Serradifalco, where the patrol was fired on from the north by a German 170mm howitzer. It moved to take cover, but the artillery lifted and followed the patrol, so the section proceeded to the position of the day before. Fifteen minutes later, enemy artillery ranged in on the exact location that the section had evacuated. It then returned to a friendly artillery OP and pointed out the location of the enemy battery, which was soon silenced. About 2100 the 3d Platoon was relieved and withdrawn to Company CP about two miles north of Campobello.

#### 2D PLATOON, COMPANY "B"—NARO-FAVARA— 12-16 JULY

At about 2000 12 July, the 2d Platoon, which had remained in observation of the enemy north of Naro, sent a patrol north to determine the disposition of the enemy. The two trucks, burned the day before, had been moved so as to block the road. There was no enemy fire until the patrol reconnoitered by fire, at which time the enemy, from the same position as the previous day, returned the fire vigorously. The patrol then withdrew to the ridge just north of Naro, and remained in observation until early the next afternoon. When hostile artillery fire started falling near a bridge between the position of the platoon and Naro, the platoon was ordered to return to Company CP but later was ordered back to its original position, where it remained in observation.

In the afternoon of 14 July, elements of an armored infantry regiment were contacted in Naro and all information conveyed to them.

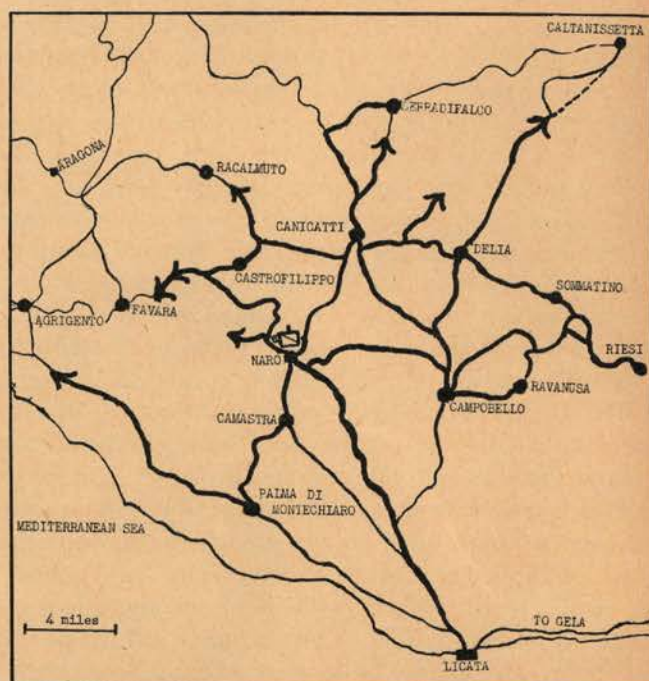
The next day a coordinated attack with the armored infantry revealed that the enemy position had been abandoned. Eight 47mm and four 20mm guns in good condition were found near Castrafilippo. The crews had evidently been destroyed by strafing.

A patrol was then sent to Favara. About one mile from Favara, two gun positions were observed and others heard. These guns opened fire on the patrol and upon a bridge 600 yards ahead on the road. The assault gun was brought forward and neutralized two of the gun positions. The remaining hostile guns were getting the range when the platoon was directed to withdraw to the original position north of Naro. Listening post and patrols were established for that night.

At about 1500 the next day, the 2d Platoon moved through Favara—the enemy having withdrawn from the town. That evening, it was relieved and returned to Campobello to join the Company Headquarters.

#### 1ST PLATOON, COMPANY "B"—NARO-AGRIGENTO— 12-14 JULY

On 12 July the 1st Platoon, Company "B," which had established an OP west of Naro, was ordered to contact the enemy north of Agrigento. The route of march was Camastra-Palma Di Montechiaro-Agrigento. The Platoon started on this mission at 0330. At 0600, the enemy was encountered about 3 miles southeast of Agrigento. The Scout Section came upon two bridges south of the town which were blown, and three enemy soldiers who were mining the banks of the



Route of Company "B" — July 10-16. Heavy lines indicate routes of reconnaissance of this unit for dates given.





View of Naro, Sicily, where as early as 11 July Company "B" established OP's to the north, east and west of town.

stream at the bridges. Fire was opened immediately. The three enemy were killed, and a truck loaded with mines standing in the road on the opposite side of the stream was destroyed. As fire was opened, the hostile artillery along the high ground beyond the creek, (about 1000 yards to the direct front), and 4 machine guns to the right front, opened fire. A vigorous fire fight ensued, during which the platoon was forced to withdraw.

Losses sustained were one officer and five enlisted men missing, one enlisted man killed and one assault gun destroyed. Enemy losses were three enlisted men killed, one truck and two machine guns destroyed and a pile of ammunition blown up. The platoon remained in observation of the enemy until the afternoon of the 14th, when it was ordered back to Naro.

#### 1ST PLATOON, COMPANY "B"—NARO-DELIA-CALTANISSETTA—14-16 JULY

At about 1700 the 1st Platoon was given the mission of reconnoitering the road east from Naro to Ravanusa-Riesi-Sommatino-Delia, then north to contact the enemy in that sector. The platoon moved out about 1730 and patrolled the assigned route, but made no enemy contact that day. The night of 14-15 July an OP was set up on high ground about one mile northeast of Delia and patrols operated east to Sommatino-Riesi.

At about 0600 the 1st Platoon was reinforced by the Scout Car Section of the 2d Platoon, which was sent northeast with the mission of contacting the enemy south of Canicatti.

The 1st Platoon, moving northeast toward Caltanissetta, was shelled by artillery and forced to withdraw but continued to maintain contact. It next moved about 4 miles northeast and encountered an 88mm gun and two enemy tanks. One vehicle was destroyed and one man in the platoon wounded. The enemy tanks started an envelopment of the right flank of the platoon, which withdrew to the high ground occupied the previous night. The enemy tanks were kept in observation the rest of the 15th.

At about 0530 the next day the 1st Platoon again

moved forward and occupied high ground on its axis. An Italian truck was destroyed about 2000 yards north of the position. That afternoon the platoon was joined by an I & R platoon of an armored infantry regiment and at about 1400 noted dismounted enemy moving south through a draw toward the positions held by the platoon. Remaining in observation until fired on by a machine gun, it then returned the fire, in conjunction with the armored infantry, inflicted several casualties, and caused the enemy to withdraw in disorder. That night the 1st Platoon was relieved and returned to bivouac north of Campobello.

#### COMPANY "C"—GELA BEACH—10-12 JULY

The majority of Company "C" landed at Gela late in the afternoon of 10 July and early morning of the



Infantrymen of the 45th Division march through Caltanissetta, Sicily, 18 July. Reconnaissance elements attempting to enter the town earlier were stopped by heavy fire and established OP's three miles south of the town.

11th. The 1st and 2d Platoons plus Headquarters Company, were landed without sufficient vehicles to operate mounted.

During the landing, the 3d Platoon, reinforced by other personnel of Company "C", was subjected to severe bombing, strafing and enemy artillery fire but succeeded in shooting down one low-flying plane. This platoon, which received its vehicles soon after landing, was immediately given reconnaissance missions of locating enemy vehicles reported in the vicinity of the Acate River to the south and east of Gela, and there made several enemy contacts. Enemy tanks were kept under observation to the north. The terrain was difficult and most of the reconnaissance along Highway 115 to the north had to be done dismounted.

The rest of Company "C" remained in assembly area near Gela beach awaiting the arrival of vehicles from ships.



Five German tanks were reported in the vicinity of Gela, and it became necessary for the 1st Platoon (less the Scout Section which had made contact with Combat Command about one mile north of the beach) to withdraw in face of tank action. The 1st Platoon took up a dismounted defensive position in a railroad cut about  $\frac{3}{4}$  of a mile from the scene of action. There it was shelled by enemy artillery and dive bombed until forced to withdraw to the original assembly area.

The 2d Platoon, which had landed at 0530 on 11 July remained in the assembly area the rest of that day and all of the 12th waiting for vehicles to arrive. During this period, German tanks attacked from the hills, and the units underwent considerable strafing as well as tank and artillery fire.

On the afternoon of 12 July, Company "C" less the 3d Platoon, reverted to Battalion control and moved to assembly area about 4 miles northwest of Gela.

### 3D PLATOON, COMPANY "C"—GELA—12-17 JULY

On 13 July the 3d Platoon patrolled Highway 115 to Vittoria, and from Vittoria half-way to Comiso. The airport southwest of Comiso was being shelled by the enemy at that time.

During the night the platoon outposted the high ground north of Highway 115 to the Acate River. An overlay of certain trails to the north was given the platoon leader by the Combat Command and the seven points designated thereon were visited at least once every two hours. About 0100 the platoon leader took 12 men and with a small element of the infantry went up the mountain to the north to neutralize a gun position which they thought had been located. The gun was not found, and the patrol returned at dawn.

While continuing patrols the following day, the platoon captured one German prisoner and 6 Italian prisoners and on the 15th another Italian prisoner. Patrols and observation points remained approximately the same throughout this period.

Barrafranca was captured by an infantry regiment on the 16th, and the following day the 3d Platoon rejoined Company "C".

### COMPANY "C"—RIESI-MAZZARINO AREA—13-17 JULY

From the assembly area 4 miles north of Gela the 1st Platoon, Company "C" moved out toward Butera on 13 July with the mission of covering the flanks of a Ranger Battalion in its attack on enemy positions in that vicinity. The next day Company "C", less 3d Platoon, moved into assembly area about two miles south of Butera. The town of Mazzarino on the Ranger Battalion's right and Rieti on its left had already fallen. It was reported that enemy troops were between the two towns.

The Scout Car Section of the 1st Platoon moved out of advance position at dawn and by 1000 arrived on a high hill overlooking Butera. Its missions were to patrol the right flank of the Ranger Battalion to east and

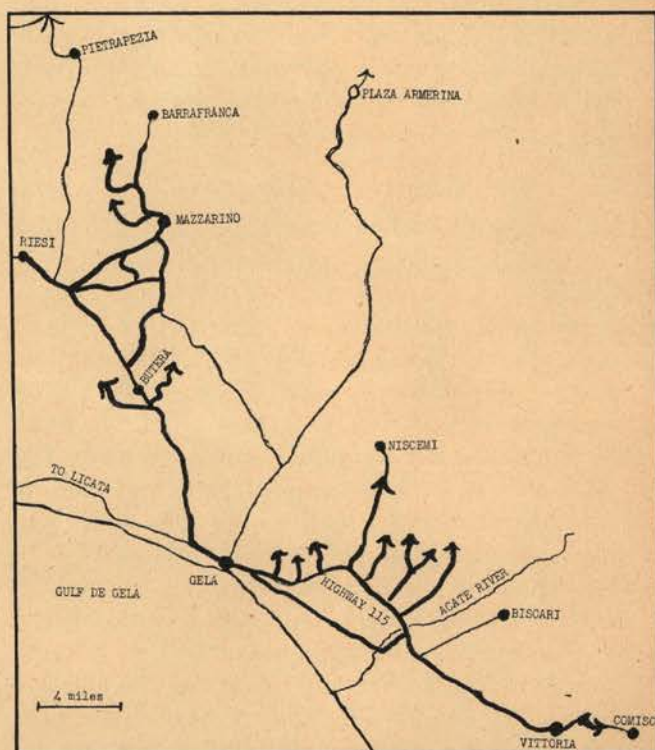
west phase line through Butera, and then to contact the Division east of Butera. By moving cross-country for about three miles the Scout cars reached an infantry outpost 6 miles east of Butera and left an OP to investigate the hills to the north of Butera. After finding a deserted Italian garrison filled with ammunition and grenades, the 1st Platoon was ordered back to CP. Later, while patrolling in the Rieti-Mazzarino area, it contacted an Infantry Division CP in Rieti at 2000, and maintaining contact with the Division, patrolled to Mazzarino. The patrol then returned to bivouac area after midnight and patrolled the Mazzarino-Rieti road between two Divisions CP's for the remainder of night.

The next day, the 1st Platoon was ordered to contact an infantry regiment at Mazzarino and patrol with scout section as far as Barrafranca. As the platoon arrived, a tank battle was in progress in the valley just north of Mazzarino, and the commanding officer of the infantry regiment said that it was impossible to make a daylight patrol and requested the scout section to make a dismounted night patrol of the road to Barrafranca. The scout section leader with eight men performed this mission. The patrol was recalled at 2100.

On the 16th the 1st Platoon returned to Mazzarino and was assigned the mission of reconnoitering the road to Barrafranca in an effort to locate an alternate route for supplies moving north to an infantry regiment in the hills.

The Scout Car Section moved out on its new mission at 1200 and by 2100 had located a cross-country route to the area northwest of Barrafranca.

Early the next morning the 1st Platoon moved out



Route of Company "C"—July 10-17.



to make contact with the enemy north of Barrafranca. Before contact was made, however, it was ordered to rejoin Company "C" south of Butera.

By the 17th, all platoons had rejoined the Company, which in turn reverted to Battalion control and moved to the new assembly area near Campobello.

#### COMPANY "D"—GELA-AGRIGENTO—11-18 JULY

Company "D" landed from lighters at Gela beginning at 0500 on 11 July, and assembled behind the sand dunes just off the beach. Dismounted elements of the company which landed earlier from the transport were on the beach for a full night and a day before vehicles were received. During this time they were subjected to constant bombardment and aerial attack, and a German tank attack.

The tanks of Company "D", and personnel vehicles of Battalion Headquarters were brought ashore on 11 July, and the Battalion (less detachments) assembled in the vicinity of Division Headquarters.

On 12 July, Company "D" (light tanks) moved approximately 6 miles north of Gela on the Butera Highway, and spent the 13th and 14th as a reserve in close support of the Ranger Battalion and its attack on Butera.

One tank platoon was made available to the 2d Armored Division Commander and remained at Division Headquarters.

Again on 16 July Company "D", still in reserve, went to the assistance of an infantry division sustaining a German tank attack. The company moved in 5 minutes, but upon arrival found that the attack had been beaten off.

On the 17th the Company rejoined the Battalion at Campobello, and the following day moved out under Battalion control to an assembly area west of Agrigento. It remained in reserve throughout this period, and none of its elements were committed.

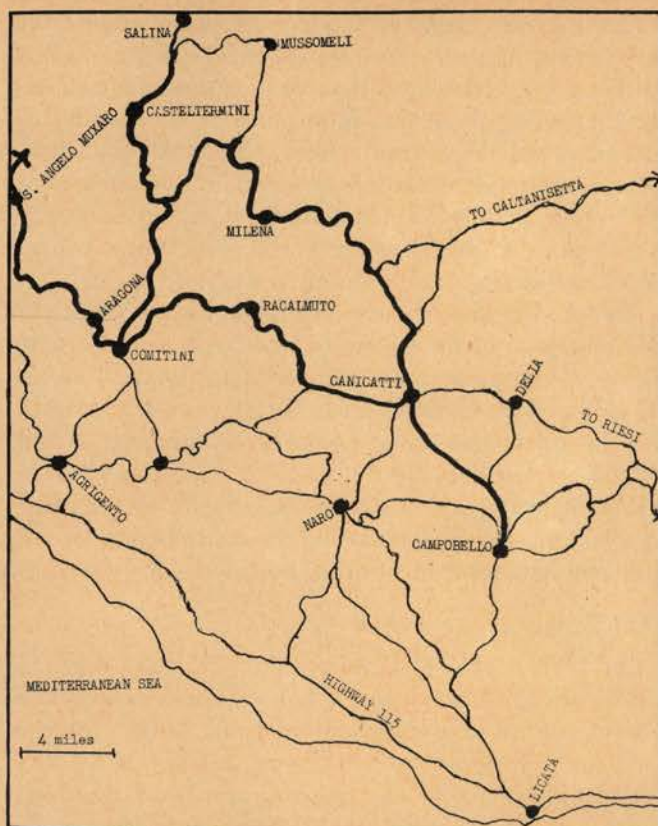
#### COMPANY "B"—CAMPOBELLO-COMITINI—15-18 JULY

On the 17th, the 3d Platoon, Company "B", which had rejoined the company at Campobello on the 15th, proceeded north to Canicatti and pushed reconnaissance two miles northwest of Milena. Contact was gained with enemy artillery there and an OP and listening post established for the night. Enemy infantry and artillery were located two miles west of this position.

At dawn the next morning a dismounted patrol was sent to reconnoiter a large sulphur mine and railhead on Salina Road, 6 miles north of Casteltermini. The enemy was seen withdrawing to the north at 1000.

The Platoon was called back to the Company CP at noon to revert to Battalion control. The Platoon joined Battalion west of Agrigento at 2300.

On the 17th the 1st Platoon, Company "B", attached to a battalion of an armored regiment, was assigned the mission of reconnoitering routes to Racalmuto and Comitini and of contacting an enemy column reported



Route of Company "B"—July 15-18.

moving south from Casteltermini. The armored regiment was later recalled and the 1st and 2d Platoons then proceeded on missions of contacting the enemy north of Comitini.

At about midnight, Comitini was found to be clear. Five miles north of Comitini the 2d Platoon was fired upon by riflemen who ran off when fire was returned. At about 1500, the 1st Platoon made contact with an enemy artillery position. Three artillery pieces, one 20mm AA gun, one 47mm gun and two machine guns were definitely located. The two platoons shelled this position and at about 2000 started an attack which resulted in the destruction of these weapons and the capturing of 10 prisoners.

As the platoons returned from this sortie, another artillery piece and two machine guns opened fire, but their exact location could not be determined. Neither platoon suffered any casualties. It was determined earlier by the 2d Platoon that the bridges across the river were blown, but the railroad bridge was still intact. The night of 17 July, listening posts were established.

Observation of enemy gun positions was maintained throughout the next day, and the remaining piece located. Meanwhile, the two platoons proceeded to Aragona without resistance, and patrols reconnoitered northwest to S. Angelo Muxaro and north for about three miles. During the night several prisoners walking from Agrigento were captured.

A patrol during the afternoon went 10 miles north



of Comitini where heavy artillery fire was encountered, causing the patrol to withdraw and set up an OP. In the early evening a dismounted raid was made on the enemy position with the Scout Section of the 1st Platoon. Nine prisoners were taken. The Platoon then returned to the Company CP at Campobello and moved with the Battalion to Agrigento.

#### CAMPOBELLO—AGRIGENTO—17-18 JULY

During the period 10-17 July Company "B" had operated under Combat Command. On 18 July the Battalion was detached from the 2d Armored Division to act as a Reconnaissance Battalion for a Provisional Corps comprised of the 3d Infantry Division, 82d Airborne Division and the 2d Armored Division. For the first time Company "B" reverted to Battalion control for this operation. In accordance with these plans, the Battalion moved to assembly area west of Agrigento during the night of 18 July.

#### COMPANY "C"—AGRIGENTO-RIBERA—19-20 JULY

All platoons of Company "C" moved out of Agrigento at 0200 on the morning of the 19th. The 3d Platoon, performing reconnaissance for the 82d Airborne Division, moved west on Highway 118, on the axis of advance Raffadali-Cattolica-Montallegro. The first enemy encountered was at the Magazzolo River and after some firing, 55 prisoners were taken.

At Ribera, after a mine field had been removed and

the town placed under fire, the city surrendered and some 70 prisoners were taken.

At the Verdura River, two miles west of Ribera, the 3d Platoon encountered small arms fire and artillery. The position was reduced by fire and dismounted action, and 85 prisoners were taken.

At a second river crossing west of Ribera, stiff resistance was met in the form of small arms fire, antitank guns and artillery. Both ends of the bridge were hit by antitank fire when a scout car attempted to cross. Ninety prisoners were taken. One man was wounded by strafing of enemy planes.

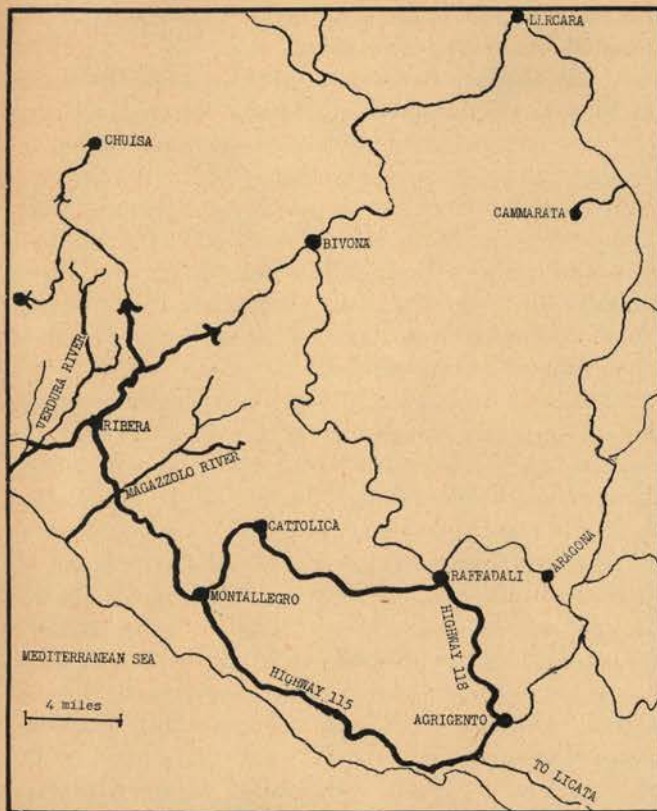
Meanwhile, the 1st Platoon, which had also moved out of Agrigento in advance of the 82d Airborne Division, made contact with Battalion of Rangers at 0430 three miles east of Raffadali. Following the 3d Platoon, the 1st Platoon then moved rapidly to Cattolica where it received a hearty welcome from the population. It then continued its advance toward Ribera. At the approaches to the town, hostile small-arms fire was encountered, but was quickly overcome by the vigorous return fire of the platoon. Patrols, after passing through a mine field, entered Ribera at about 1200. The local garrison of approximately 75 men surrendered to the platoon leader. Shortly thereafter infantry entered Ribera, and the platoon assembled and went to assembly area north of the town. The Scout Section patrolled roads to the north but encountered no enemy resistance.

The 2d Platoon moved northeast of Ribera to an in-

*Right:* Near Agrigento where the battalion assembled for assignment with the Provisional Corps, composed of 2d Armored Division, 3d Infantry Division and 82d Airborne. *Below:* Major General Geoffrey Keyes, commander Provisional Corps, and Major General Matthew Ridgeway (center), commander 82d Airborne.







Route of Company "C"—July 19-20.

fantry outpost line. The Company CP moved to Ribera and joined the CP of the 82d Airborne Division.

The following day the 3d Platoon continued reconnaissance in advance of the Airborne Division moving west on Highway 115; the 2d Platoon moved north of Highway 115; while the 1st Platoon remained in company reserve.

#### 1ST PLATOON, COMPANY "C"—RIBERA-CALTABELLOTTA-S. NINFA—20-21 JULY

The 1st Platoon, proceeding slowly because of the presence of mines, moved from Ribera to Villafranca at 0500 on the 20th. Just south of Villafranca, the platoon was directed to patrol a side road to the mountain town of Lucca, which capitulated without resistance at 0800.

The platoon then pushed on to Villafranca. An enemy armored car was sighted on a hill near the town. Fire was opened with a 37mm gun, but it was found that the range was too great. After passing Burgio, reconnaissance was made toward Caltabellotta. An Italian machine gun just over the crest of a hill near Caltabellotta was next discovered. Mortar fire from the platoon silenced these guns. A white flag was shown and the Scout Section went forward to take the position. Eight AA machine guns and several prisoners were captured. The platoon then proceeded on its mission to Caltabellotta.

The Platoon entered the town at 1800 after a white flag had been raised and the garrison of 25 men was taken prisoner. Prisoners, reporting the road west of

the town as mined, were marched out to clear the mine field. Mines were found to be TNT placed under the road and in deep pits sufficient to cause complete destruction of the road. Italians very reluctantly cleared the tunnel under the road, but they claimed they could not clear pits without pulleys.

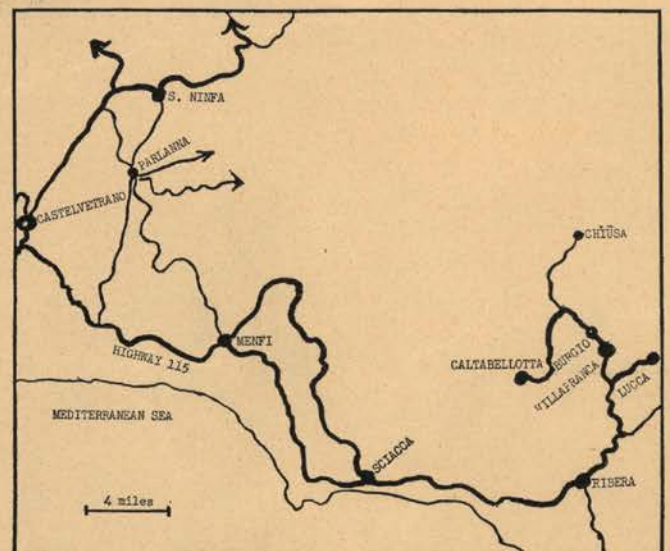
Naval gunfire was observed in the zone of advance, and a smoke flare was sent up. Orders were then received to remain in position. The platoon was approached by the Mayor and Chief of Police of Caltabellotta who stated that rioting threatened the town as the civilians were attempting to storm the local monastery to get clothing and equipment known to be stored there. Order was restored, and the local police force re-armed to maintain order.

The next day the 1st Platoon rejoined Company "C" at Menfi and was held in reserve as the company pushed on through Castelvetro to S. Ninfa, which was reached at 1800. The Scout Section reconnoitered the high ground north of the town without locating any enemy forces. Outposts were then established for the night.

#### 3D PLATOON, COMPANY "C"—RIBERA-MENFI-ALCAMO—20-21 JULY

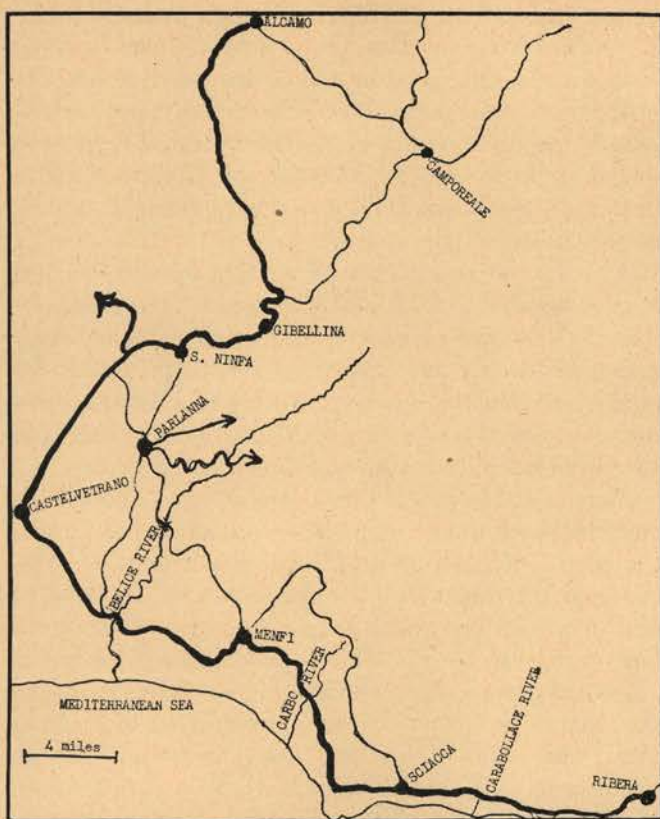
At 0530 on the 20th, the 3d Platoon moved out of Ribera toward the west. Artillery fire was met about 5 miles from Sciacca. Dismounted, the platoon took the gun position and 80 prisoners. About three miles farther west, it was fired on again by artillery but pushed on after returning fire with an assault gun.

After some delay because of a blown bridge and the necessity of stopping for ammunition and gasoline, the platoon entered Sciacca, then proceeded toward Menfi. The head of the column drew very heavy small-arms fire at close range from the flanks and rear. No casualties were suffered because of the prompt delivery of supporting fire by the remainder of the platoon. Casu-



Route of 1st Platoon, Company "C"—July 20-21.





Route of 3d Platoon, Company "C"—July 20-21.

alties were inflicted on the enemy by all weapons including hand grenades.

Four miles east of Menfi the river bridge was mined and defended. The position was reduced by the fire of all weapons and dismounted action. Several casualties were inflicted and 110 prisoners taken. Two prisoners were killed in the mine field which was booby-trapped.

Another mine field was located one mile east of Menfi, and while it was being removed, a small dismounted patrol entered Menfi without resistance. At least 500 prisoners were rounded up in the city square.

At a small river two miles west of Menfi a large mine field was encountered. The Engineer squad which was sent up to remove the mines hit a booby-trap which killed two men including an officer, and wounded 9 others.

One platoon of Company "D" joined the 3d Platoon just prior its entry into Menfi.

The 3d Platoon bivouacked at Menfi for the night and, moving out early the next morning, reached the Belice River at 0555. The bridge was blown, and the enemy infantry closed on the platoon before it could be by-passed. Hostile artillery fire went on intermittently for two hours but was ineffective.

The Scout Section and Tank Platoon were able to cross after considerable delay. A mine field was removed on the way to Castelvetrano, which was entered without a fight. Approximately 500 prisoners were rounded up and sent to the rear. The remainder of the day's

advance was through to S. Ninfa, Gibellina, and Alcamo. No resistance was encountered. Eight 75mm and three 100mm guns were destroyed by the enemy as the 3d Platoon entered Alcamo. Approximately 800 prisoners were taken in these three cities. Actually, this was a small percentage of the enemy troops present; the remainder were taken over by succeeding elements.

The 3d Platoon halted for gas at Alcamo and was ordered to return to Company CP at S. Ninfa. Inadvertently, it had crossed the "bomb line."

#### COMPANY "B"—AGRIGENTO-PALERMO—19-22 JULY

Early on the morning of 19 July, Company "B" moved out of Agrigento in advance of the 3d Infantry Division on Palermo.

At 0300 the 1st Platoon moved back to a position north of Comitini, where, at about 1000 an armored infantry regiment attacked the enemy, and the platoon immediately forded the river and proceeded to Casteltermini. As the Platoon left the town it destroyed an Italian truck, killed one enemy soldier and wounded another. The 1st Platoon remained in the vicinity until ordered to return to company CP at Aragona where it arrived at about 2400.

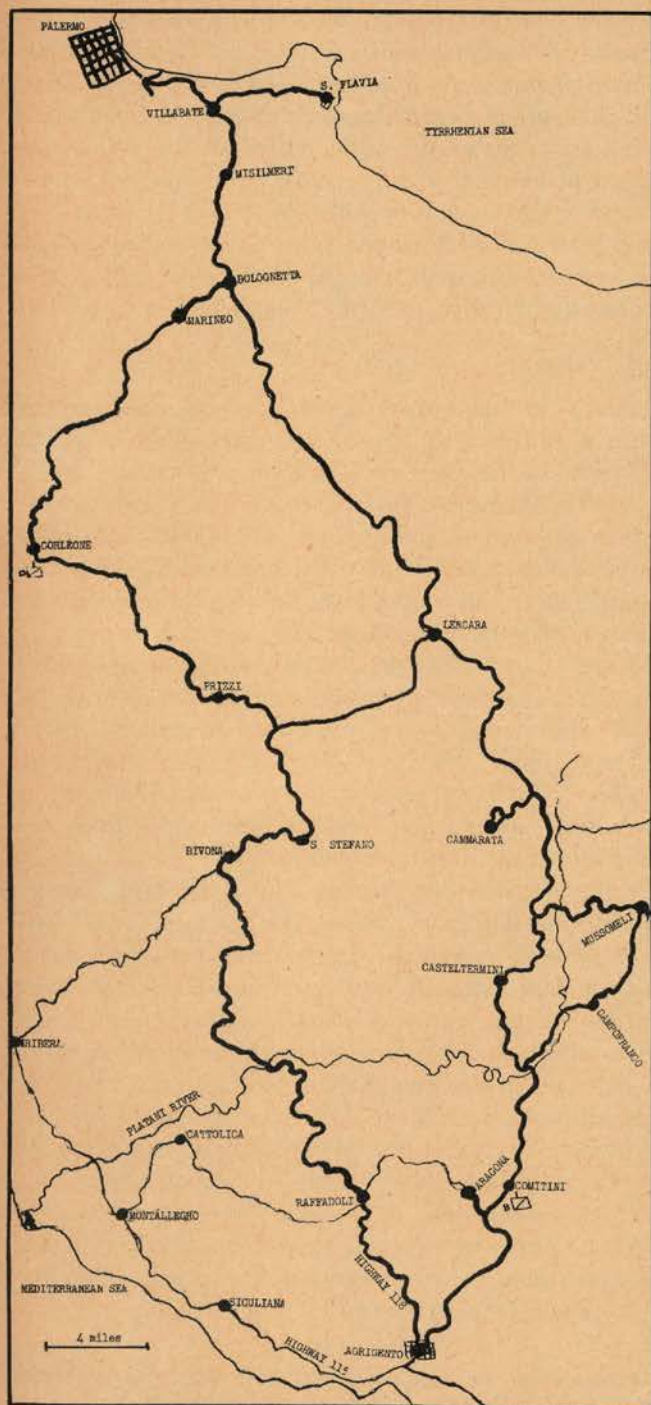
The 2d Platoon as sent north to the Platani River, where its advance was held up until midnight because of a blown road.

The 3d Platoon, moving out at 0830 as advance guard for Battalion, passed the infantry front lines, joined French-Arabian Forces at Mussomeli, and set up an OP and listening post one mile west of the town. The next day, it proceeded west toward Casteltermini, then north toward Lercara—both infantry objectives. The platoon was divided into two sections—one going toward Lercara, and the other west toward Cammarata. The latter section captured 208 Italian prisoners in barracks and destroyed their arms. These men were members of a motorized cavalry unit. The other section was first to arrive in Lercara. Friendly artillery continued fire on a point one mile south of the town, but civilians cheered and greeted the patrol as it entered.

Elements of the reconnaissance battalion move through the town of Ribera, 20 July. Building at left is town jail.







Route of Company "B"—July 19-22.

The 3d Platoon was reassembled at 1800 and proceeded to S. Stefano to join the 2d Platoon, which had moved there through Bivona. The 2d Platoon had encountered no resistance until two miles from S. Stefano where the enemy was found camouflaging a position around the railroad station. In coordination with a Reconnaissance Troop it took the position and captured 30 prisoners in addition to about 30 more dead or wounded. About 200 more prisoners were taken by the infantry.

A long column of vehicles, including some tanks, was seen moving north out of S. Stefano. This column

halted and personnel dispersed when brought under 37mm fire from the scout cars. The vehicles and personnel captured in this action included about 500 prisoners, 7 light tanks, 25 trucks, 5 command cars, six 75mm guns, 1 tractor and 2 motorcycles. The 3d Platoon left S. Stefano at 2000 for the Company CP at Comotini, while the 2d Platoon set up a CP and remained there for the night.

The next morning a patrol moving 6 miles north of S. Stefano discovered four 88mm and four 75mm guns. The 2d Platoon then moved into Prizzi without further resistance, thence to Corleone where 300 prisoners were taken, and remained there patrolling roads and outposting the town through the night of the 21st, and until the Company CP was moved there on the 22d.

On the 20th, the 1st Platoon relieved the 3d Platoon and proceeded to Lercara, where contact was made with the enemy on high ground to the north at 1700. After shelling, then attacking, the platoon took the position and captured one artillery piece, three 20mm guns, one machine gun and 200 prisoners. At 2045 the enemy drove the platoon out with shell fire but failed to occupy the position and the platoon moved in again at about 2200. An armored infantry moved through the position that night and bivouacked about 2 miles from Lercara, and the 1st Platoon established a listening post in advance of the infantry until morning, when it moved on Lercara, seized the town at 0630 and rounded up 600 prisoners. The 1st Platoon, after being relieved by the infantry that entered the town at 0900, proceeded north to where a mine field and a large gas dump were discovered. Twelve prisoners were captured and one soldier killed. After moving to Prizzi and Corleone, it proceeded north and captured 14 Germans and 6 Italians. Friendly infantry moved through the position during the night, and the next morning the 1st Platoon moved out through the infantry and occupied the town of Marineo at 0800. Continuing on to Bologneta, it captured a railroad train and 30 prisoners. Again it proceeded and captured 5 more prisoners and 3 trucks, then pushed on into Misilmeri at about 1130.

Meanwhile, the 3d Platoon proceeded toward Corleone to join the 1st Platoon in the drive north to Palermo. At a rail head midway between Corleone and Marineo 50 Italian prisoners were taken from box cars. The 3d Platoon proceeded north to Marineo, and found that the enemy was fleeing to north. A dismounted patrol was sent to a bridge on the main highway which had been prepared for demolition. Five hundred yards north of the bridge a large booby-trapped ammunition dump was found. After marking this, the Platoon proceeded into Marineo, where it received a warm reception from civilians.

The 1st and 3d Platoons, proceeding north from Misilmeri, encountered an enemy artillery position consisting of an 88mm and one 75mm gun in position. About 1200 a friendly artillery battery came up and shelled the position, after which the 1st and 3d Pla-



toons advanced, took the gun positions and pushed on to Villabate, where about 1200 enemy troops (Italians and Germans) surrendered. A guard was placed on the prisoners, and the 1st Platoon outposted the town until relieved by infantry. A patrol was then sent east to S. Flavia. En route, about one regiment was captured, marched to Villabate, and later taken to Ficarazzi. The 1st Platoon bivouacked at S. Flavia that night with no further contact.

The 3d Platoon proceeded into the outskirts of Palermo, seized and destroyed an arsenal there, and took about 600 more prisoners, who were taken to the prisoner of war area at Villabate. The Platoon withdrew from Palermo when Allied naval guns shelled the city.

#### COMPANY "C"—S. NINFA-PALERMO—21-22 JULY

On the 21st, Company "C" was released from operating with the 82d Airborne Division and moved out on Highway 115 through Sciacca and Menfi.

The 2d Platoon, which had moved on Bivona, then back to a road junction northeast of Calamonaci and thence to Burgio, had returned to Company CP at 1900 on the evening of the 20th.

It now received orders to proceed at 0330 to the

restraining line on Fiume Belice southeast of Castelvetro; to reach and cross this line at 0430. A bridge over Fiume Belice was found to be destroyed. The attached squad of armored engineers and the 2d and 3d Platoons constructed a tank crossing and, with one tank, pulled three ¼-ton trucks across the river. Vehicles of both platoons were forced to wait for gas trucks. Four tanks of the attached tank platoon of Company "D", two ¼-ton trucks of the 3d Platoon, one ¼-ton truck of the 2d Platoon, and the vehicles of the 1st Platoon moved into Castelvetro.

The 2d Platoon ¼-ton truck returned to the bridgehead—leading a convoy of two captured colonels and 8 other officers, plus 27 enlisted men (Italians). The prisoners were turned over to Company Headquarters. The 2d Platoon then established an OP one mile south of Parlanna and sent out patrols at about 1530. The Tank Platoon (attached to the 2d Platoon) moved to a point just north of Parlanna, where it captured one major general, one lieutenant colonel, one major, four captains, four 1st lieutenants, two second lieutenants and 20 other officers (rank not known) and 60 enlisted men (all Italians).

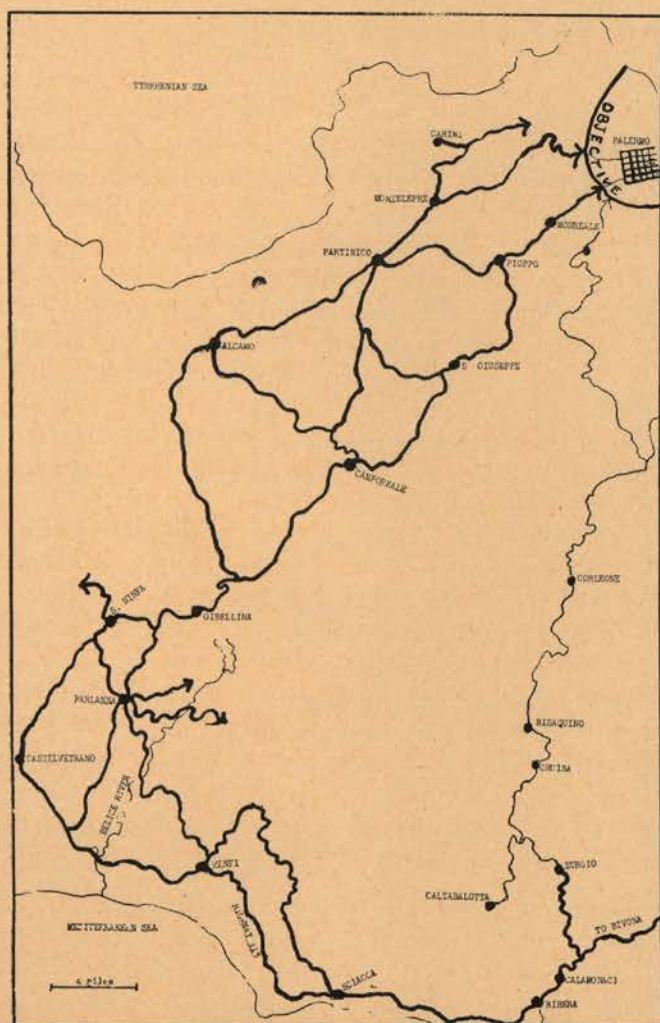
On 22 July the 3d Platoon was dispatched from Company CP to a point one mile east of Alcamo to commence reconnaissance at 0530. It captured one German officer and 8 enlisted men in Alcamo and was forced to shoot one of the Germans when he attempted to escape.

Two large bridges had been blown between Alcamo and Partinico. These were by-passed with the aid of demolitions and the tank platoon. A guard was placed on a large gasoline dump between the two cities. About 20 prisoners were taken at the second bridge, and at least 500 prisoners were assembled at Partinico.

About three miles east of Montelepre, the mountain was blown down over the road, which made it necessary to cross the mountain into Carini and continue up the coastal road. After taking about 600 prisoners in Carini, it was a squad detached to maintain law and order and prevent the destruction of property. The 3d Platoon halted for the night three miles east of Carini in compliance with orders not to enter the city of Palermo until directed.

Meanwhile, Company "C" (less 3d Platoon) moved out of S. Ninfa as the leading element of the Battalion, in the advance on Palermo. With the 1st Platoon in the lead, it followed the route Gibellina-Camporeale, and arrived at S. Giuseppe at approximately 1000 without encountering enemy resistance. At S. Giuseppe several Italian soldiers surrendered and volunteered information that the road north of the town was mined and defended by artillery and machine guns.

In the narrow pass approximately 3 miles north of S. Giuseppe the Scout Section surprised a group of Italian soldiers laying mines in the road. Following machine-gun fire from the Scout Section the Italians surrendered. Before the prisoners could be taken a 75mm



Route of Company "C"—July 21-22.





A forward reconnaissance unit of the Provisional Corps is greeted by civilians in a village on the outskirts of Palermo.

gun from a well camouflaged position in the pass fired upon the leading scout car which was hit and destroyed on the second shot. The Scout Section left vehicles under cover and moved forward dismounted, while the platoon leader moved to high ground on the right of the road in an attempt to spot the hostile gun position. The Scout Section brought retreating Italian soldiers under small-arms fire. The hostile 75mm gun continued to fire on elements of the 1st Platoon until its gun crew was killed by fire from the assault gun of the 2d Platoon. This gun had been moved into position several hundred yards to the south.

As soon as the hostile artillery piece had been destroyed, the company executive officer, the platoon leader of the 2d Platoon, and the scout section leader of the 1st Platoon moved forward with dismounted scouts for a distance of one-half mile up the pass where they were warned by prisoners of the presence of an 88mm gun. The scout section leader climbed to an observation point on the high ground by the road but was unable to locate the gun position.

A radio operator of the 1st Platoon pushed forward in an attempt to point out the gun position to members of a mortar crew that had come up, but as he pointed out the gun, it turned its fire on him, and the second shot made a direct hit and killed him instantly.

The 2d Platoon, in conjunction with elements of the Reconnaissance Company of an armored regiment

immediately returned fire, and two separate enemy gun positions were neutralized in this vicinity by the assault guns.

The 2d Platoon then replaced the 1st Platoon as advance guard, and Company "C" resumed its advance on Palermo. After an advance of approximately two miles the company again encountered heavy antitank fire, which was overcome by the quick action of the company executive officer who organized an assault gun crew and placed fire on the gun positions.

Two assault guns of Company "C" were grouped with three guns of the Reconnaissance Company of the armored regiment to cover the advance of the column on Monreale.

While these assault guns were being organized to cover the movement of the attached light tank platoon, a medium tank platoon of the armored regiment passed through the position and was followed into Monreale, in the outskirts of Palermo. The objective was reached about 1900.

A German 1st lieutenant (acting as forward observer for the 100mm howitzers on the high ground north of Pioppo) was captured near the gun position. Some enemy infantry were encountered when the advance was resumed but were quickly overcome when tanks of Company "D" were placed in front of the advance guard. Company "C", the leading element of the Reconnaissance Battalion, moved into Monreale, its objective, and bivouacked for the night.

#### CONCLUSIONS

Experience of this Reconnaissance Battalion in Sicily demonstrated the specific need of attention to the following training:

- a. Study the training manuals and lessons learned in theaters of actual combat.
- b. Sand-table and practice on the ground the following exercises until the platoon is as well drilled in them as a top-notch football team is drilled in its plays.
  - (1) Reduction of defended road blocks.
  - (2) Meeting engagement with hostile tanks and armored vehicles.
  - (3) Meeting engagement with hostile infantry in position.
  - (4) Passage of defiles (all types).
  - (5) Crossing open terrain.
  - (6) Delaying action.
  - (7) Defense of a position.
  - (8) Establishing observation posts.
  - (9) Dismounted night reconnaissance by small "teams."
  - (10) Removal of mines, and gapping and marking mine fields.

Thorough knowledge of, and training in the above exercises, will enable the reconnaissance platoon to perform most of the multitude of missions that may be assigned to it. The need for excellence in marksmanship with all weapons, communications training, and all phases of scouting and patrolling is obvious.



# German Antipersonnel Weapons



Press Association

This wooden box mine, which has recently appeared on the Italian front, defies detection devices. When the twig, used to hold the lid open, is broken by pressure the lid snaps shut, setting off a spring that operates the detonator and explodes the dynamite.

German caption accompanying this photo, received from a neutral source, says that it shows German troops carrying wooden boxed land mines to the Anzio beachhead sector. Detonator is set off by pressure from above, in some cases not until the ground has been traversed for days and has become well packed.



Press Association



Signal Corps Photo

This pressure type German S. mine is familiarly known to American soldiers as the "Bouncing Betty" because of its ability to "jump" some distance above its emplacement before exploding. Note three-pronged detonator, also knife.

On the Anzio beachhead, a British soldier examines the interior of a German "butterfly" bomb case. After falling a predetermined distance the case is shot open, and a number of small, delayed-action bombs fall among personnel in bivouac areas. These smaller bombs often lie a day or more before exploding.

Wide World





# Mechanics of Battlefield Reconnaissance

*by Lieutenant Colonel Charles J. Hoy\**

**A**N analysis of how a reconnaissance unit functions in battle must cover the phases of reconnaissance from the approach march, to initial contact, to pursuit.

Unfortunately, the uninitiated are quite often prone to picture the meeting engagement as one where two armies are poised opposite each other waiting for the go signal to race for the Kansas-Oklahoma border. This type of action is most unusual and rarely seen on the battlefield.

The normal situations for the meeting engagement are: first, where the enemy has managed to withdraw to a new defensive line so that contact must be regained; or second, where additional troops, arrived in the combat zone, must be moved into the line to reinforce the troops already in contact. This latter situation will generally call for a relocation of all troops in the particular area.

As the meeting engagement in which contact must be gained also covers the situation of relocating troops, a discussion of the former will suffice to illustrate the mechanics involved in either.

## PRIOR TO COMBAT

When the reconnaissance unit moves toward the enemy to gain contact, it should know in general where to expect this contact. Unless the unit knows this, the reconnaissance is liable to move too slowly over the entire route. In this stage, time is all-important. Knowledge of anticipated enemy contact can be gained from several sources. The main and most reliable source will be the G-2. A thorough map study of terrain is essential. The enemy will withdraw to a position that is easy to defend and hard to attack.

Enemy mine fields, enemy air attacks, and enemy long range artillery fire, in that order, are the three big concerns of the reconnaissance unit as it closes with the enemy.

## MINES

Mines are laid primarily to cause delay, and the mine fields become denser the closer the enemy position. Reconnaissance units must not creep along behind a mine detector in this phase, for if they do, they are permitting the enemy to accomplish his mission of delay. Reconnaissance units must take chances. The enemy can not lay the mines everywhere, so he lays them in bottlenecks. True he will scatter a few promis-

cuously to try to cause over-apprehension, but the reconnaissance soldier must realize that the time lost by slow reconnaissance is well spent by the enemy in preparing his defenses—and that means more mine fields.

After many weeks of working through Rommel's mine fields after Kasserine, some of the men and officers of the 81st Reconnaissance Battalion developed an almost psychic power in divining the location of mines. Of course, some would miss in their guesses and discover the mine field by the explosion, but the scout car with sand bags protected the crew somewhat. The 81st had many scout cars to hit mines, and sometimes the crews were severely injured, but none fatally. The bantams were not so fortunate, however. Lt. Granger, of C Company, named his third scout car replacement "Mine Detector No. 3."

Assuming that the advance of the reconnaissance unit is stopped by a mine field, then regardless of whether the mine field was discovered by sound, observation, or by a hunch, the following procedure is suggested: Try to find a path around it, but do not waste too much time doing this.

When the 81st pursued the enemy east from Kariouan to Sousse, in April 1943, the main highway, an excellent paved road, was found cratered at a point where the road crossed a swamp. Turning south in search of virgin ground, the unit moved parallel to the edge of the swamp, continued on for about 400 yards along a poppy field, and came to a portion that appeared untouched for some time by men or vehicles. Cutting east again, then north back to the road, it by-passed that large mine field in less than fifteen minutes.

Sometimes reconnaissance units were not that lucky. When no by-pass was possible, it was necessary to dismount, use the mine detector or bayonets, clear and mark the by-pass, and then continue on. This had to be done quickly, and reconnaissance soldiers must be trained to do it automatically.

The mine fields discussed here were those laid along the route of advance to cause delay. Before the enemy withdrew, his troops and supply installations were using that same terrain. His greatest obstacle in laying those mines, before he withdrew to his new position, was time. Many of the mines had to be laid after he had moved the bulk of his forces to the rear. It is obvious, therefore, how important it is for the reconnaissance unit to move boldly and not permit the

\*Instructor, The Cavalry School. Formerly Commander, 81st Reconnaissance Battalion, Tunisia.



enemy the advantage of that time. All soldiers in a reconnaissance unit must be past-masters at mine removal.

#### AIR ATTACKS

Although not as effective as the mine field, enemy air attacks present additional problems for the reconnaissance unit. Concealment, dispersion, antiaircraft fire, and slit trenches are necessary defenses against enemy air. It would seem that reconnaissance units would make poor targets for enemy air, but because of the reconnaissance units' proximity to enemy positions, enemy aircraft frequently attack these units in order to stop forward movement of advanced elements.

In the valley at Sened, in February 1943, when the enemy had air supremacy in that area, C and A Companies were dispersed along the slopes of the bare rocky hills to the north and south of Station de Sened. Although ten or more Stukas and Messerschmitts attacked several times a day for three days, casualties were very few. Each of the scout cars with the 81st had a .50 caliber machine gun mounted on it. Leaving this gun manned, the rest of the crew usually took cover at a

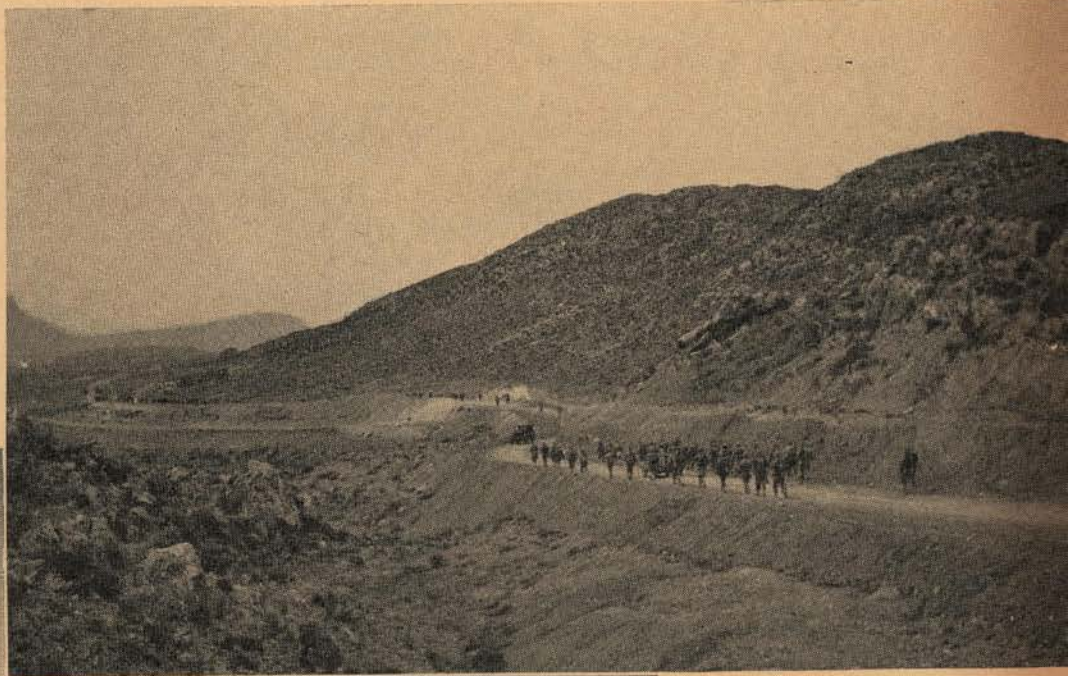
distance from the car and prepared to fire their individual weapons. Men were instructed to hold their fire until the planes came within effective range. It is a waste of ammunition to fire every time a plane is seen unless damage can be inflicted on it. On the other hand, whenever a plane comes within range, it should really be given the medicine.

By the same token, men should not be allowed to get "slit trenchitis"; that is, they should not be permitted to run for a slit trench every time a plane's motor is heard. If permitted to remain in slit trenches, men get morbid, and it is demoralizing to see men who are not in danger run for cover. They should take cover only when necessary. Officers and NCO's should be the last in, and certainly the first out of slit trenches in the event of an air attack.

It is better to have only the gunner remain in the scout car, because the plane (especially if it is a bomber) usually goes for the vehicle; and if the crew is still in a car that gets hit, the loss is great. No difficulty should be experienced in getting a gunner to man the gun; in fact, it was just the opposite in Tunisia. It was

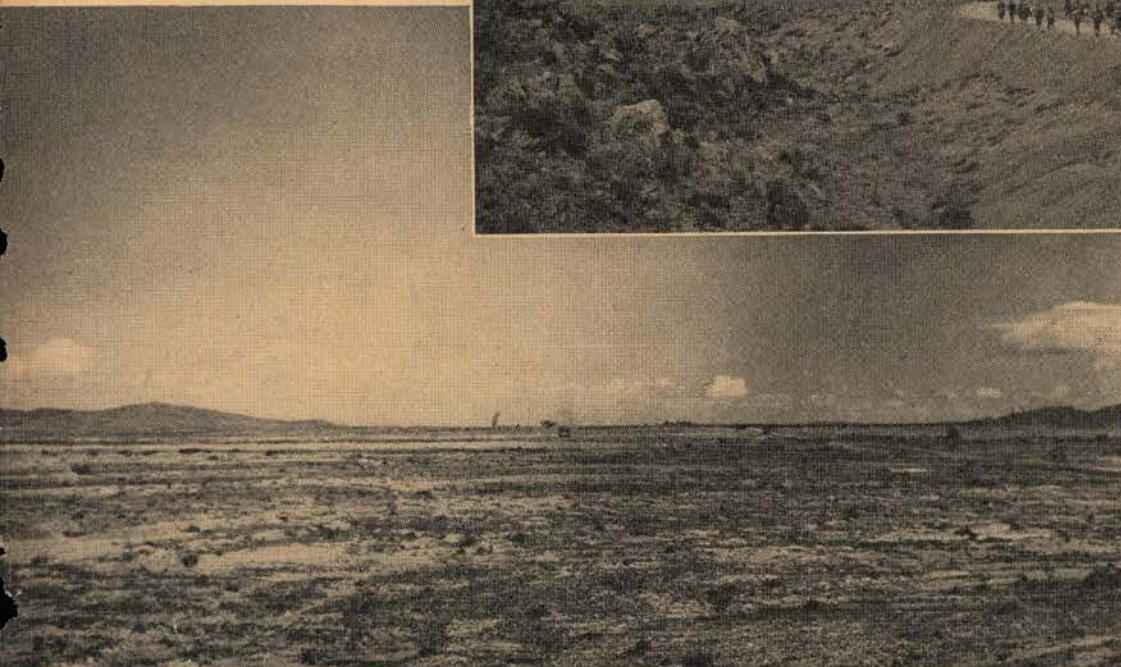
*Right: Infantrymen in Tunisia follow a reconnaissance unit which has preceded them through the mine fields in hot pursuit of the retreating enemy.*

Signal Corps Photo



*Left: Between Gafsa and Maknassy a company of the 1st Armored Division forms for an offensive action against the enemy, after thorough reconnaissance has furnished desired information.*

Signal Corps Photo





found that with well trained troops, men would much rather fire the .50 caliber machine gun at the enemy plane than do anything else during an air attack.

#### LONG RANGE ARTILLERY FIRE

The enemy will try to delay the advance of the reconnaissance elements by long range fire. This fire is not always accurate, and reconnaissance elements must move in under it and continue forward. The men must learn to use their ears and know the characteristics of the enemy weapons. The sound of the shell as it describes its trajectory is very important. Also the degree of loudness, or absence, of the muzzle blast gives information. By using their ears and eyes, troops can determine whether it is long or mid-range artillery, mortars, or antitank fire, that is landing.

At Sened, in February, it was necessary for A Company to withdraw in the face of mid-range artillery and mortar fire. Because of terrain difficulties, the company had to infiltrate through interdictory fire on some of the bottlenecks of our line of retreat. This was done without casualties because the officer or NCO infiltrated his vehicle through the shelled area by listening for the muzzle blast and by knowing from this how many seconds it would be before the shell landed. The Germans did the same thing to us once at Sheitla when they had to cross through our artillery fire. The success of such tactics is dependent, of course, upon the intensity of the fire.

Reconnaissance units must not consider that they have gained contact with the enemy when they receive artillery fire, and they must not be stopped by it unless it is intense. If it is intense, then they have to find a way around it.

#### CONTACT

After passing through the artillery fire, contact with the enemy can be expected shortly. The chances are that the reconnaissance unit can continue mounted through the artillery fire, but movement soon becomes more restricted. The nearer the enemy, the more numerous the mine fields.

Contact is finally gained when the reconnaissance unit has received accurate antitank fire, small arms fire, or has seen the enemy. In any event, when contact is made, the dismounted phase begins. Assuming that this reconnaissance unit which has made contact is a platoon with an attached assault gun, and that the leading vehicle received fire, normally the action should be like this:

The lead vehicle goes for cover, and generally this cover is nearby. The crew should not whirl the vehicle around and go dashing back with the report that they were fired upon. There is no need for pseudo Paul Reveres in reconnaissance; that is, anyone who goes excitedly back yelling "Jerry's coming" or "tanks are coming." This type of soldier can do more damage than the enemy. Usually, the number of enemy tanks this type of soldier saw is increased by the product of

the speed of his vehicle, and the distance in yards that he has returned from his initial contact. No excited man should be allowed to pass back to the rear. Properly, the lead car should go quickly to the nearest cover, and a little anticipatory planning helps.

The second vehicle, if possible, returns the fire at the same time that the first vehicle takes cover.

The assault gun, back at the tail of the platoon, should open fire as soon as possible. With the assault gun and the weapon on the second vehicle firing, the crew of the first vehicle is given a break.

A dismounted reconnaissance should be made immediately to determine what opposition the vehicle may have met. In the meantime, the other two teams should have started immediately to by-pass the opposition, or else move so that they can establish observation posts on one flank, or both flanks. This movement should be part of a battle drill, so that it will be done without command, or at most after the briefest order or signal from the commander. Each team knows that it must gain dominant observation and reconnoiter for a by-pass around the enemy. In this, anticipatory planning will pay big dividends. Previous map study should have fixed firmly the key terrain features in the reconnaissance man's mind.

#### ESTABLISHING THE OP

The initial establishment of the observation post will probably be done under enemy observation; therefore, it should be a well protected one.

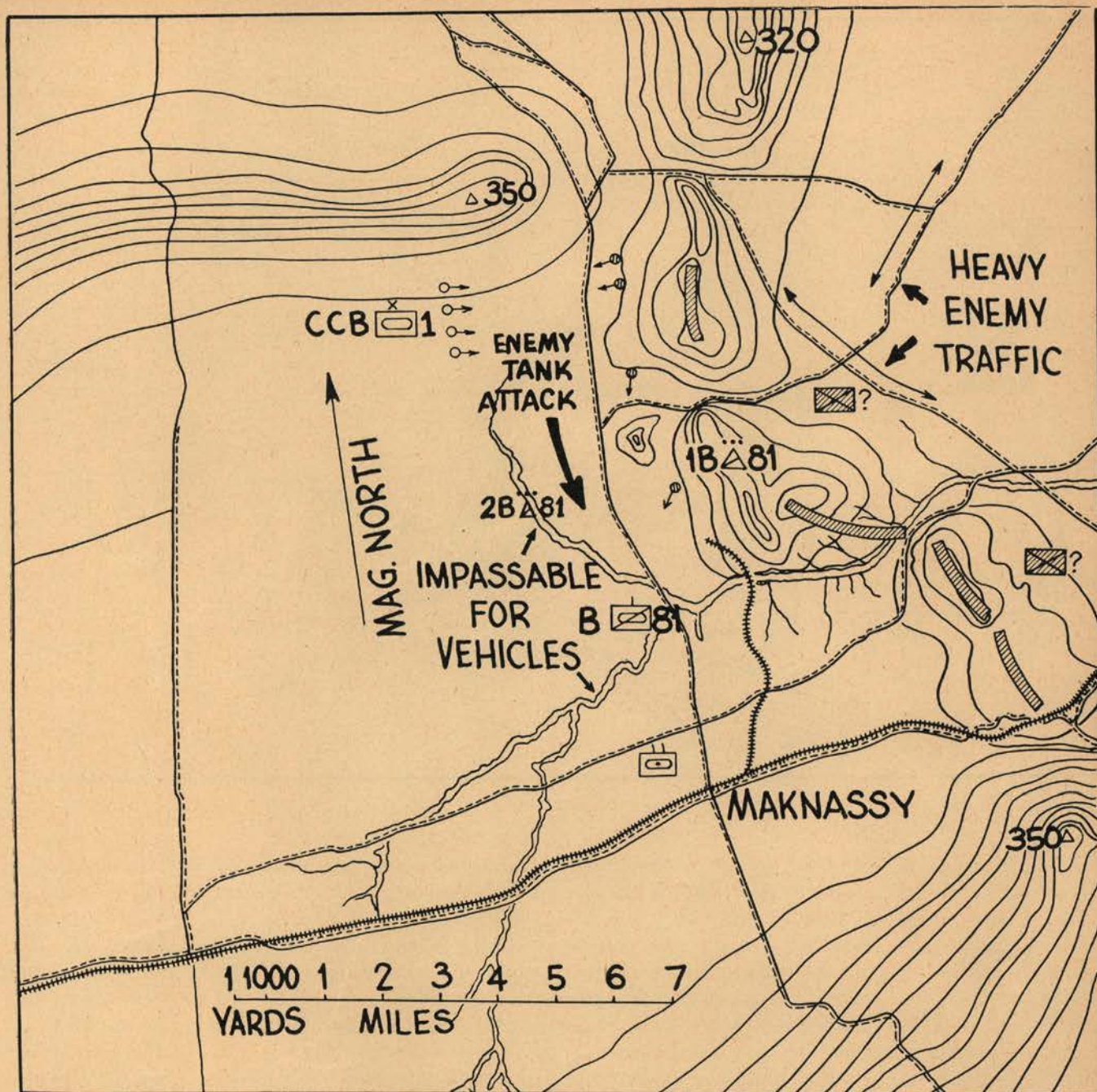
For the purpose of coherence, let it be assumed that in the example just given, no immediate by-pass is found, but that a dismounted observation post is established on one of the flanks by the second team. Leaving his vehicles at the rear, the leader takes his SCR 510 and machine gun from one bantam, one man from the armored car, and two men from each of the mortar and machine gun bantams—a total of six men—and proceeds forward dismounted.

After his arrival at the OP, the leader immediately pin-points his location accurately, notes his range of vision in all directions on his map, and reports that as soon as possible. The radio is set up, the machine gun is put in position, and the other two men help protect the OP. The longer this OP is maintained, the more work is done on it. The reconnaissance leader, however, should never be satisfied with his OP. He should always want to advance it.

The next movement of this OP, or the establishment of an OP by one of the other teams, will probably be by stealth. If one of the other teams is to establish this second OP, its leader most likely will come up to the first OP, study the terrain, and pick his location and route thereto. It may be necessary to take a circuitous route to the new OP, or even wait until darkness.

At Maknassy, in March, the advance of the 81st had been stopped. The enemy held the Leben Wadi, and the route to the hills northeast of the railroad bridge





Sketch No. 1.

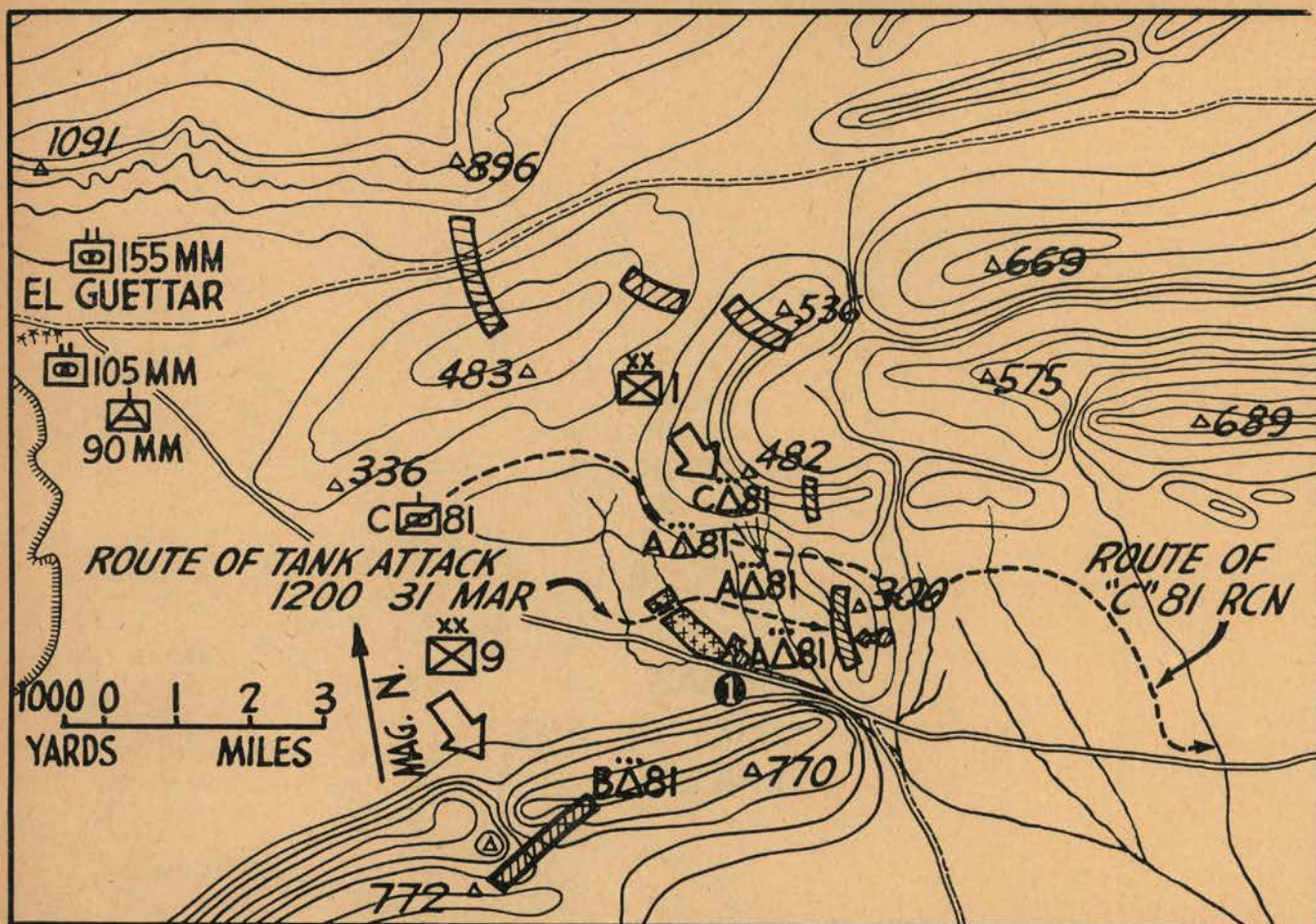
appeared to be devoid of cover. A patrol, under Lt. Rossman, from B Company moved out that night to establish a dismounted OP on the hills as shown on sketch No. 1. This patrol worked its way through the enemy positions and established the OP. For the next two days this OP was maintained, and it reported much valuable information. The lieutenant adjusted artillery fire on the targets in rear of the line of hills. An enemy tank attack moved south towards the bridges over the wadi on the second day, but it was still possible to maintain the OP. Finally, on the third night this patrol was told to return, as it was out of water and food.

Another patrol under Lt. Lytle went out that night to the same ridge and established another OP. Just as

it started to get light, this patrol discovered that just a few yards away was an enemy observation post. The B Company patrol shot first, killed a German artillery officer and NCO and wounded a private. They searched the bodies and took all papers and the German radio over to their side of the hill. Shortly thereafter, the enemy apparently realized that there was something wrong up above and sent a strong infantry detachment to check their silent F.A. observation post. Lt. Lytle had reported the situation, and B Company's three assault guns in the wadi near the bridge opened fire instantly.

Lt. Lytle was ordered back to the troop when the enemy started to close in on him. His patrol carried their captured radio, maps, and papers, and sauntered





Sketch No. 2.

back under the protection of the assault gunfire. They found that the ground was cut by many little wadis that afforded good cover and concealment. This was not evident from a map study, nor from a view of the ground from the OP's in the vicinity of the railroad bridge—which is quite often the case. For example, a patrol will move out dismounted, when there is no apparent covered route for vehicles, but by actually moving dismounted over the ground, a vehicular route will be found and this is one way that vehicles can be brought up later.

#### INTENSIFIED RECONNAISSANCE

In the original situation stated earlier, after the first team had come under fire, the second team established an OP under enemy observation, and the third team established one by stealth deeper in the enemy's position.

After that, the platoon begins the intensified reconnaissance phase, marked by bold aggressive action. The situation must be developed further and the initiative taken away from the enemy. The remainder of the platoon must be so disposed as to protect and maintain the second team's OP. The enemy will not let a reconnaissance unit sit complacently on an OP and keep it. The more timid the reconnaissance becomes, the more

brazen the enemy becomes, so he must be shown very definitely that the reconnaissance intends to keep that OP.

In the Mouse Trap area south of Mateur, one of C Company's platoons had an OP within 400 yards of an enemy position on Dj Badgar. The enemy knew that the OP was there, and finally sent a platoon out to get it. The C Company lieutenant on the OP saw the platoon coming and alerted his two attached tanks, which were in a covered position about 200 yards in his rear. The tanks came out, guided by radio, swung around the little knoll where the OP was and opened fire with canister. The tanks killed or wounded all but seven men, who were marched back to Allied lines in front of the buttoned up tanks. All this was done in plain view of the enemy on Dj Badgar. It apparently was most impressive, as the enemy did not bother that OP any more.

The 81st continued to outpatrol the enemy in that area day and night, and soon became the more brazen of the two.

The troop and squadron commanders are better suited to order and coordinate night patrols than the platoon leader. Night patrols must be planned thoroughly, and a single definite mission must be given in an ice clear order. (Reconnaissance units in Italy



have been reported to have sent several patrols five to seven miles behind the enemy lines and stayed back there around three days.)

The enemy will try to drive the OP off by harassing artillery and mortar fire. Quite frequently he may only suspect that an OP is there, but it is well to remember that he must maintain a continuous fire before he can prevent the OP from being manned.

#### MAINTAINING CONTACT

If the reconnaissance platoon reaches the enemy's main defensive line, the situation becomes more developed and even tends to become stalemated. Quite frequently, some of the artillery forward observers join the reconnaissance platoons on the latter's OP's, or they may have accompanied the reconnaissance platoon. Friendly infantry moves up into the vicinity, and the battle is begun in reality.

The big job that the reconnaissance elements then have is to maintain contact. Continued manning of OP's, day and night patrols and listening posts at key points are necessary for two reasons—to give timely warning in the event of a counterattack, but mainly, to prevent the enemy from secretly withdrawing. It must be realized that the enemy will try to withdraw at night, and it is a hard job to maintain contact during this period. The enemy will probably leave a shell of his forces and increase his activity on the front by patrols, raids, and artillery fire. Meanwhile, he may be withdrawing the bulk of his forces back to their new position. Reconnaissance elements must assist in discovering this operation in time to permit friendly forces to interfere with it.

If the enemy fails to make a night withdrawal, and the stage is set for the big drive to crack his position, reconnaissance units in contact with the enemy normally will be informed in ample time to get ready for the break-through. Every single man in the affected reconnaissance unit should know what is scheduled and when. By that is meant that he should know, for instance, that the artillery is going to lay down a terrific concentration at 0700 tomorrow for one hour, and then the infantry is to jump off, and the armor is poised back behind ready to go through.

The reconnaissance mission for the big drive will be to locate enemy resistance and any available by-passes and find routes for the exploiting force. The reconnaissance platoons waiting for the artillery to open up should be straining at their leashes. As soon as the artillery opens, or shortly thereafter, they should start probing. The break-through does not happen until after the infantry wipes out all enemy defenses, but it should be initiated sometime during this phase, not after. It will be too late then. Six platoons may probe during this time, and if two make it, then two routes through the enemy position will have been made for the exploitation force. A few days before, these same two platoons might have been stopped by antitank posi-

tions, but on the morning of the break-through, because of artillery fire, the enemy cannot man his weapons effectively, and these two platoons get through.

At El Guettar in April the 81st Reconnaissance Battalion was disposed as shown on sketch No. 2. After several days of battle, the enemy's resistance started to crumble. At dawn on 8 April, Lt. John Souther's C Company platoon started probing on the north flank. Inching its way forward, it slipped north of the enemy position, and behind it, then cut to the main road, and raced east towards Gabes. At that time, about 0730, there was still considerable enemy action back behind the platoon. The men felt confident, however, that the American mobile force was going to follow right behind.

The entire reconnaissance battalion poured through Souther's gap and was followed by tanks, tank destroyers, armored infantry and armored artillery. Contact with an enemy tank column was gained about 25 miles east, and about the same time the leading elements of the British Eighth Army were met. The battalion helped rescue some British lancers who had been captured, and took over 700 prisoners that day. Night fell with the battalion in contact with an enemy tank force, and a fire fight continued throughout the night.

#### CONCLUSION

*No matter how bold or aggressive the action becomes, the reconnaissance soldier must never forget that he is out there mainly to get back accurate, complete and timely information.*

### Modern Reconnaissance

*The most serious lack in the military literature of this war has been an adequate book on reconnaissance. The insistent demands by men in training and on the battlefield for a single volume which would comprise the important information thus far secured on the subject has given birth to the new and comprehensive book, Modern Reconnaissance, to be published by The Cavalry Journal June 1st.*

*The Table of Contents of this book includes articles on training for reconnaissance units, information on the problems met in various war theaters, and stories of the practical value of reconnaissance in actual warfare by men who participated in the action described.*

*The format has been planned with an eye to the needs of men "travelling light." Excellent maps for study in connection with the articles are included as well as an abundance of illustrations, yet the book has been kept to a convenient size to pack easily, or fit into a uniform pocket.*

*(See inside front cover for Table of Contents.)*





British Official Photo

This German "secret weapon" was captured on the Anzio Beachhead, Italy. Known as the "Doodlebug," it is cable-controlled. Approximate length, including bumper bar, 69 inches; length excluding bumper bar, 51 inches; height, 25 inches. Explosive chamber holds 250 rounds and construction appears to be spot-welded throughout. The side plates over the battery and electric motor are slightly under one-tenth of an inch thick, while an extra plate one-



quarter of an inch thick has been added to increase protection to the front. Photo at left above shows side view. The rear compartment holds the storage battery, while the electric motor with direct drive to the driving sprocket is in the forward compartment. The arrangement is duplicated on the opposite side. Photo at right above shows drum holding the control wire. U. S. Ordnance discarded idea in 1935. Its use by Germans has not been successful.



Press Association, Inc.

A Fifth Army soldier inspects machine-gun mount in a German portable pillbox in the Cassino area. Rumored to have been brought down from the Mannerheim Line, this pillbox controlled the plain leading up to Vallerotonda and St. Elia in background. U. S. soldiers now use flame throwers against such fortified emplacements in Italy.



# Editorial Comment

## "And It Came to Pass"

In the January-February (1942) issue, THE CAVALRY JOURNAL carried an article containing the speech made December 3, 1941, by Major General J. K. Herr (then Chief of Cavalry) at the annual meeting of the Horse and Mule Association of America.

In the past two years the JOURNAL has published a number of articles dealing with the brilliant successes of the Soviet army. Some of the articles have been written by well known and authoritative military officers; others by war correspondents in the Soviet army. Many of these articles deal with the combined use of cavalry, tanks, motorized infantry, and air forces. Especially is the cavalry-tank team emphasized as a big contributing factor in the exploitation of the Red Army's successes and break-throughs. This complete utilization of all the horse and motor resources of a nation has been co-ordinated by a common purpose—the destruction of the Nazi armies.

The conclusion of General Herr's address of December 3, 1941, is reprinted here because it seems amazingly prophetic of the Russian war machine of 1943-44.

*From the standpoint of military efficiency and a balanced use of our horse and motor resources, it is believed we should use animal instead of motor transport in a proportion of our marching divisions.*

*We should add to the Armored Force and Motorized Infantry Ground Exploitation Team, divisions and corps of cavalry to produce the greatest exploitation force yet devised.*

*The most effective reconnaissance is accomplished by motor plus horse. We should have horse reconnaissance groups with all infantry echelons from regiment to corps.*

*The strategic mobility of cavalry divisions should be amplified by the use of motor transport, consisting of truck-tractors with semi-trailers to transport cavalry divisions on long road marches.*

*The power of armored forces will be diminished because of the threat of antitank and air power.*

*The relative power of cavalry will increase because of its power to evade destruction from the air by cross-country mobility and dispersion. Cavalry will be able to disperse, evade, continue on its mission, and fight.*

—Major General John K. Herr, Retired,  
The Cavalry Journal, January-February, 1942.

See article "Are Horses Essential in Modern War,"  
Page 2.

## National Horse Roster

The first number of Don Henderson's *National Horse Roster* reached this office a few days ago. It is an excellent little bi-monthly pamphlet listing horses of all types for sale and giving items of interest to horse owners. If you are a horseman or are interested in keeping abreast of horse news, get in touch with Don Henderson, Box 186, Berryville, Va. and get a copy of this "newsy" National Horse Roster. You will find it enjoyable reading.

## Preventive Maintenance

Preventing damage helps maintain the fighting efficiency needed to win the war.

\* \* \*

Take a load off your mind. Use Preventive Maintenance instead of heavy maintenance.

\* \* \*

The value of Preventive Maintenance cannot be estimated in terms of dollars and cents. It should rather be counted in terms of the battles it can win and the lives it can save.

\* \* \*

A stitch in time saves nine and is not nearly so embarrassing. Sometime when you forget to take a few stitches of Preventive Maintenance you might be embarrassed to death.

\* \* \*

The Preventive Maintenance services you perform do double duty. First, and most important, they protect your life and the lives of those around you by keeping your fighting weapons in fighting condition. Second, they save your equipment from needless wear and tear, and the resulting waste of time and money required to replace or recondition it.

\* \* \*

Maintenance is a war job—your war job. So make it easier for yourself. Remember that Preventive Maintenance is the *easiest* maintenance.

\* \* \*

"It's not the cost, it's the upkeep" is an old phrase, but it has a new meaning when applied to Army equipment. For truly, it is not the cost that matters now, but the upkeep. And that upkeep depends on you and the Preventive Maintenance services you perform.

\* \* \*

Preventive Maintenance is *not* a military secret. So talk about it to everyone, and perform it on everything.


\* \* \*

Your January-February, 1944, Issue

This issue is now out of print and unavailable. If you have finished reading your copy please send it back to The Cavalry Journal office.



## Are You Getting Your Cavalry Journal?

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SENDERS NAME \_\_\_\_\_  
SENDERS ADDRESS \_\_\_\_\_  
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CENSOR'S STAMP \_\_\_\_\_


Dear Sir, *England*

I have not received any journals for a long time, but your statement reach me regularly.

My previous address was  
88th ARMD. RCN. BN. APO 258  
CAMP POLK, LA.

*1st Lt. Cav.*

**V - MAIL**

No.  **THE CAVALRY JOURNAL**  
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Dear Sir,

At present I am overseas and have not received any of the more recent copies.

I would appreciate your sending me the balance of my subscription and the copies for the months of March and April.

Yours truly  
*1st Lt. Cav.*


**V - MAIL**

The two letters shown above are samples of many received from officers who have gone overseas, but who have neglected to send us their new address. As a consequence, they have not received their copies of THE CAVALRY JOURNAL. Although all mail is supposed to be forwarded to men in the service, it does not always work out that way. THE CAVALRY JOURNAL is fourth class mail, and as such does not receive the same prompt

handling as does first class matter. Sometimes these magazines are returned to us; sometimes they are forwarded; but often they are "lost." In the first letter compare the "present address" with the "previous address," to which we had been sending THE CAVALRY JOURNAL. Is there any wonder that delivery was not made?

When complaints such as these are received, every effort is made to replace all missing copies of THE CAVALRY JOURNAL—as long as extra copies are available.

Shown below is a letter from an officer for whom such a replacement has been made. When handled in this manner, however, one copy of THE CAVALRY JOURNAL is wasted for each duplicate mailed, and the Post Office must handle two pieces of mail in order to deliver one. This places an additional and unnecessary load on a postal and transportation system which is already overburdened—"unnecessary" because a postal card giving the new address, would have solved the problem.

No.  **To Circulation Mgt.**  
**The Cavalry Journal**  
1719 K Street, NW  
Washington 6, D.C. **APRIL 18, 1944**  
SENDERS NAME \_\_\_\_\_  
SENDERS ADDRESS \_\_\_\_\_  
DATE \_\_\_\_\_  
CENSOR'S STAMP \_\_\_\_\_

*Australia*

Dear Sir:

Just a short line to let you know that I am now receiving the journal OK and yesterday the back issues arrived.

I can't tell you how much I enjoy each issue and when I'm through with it I pass it on to my brother officers who not only enjoy it, but get a better understanding of our Cavalry area.

Yours very truly  
*1st Lt. Cav.*

**V - MAIL**

It is not always the matter of a transfer overseas that causes a subscriber to lose his CAVALRY JOURNAL. Letters similar to these are also received from officers still in the United States. If you were formerly stationed at "A," and are now stationed at "Z," it is probable that your CAVALRY JOURNAL is still being mailed to "A" unless you have sent in your new address. Perhaps it will be forwarded from "A"; perhaps not. It would be much simpler, however, if you will arrange to let us send your mail direct to you.



# General Hawkins' Notes

## Action of a Patrol When Fired Upon

SOME general remarks about reconnaissance and patrols were included in my Notes published in the September-October, 1943, number of THE CAV-ALRY JOURNAL.

It is assumed that the difference between various types of patrols is understood, and that the value of cavalry for reconnaissance is also understood. This may be a rash assumption in view of the suppression of horse cavalry in the American and British armies. The value of the tank-cavalry team has been demonstrated thoroughly in the Russian army, both for reconnaissance and for battle. The value of horsemen for patrolling has been demonstrated in Italy. These Notes, when discussing reconnaissance or some of the details of patrolling, refer to cavalry reconnaissance or the tank-cavalry team in the performance of that duty. This particular Note offers some suggestions as to one very common situation that so often arises in the performance of patrolling.

Almost all young officers find themselves wondering about *what to do* if, while leading a patrol or point of an advance guard, they suddenly come into contact with an enemy of undetermined strength who fires upon the patrol from a concealed position.

The enemy may be a small patrol or large force. The column behind the point must not be delayed unnecessarily. But the point or patrol cannot risk advancing to attack until its leader knows something of the strength of the enemy. And part of the mission of the point (or even a reconnaissance patrol under the same circumstances) is to ascertain the strength of the enemy.

The following brief formula has been found useful for the *procedure of a patrol acting as point of an advance guard or acting alone, which comes under light fire from an enemy of undetermined strength*:

First: *Take cover*—to right, left, forward or rear, and keep scattered.

Second: *Take a look!* The patrol leader rushes to a point from which he can see, and searches with field glasses the place from which the fire came. Usually, not over two minutes should be taken for this.

Third: *Act!* If the patrol is the *point of an advance guard* or a *patrol of a covering force*, and the leader is unable to determine by observation the size and nature of the enemy, he immediately forms his patrol as mounted skirmishers with about ten yard intervals and moves rapidly *by the route giving the best cover* to reconnoiter the enemy position. If the patrol is the *point of an advance guard*, this must be done promptly within a zone not over 300 yards on either side of the axis of march.

If the patrol is acting alone as a *reconnaissance patrol*, it is of course not confined to any zone of action, and the leader decides to reconnoiter the enemy if his mission requires a report on any sign of the enemy—or, he may decide to avoid that element of the enemy and go around it and proceed toward certain areas which his mission requires him to explore.

If the patrol is a *combat patrol*, it must remain under cover and in readiness to resist the enemy advance so as to protect that flank from surprise attack until the column from which it was sent out has passed that point. In the meantime the leader of the combat patrol sends in reports to keep his commander informed.

If the patrol is a *connecting patrol* sometimes called *liaison patrol*, it avoids combat if possible and attempts to keep its relative position between the forces that it must keep connected. The presence of the enemy, of course, is reported.

It is obvious, therefore, that after his first two actions, taking cover and taking a look, the leader must determine his third action in accordance with his mission and special instructions.

In certain country a patrol is liable to find itself at times *without any cover* near it when it is fired upon, and no cover between it and the place from which the enemy fire apparently comes. In such a case, the action depends upon the mission.

If the patrol is a point or a covering detachment, it must determine the position and strength of the enemy, and the only solution is to deploy at once as foragers (mounted skirmishers) at about ten-yard intervals. Then the patrol separates into two groups with a 100-200 yard interval between groups. Each group gallops at speed toward the enemy to draw his fire or drive him out if he is only a small patrol. If this procedure draws heavy fire or discovers the enemy to be in force, the patrol will have accomplished that part of its mission, and the two groups should retreat at full speed in divergent directions. The supporting forces then take over the action.

If the patrol is a reconnaissance patrol, it may be required to move widely around the enemy in order to reconnoiter the area or areas as required by its mission.

Armored car patrols can carry out these same principles, with some modifications; but infantry patrols cannot act so boldly and when there is no cover, must merely deploy and remain in observation while reporting to the next higher commander. When there is cover for an infantry or dismounted patrol to use in advancing to reconnoiter the enemy more closely or to explore areas as required in its mission, it uses such cover by the same principles as those controlling mounted patrols except that they cannot go as far or act as boldly.



# With the 26th Cavalry

*by Major Arthur K. Whitehead, Cavalry*

## JAP ATTACK

ON Sunday, December 7th, 1941, the day before the Asiatic War broke, the 26th Cavalry Regiment (P.S.), less one troop, was at Fort Stotsenburg, Pampanga. Troop "F," detached, was stationed near Nichols Field, Manila. The regiment was composed of three squadrons—two rifle squadrons and headquarters squadron. The rifle squadrons consisted of three rifle troops each—"A," "B," and "C" in the first squadron; "E," "F," and "G" in the second. The rifle troop was composed of two rifle platoons and one light machine gun platoon, plus troop headquarters. The rifle platoons had from two to three squads each; the light machine gun platoon always had two complete squads, which had a total of four guns. Troop headquarters consisted of mess, supply, administration and stables. There were about 90 enlisted men in each rifle troop, and men were drawn from the troops for both squadron and regimental headquarters.

Headquarters Squadron consisted of Headquarters

and Service Troop and Machine Gun Troop. Headquarters Troop consisted of a communications platoon, a scout car platoon, and a transportation platoon plus troop headquarters. Machine Gun Troop, as I remember, had one platoon of .50 calibers—two guns, and two platoons of .30 calibers—water-cooled machine guns; total, 8 guns. Officers were American—a total of about 36.

For several months preceding the Japanese attack, the regiment had been training with the idea in mind that it was actually at war. Troops never moved out of stables without full pack and ammunition; night problems and marching were stiff and exacting. All different phases of tactics were first studied in the classroom, then executed by platoons on a competitive basis. Critiques afterward spared no one including the regimental commander. Blank ammunition was used in revolvers on mounted problems to accustom men and horses to the firing.

Special attention was given to conditioning the



Officers tent line in camp near Fort Stotsenburg. Pictures were made and sent home by the author prior to the Jap attack.

A squadron picket line in camp about 20 miles south of Fort Stotsenburg, November, 1941.



A herd of carabao driven along a Philippine road. A barbed-wire fence surrounds the sugar-cane field in background.



# dry (P.S.) IN THE PHILIPPINES

## December 7-22, 1941

horses and keeping them in good shape. In the Philippines, it seemed that more horses were on sick report than was usual in the States, and most of their trouble appeared to be due to bad feet or bad backs caused by the heat and excess moisture in the air and ground. Horseshoers, who previously had not seen a book for ten years, began to use manuals on horse-shoeing and care of the feet as their bible. Burlap sacks were placed underneath the horse blanket but without successful results. A particular effort was made to keep the men sitting forward and in the middle of their saddles. After a long march, horses were led with the cinch tight. Back in stables, the cinch was loosened while the saddle was left on. Then the saddle was removed, the blanket turned, and the back rubbed. Every platoon leader stood stables every day with a rod in his hand. This brought remarkable results. Horses and pack mules with full pack were made to jump a two-foot barrier every day before entering stables.

Every horse in the regiment was taught to load on and off a transport truck. Much patience was required, but a perfect system was finally evolved. One man was stationed on each side of the truck with the sole

duty of tying the horse down after he was in position. One man stood on each side of the ramp near the truck to steady the horse on the ramp. Another man stood on each side at the base of the ramp with a rope which, if the horse hesitated, was passed between the two men, placed just above the horse's hocks; and, with a little forward force on the part of the men, the horse rode up the ramp.

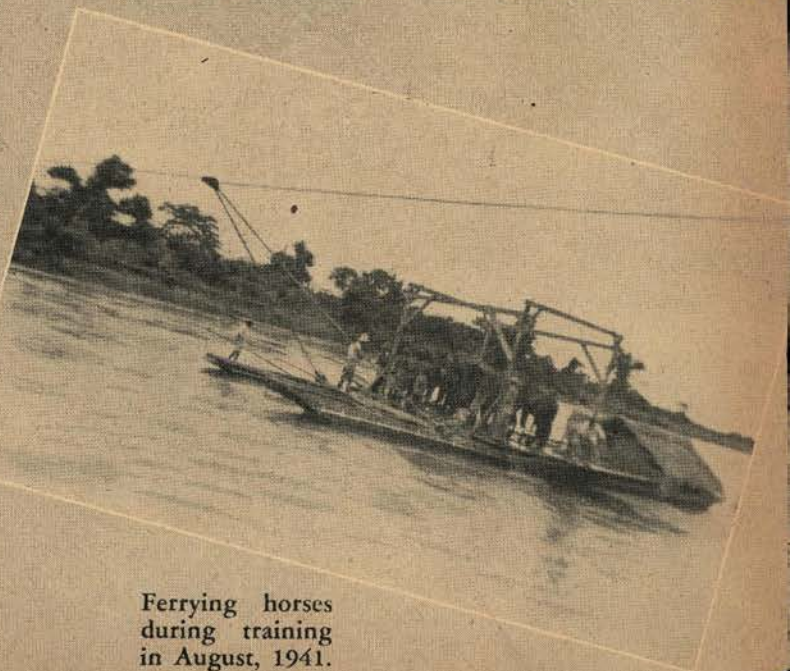
For a month and a half prior to the war, a platoon with a squad of light machine guns attached stood parachute watch every day from a half hour before dawn to one hour afterward.

As a lieutenant with Troop "A," 26th Cavalry (P.S.), Major Whitehead witnessed the Jap attack on the Philippines, saw Stotsenburg bombed, marched north with the regiment and fought the Japs at Lingayan Gulf. His story is the first eyewitness account to have been brought home by a cavalryman.



Major Whitehead, at right, with another officer of the 26th Cavalry at Dingalan Bay on the east coast of Luzon, July, 1941.

Troop "E" stables, Fort Stotsenburg.



Ferrying horses during training in August, 1941.



At 0100, 8 December 1941, Troop "A," to which I was assigned, left the stables for a night march to an area between Capas and Camp O'Donnel, Tarlac. The troop arrived about 0700 and went into bivouac. After grooming the horses, the men had breakfast and lay down to rest.

At 0800 an officer-courier arrived with news of the Pearl Harbor attack, and delivered instructions for the troop to join the regiment in the Bamban River Valley after dark. The rest of the 26th had left Fort Stotsenburg at dawn for this valley.

I believe that it was on this first day of the attack that Troop "G," with scout cars attached, was sent by truck with animals to the Baler Bay and Dingalen Bay areas on the east coast. (Lt. Ramsey, sent with this troop, was later mentioned in Captain Wheeler's report of the Moron fighting (March-April, 1943 *CAVALRY JOURNAL*) so the troop must have been pulled out before the Japs reached Cabanatuan, Neuva Ecija, as that would have been its only outlet.)

Guns were loaded, helmets covered with mud, and air scouts posted. The kitchen truck was camouflaged, and the horses checked for overhead cover.

At the time, the troop was bivouacked in a rolling, foothill country. Rice paddies filled the depressions, while innumerable bamboo clumps bordered the streams, and cogon grass covered the surrounding hills.

There was not much danger from enemy ground action that first day. The most important precaution was to have fair warning of air attack—and since the higher the OP, the better the observation, a light machine gun and rifleman were sent about 500 yards west to the highest hill in the vicinity. The rifleman was to relay signals to the troop. The most serious danger was from the west. There the Zambales Mountains rose three or four miles away, and from that direction fast, low-flying planes could get in quickly. Another observation post with the same set-up was established about 100 yards to the east. Machine guns were to fire only if the troop was attacked, for it was definitely to the troop's advantage to keep its position secret.

At about 1230, the post to the west signalled "airplanes." From the north came the barely audible drone of heavy motored planes. Soon they could be seen flying in perfect formation at an altitude of 15,000 to 20,000 feet—their silver bodies glittering in the sun.

At first we hoped that the planes were ours, but as they passed overhead there was no mistaking the dark blotches on the underside of the wings. They were the first Jap planes that we had seen. There were 54 of them—twin-engined, medium bombers, flying in two formations of 27 each and heading south toward Fort Stotsenburg and Clark Field. We watched them disappear in the mist, and soon heard the heavy *umph* of bombs landing, mixed with an occasional faint rattling of machine gun fire.

A few minutes after the planes had passed over on

their way to the south, they returned—all 54 of them—in their same perfect formation. By this time, we could see dog fights in the air over Clark Field. One worked up close to us. Two planes were after a single plane. We hoped the two planes were ours, but soon the lone plane trailed smoked and glided off into the Zambales Mountains, and it was easy to see that it was one of our P-40's. Clouds of smoke were rising from the vicinity of Clark Field and Stotsenburg.

At 1500, Troop "A" started for the Bamban Valley. Although groups of two or three Jap fighter planes had been in sight most of the afternoon, because of the limited time allotted for the march it was necessary to follow the highway, which had barbed wire stretched along each side for most of the way. Between our bivouac and the Bamban Valley the country was largely rolling, broken here and there by bamboo thickets.

The troop marched on each side of the road in columns of twos in staggered formation with about 5 yards distance between horses. Platoons had about 25 yards distance. In case of air attack, where the barbed wire made it impossible to go to right or left, the only thing to do was to increase distances—using either the 2d or 3d squad as the base, depending on the cover available—then dismount and try to find a depression to lie in. When and how to increase distances and find cover were matters left to the initiative of the squad leader and his second in command. Four men of each squad were on opposite sides of the road. When it



Troop "E" picket line in a forest west of Fort Stotsenburg. Picture was made a short time before war broke.

was possible to get off the road, the platoon broke up into groups of fours when disperse order was given. On that first day, however, the troop was not bothered, and went into bivouac with the regiment about 2200. The kitchen truck waited until dark to come in.

The Bamban River Valley north of Fort Stotsenburg is a broad deep gulch possibly three miles wide with banks in places 75 to 100 feet high. The bottom is covered largely with a thick low brush, tall enough to



give good cover to horses. Through this brush runs a broad river.

The 26th Cavalry was dispersed up and down the river over an area a mile or a mile and a half in length. Troops were given different times to water the horses, and a troop never watered more than a platoon at a time. This precaution was necessary, as most of the troops had to go into the open to water and even by the second day of war enemy fighters were over us occasionally. Being in a valley made it easy for the Jap planes to surprise us. When they were over us the main thing was not to move. The kitchen trucks were hidden right with the troops. Squads at a time filled their mess kits, then went to their area to eat.

A great deal was left to the squad leaders and the second in command of squads. Dependence on them became greater each day that the war progressed. In the middle of the night and sometimes during the day it was impossible for a platoon leader to get around to check everything. The second in command of a squad had to have his men with him, ready all the time, and also had to be in contact with his squad leader. The squad leader had to have his squad under his thumb and at the same time be always in contact with the platoon sergeant.

#### IN AND NEAR FORT STOTSSENBURG

On the morning of the 9th, some of us from the troop went into the Post to get out the war gas masks and find a few odds and ends of equipment that we thought we might need. Fort Stotsenburg had been bombed and strafed, but the damage done was nothing comparable with that described at Clark Field. It was reported that two hundred men had been killed on Clark Field the previous day, besides the runway, shops, and hangars made almost useless. A good number of the planes around the field had been destroyed, yet it was reported that not a dummy plane had been attacked. Our planes had been in the air most of the morning of the 8th, and it was said that they drove off one attack on Clark Field, which forced the Japs to unload their bombs on Baguio on their way back.

By the morning of the 10th, Air Force personnel from Clark Field were coming to our mess to eat. Many had not eaten since noon of the 8th. They had no idea where their units were or where they should be.

On the afternoon of the 10th, the 26th was ordered into a position in the hills northeast of Clark Field in readiness to nip an expected paratroop landing on the field. The regiment was dispersed along the edge of the field under cover. Its mission was to ride out as the enemy was landing and break up the Jap troops before they could become organized. The operation would be supported by our machine guns already in good positions.

At this time we got a look at Clark Field. Shot and burned up planes were strewn around in many places. The runway was full of craters. Several of the build-

ings were burned, and enemy strafing had been so intense that those still standing looked like sieves. The Japs had done a thorough job.

Just before dark, the 2d Squadron marched east into an area where paratroops had been reported to have landed. The 1st Squadron combed the immediate vicinity east of Fort Stotsenburg and Clark Field, and took up an outpost position for the night on a north-south line about five miles east of Stotsenburg. It was found that the parachutists had been our own pilots jumping from crippled planes.

The morning of the 11th, we were awakened by anti-aircraft fire. In the dim light Jap bombers were passing overhead about 10,000 to 15,000 feet up, but our AA fire did not bother them. From this day on we saw very few of our planes in the air; the Japs took up most of the space. From time to time during that morning, more Jap bombers passed overhead within range of our anti-aircraft, but the fire of these guns was not effective. We went over to kid the gunners and asked them when they were going to learn to shoot. They told us that most of their gunners had gone home on the order releasing men over 28 years of age, and that recruits were doing the shooting.

That afternoon the 26th Cavalry assembled and bivouacked in a wood near Taconda hill, a mile and a half south of Stotsenburg. Just before dark three Jap fighters located the position and (after appearing to take pictures) strafed the area. Troop "A" area was well sprayed but received no casualties. As soon as it had bivouacked, the men had dug slit-trenches. Clark Field had already proved these had to be L shaped and deep enough for a man to get his head a foot under ground. Some of the Scouts had built the sides of their trenches up with the trunks of the banana trees; the pithiness of the banana tree had an amazing ability to slow up a bullet. At the time of the attack the light machine guns were in position, and at one time it was noticed that the tracers bounded off the armor of the Jap fighters.

To put out air scouts in the day time had become as standard as digging slit trenches the minute that the troop went into bivouac. I do not remember that the troop was ever surprised by planes. Besides picking good positions for air warning observation and having a good system of transmitting signals, every man in the troop was alert at all times for the sound of planes. Talking was subdued. Men even walked quietly. When walking along, they shifted their eye from one foxhole to the next or from one depression to the next. For a bomb to get a man lying in a depression it had to land nearly on him. The only protection from intense strafing lay in being dug deep in the ground. For the horses, it was found that their best protection was in having them tied in a river bed or some other depression, well covered from above and with as much dispersion as the area allotted to the troop allowed.

It was not necessary to prohibit smoking after dark,



as the men realized the danger of detection involved, and of their own volition stopped smoking at night. The white G.I. mosquito bars were dipped in coffee to keep them from looking like rocks of phosphorus when spread out.

It was the beginning of the dry season, so troops could sleep on the ground.

The morning of the 12th the 1st Squadron held officers call at the regimental headquarters building at Fort Stotsenburg. The appearance of the Post had changed considerably. Foxholes had been dug everywhere. Machine guns, with Scouts lolling beside them, were in position for antiaircraft fire. The parade ground and polo field were broken here and there with sets of trenches. At the west end of the parade ground near Post Headquarters a battery of 2.95's was in position as defense against a possible Jap paratroop landing. Hong Kong Street and the Post Exchange were both crowded with men getting little last necessities, sending radiograms, and having a last drink. Our own quarters were just as we had left them. We went up to the club to have our last beer there and felt fairly certain that it would be on the house.

Two Jap prisoners who had been shot down looked very tough with their brisk black mustaches and close cropped hair. It was rumored that a German pilot had been shot down on the 8th. There was also a story of the Negritos, the black pigmies of the Zambales Mountains, who were said to have brought in on their spear-

heads the heads of two Jap pilots shot down and had said, "Send us more."

At 1030 officers of the 1st Squadron assembled on the porch of headquarters building of the 26th. The clouds were thick that morning and not over 3000 feet high. Now and then it drizzled a little. The meeting had barely started when from the direction of Clark Field to the east there came the faint *umph* of bombs exploding. As the seconds passed, the sound of the bombs became nearer, and soon the planes themselves could be heard. Everyone got into trenches and holes in front of headquarters and watched them come from Clark Field, out of the mist and over Stotsenburg—releasing their bombs as they moved forward. They came over, then still dropping bombs, circled to the south. It was possible to look up and see the bombs in the racks, and everyone felt that each bomb was coming right into the hole where he sat. The machine guns did a lot of firing but no planes fell.

Clark Field had had another good working over. One bomb landed on an antiaircraft gun and blew the gun and crew into a thousand pieces. A bomb in back of regimental headquarters had hit a jeep squarely. The driver was about ten feet away in a hole and unhurt. The Jap planes wrecked two of the barracks, two of the stables, and the motor pool in the area of the 26th. The sick horses were grouped together in stalls in Machine Gun Stables, and one bomb got 12 of them. Word arrived that the regimental bivouac area had been bombed, so the officers hurried back.

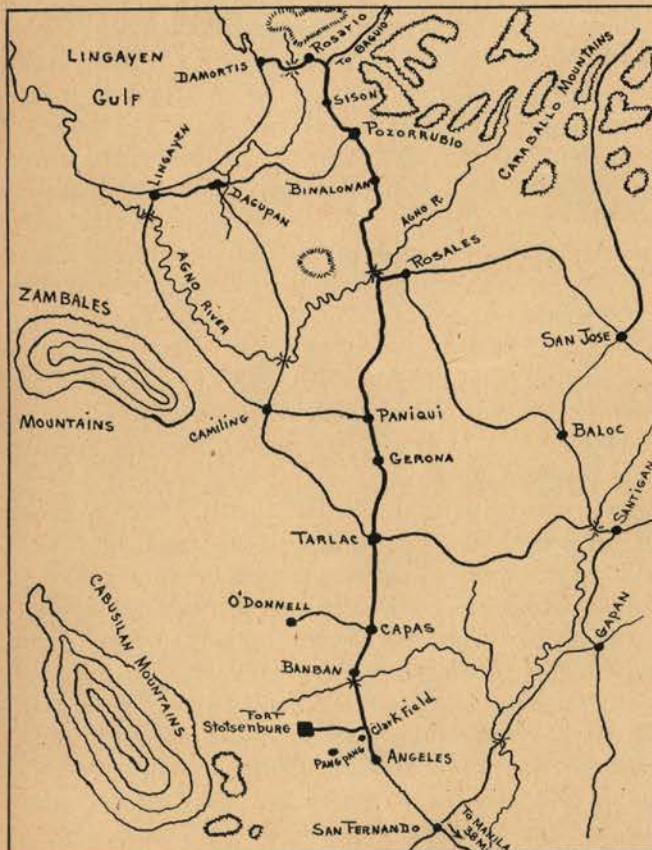
In troop "A" two horses, badly wounded from the shrapnel, had to be shot. One man was hit because he had failed to lie down.

I believe that it was on this day that a detachment of scout cars from the 26th Cavalry (under Lieutenants Cunningham and Cahoon), was sent to give some relief to a Philippine Army division fighting in the Cagayan Valley in northern Luzon.

#### THE MARCH NORTH

On the afternoon of December 12th, each troop of the regiment marched individually to a forest, midway between Fort Stotsenburg and Angeles, Pampanga. In getting to this place it was necessary to cross a considerable amount of open country. One troop, caught out in open terrain, was strafed by Jap planes but suffered no casualties, for the men were well dispersed and whenever a fighter started to dive, they galloped out of the area covered by its guns.

When Troop "A" moved across this open area, horsemen were sent ahead or to the flanks to observe from the tops of small hills, while certain other men in the troop were designated to watch the observers for aircraft signals. Where there were no hills and the ground on which the troop travelled was such that it caused the horses to make a lot of noise, two men were sent far enough in advance or to the flanks to be able to hear the approach of hostile planes. The principle precau-



March of the 26th, Stotsenburg to Lingayan; the regiment fought a desperate rearguard action back to Bataan.





U. S. Signal Corps Photo

A unit of the 26th Cavalry is shown moving into Pozzorubio, December 21, 1941. The next day it faced the Japs.

tion, if possible, was to have the men so well dispersed that if caught by surprise, the unit would not suffer unduly.

The regiment stayed in the woods between Fort Stotsenburg and Angeles, undiscovered for one or two days. Rifles and pistols were carried loaded and locked all of the time, and occasionally a man would accidentally discharge his piece. It was difficult at first to make the men conscious of the fact that their guns were always loaded.

At nightfall on the 13th or 14th the regiment marched through Angeles, Pampanga, north to the town of Bamban. There it remained for two or three days. The men gradually became accustomed to carrying their guns loaded and locked, and the problems of guns discharging accidentally practically stopped. The bombing and strafing no longer excited the men, who wanted to fire at the planes but were not allowed to for fear of giving away the position. General Wainwright's headquarters at that time was in Bamban, and I believe also that it was about then that Troop "F", having marched up from Manila, joined the regiment.

The night of December 16th, the regiment started marching to the north, and made camp north of Capas during the day of the 17th. That night the march north was again resumed and the town of Gerona was reached before daylight of the 18th. All day the troops lay in a coconut grove west of the town and, after starting north again at dark, arrived in Rosales, Pangasinan about 0300 the morning of the 19th (another 25 miles) and remained there for two days.

Jap planes were always present. No American planes had been seen for several days. Although security had always been posted night and day, both while marching and in bivouac, it was now strengthened, because reports were coming from the north that the Japs were

pushing from Appari and Vegan—where they had made landings a week before.

There was no difficulty about supply; everything came from Fort Stotsenburg. The trucks did all of their moving at night. Hay and grain were dumped off the regimental supply trucks at the nearest place on the road to the troop area, and from that point were hauled by hand to the animals. The mess sergeant picked up the troop's food at the same place and transferred it to the kitchen truck. The horses were in fine shape, and at every stop the horseshoer was busy.

About that time General Wainwright moved his headquarters up to Sto. Tomas near Rosales.

At noon of the 21st at Rosales orders came to be ready to move out in half an hour with lunches and grain bags full. Few men got their noon meal that day, as the kitchen could not get lunches out on such short order. It had been a practice, however, to keep the grain bags always full. In half an hour troops were ready to move. Troop "C" was dismounted and sent north of Baguio by truck, and their animals were turned over to Troops "A" and "B" to be led. From Rosales the regiment marched west, then north along the Baguio highway until dark, and after covering about 20 miles, bivouacked in a coconut grove in the area of Pozzorubio, Pangasinan.

That night the horses had to be watered by bucket from a deep well. This took about two hours for "A" and "B" Troops using the same well. Troop "A" always carried one collapsable bucket per squad, and two, if they were available; also a trench shovel, and a lariat. This scheme proved very valuable many times.

The kitchen trucks did not get up until after midnight, but there were shovels to dig foxholes, and the horses had grain and enough grass to keep them going. The men, however, had nothing to eat. There had not



been time to put up lunches, and it was impracticable to keep sandwich lunches on hand, as they would have gone stale. There was plenty of room in the saddle bags for a box ration had any been available. The emergency was not sufficient to open the canned rations. Pack animals with rations would have been invaluable.

Saddle-up came long before dawn of the 22d and before the kitchen truck was ready with breakfast. Troop "C" horses were left in the bivouac. The day was cloudy—ideal for marching and also for retarding the activity of hostile planes.

At dawn the regiment was marching north through rolling country toward Sison, Pangasinan. It moved in the same strung-out formation along a paved road with barbed wire on both sides. A little after daylight a plane came flying low toward us down the column. The signal for air attack (waving the hat) came just ahead of the plane—so everybody was alert. By this time the troops had a good idea of what it would be like to be surprised by enemy strafers. The horses were quickly gotten into a ditch along the side of the road and the men hit the ground. The plane proved to be a friendly P-40 on reconnaissance, but the dash for the ditch had been good practice.

At about 0900 the troops reached the junction of the highway where the Kennon Road goes to Baguio and Highway 3 turns to Rosario, La Union. The sky was starting to clear. Jap planes were scouting overhead in all directions but had not attacked. The regiment halted and got off the road to rest, while a company of light tanks went on ahead. During the rest period, civilians opened coconuts and gave them to the troops. The march west toward Rosario was then resumed.

Far to the front, planes could be seen diving out of sight then coming up again, but nothing could be heard. At about 1100 the tail of the regiment came into Rosario, where the company of light tanks had also stopped. About a half hour later the regiment, with some of the tanks in the lead, headed for Damortis.

The order of march in the regiment changed to 1st Squadron, 2d Squadron. Regimental Headquarters had gone forward with the tanks. The 1st Squadron had a platoon of heavy machine guns attached and marched in the order Troop "B"—Machine Gun Platoon—Troop "A". The troops were still marching on a paved road with barbed wire on each side.

Just out of Rosario, the Japs started dive bombing and strafing all along the column, with the heaviest at the front. Platoon commanders were instructed to use their judgement as to when to disperse for air attack, but to keep closed up on the unit in front. Whenever planes were seen coming, as much distance as possible was taken between horses, and an effort was made to get the horses into the usual ditch beside the road. When planes got close, the scout car stopped and the crew fired on them with their .50 caliber machine guns, which at least kept the Japs higher in the air. One bomb that I judged to be a 50 pounder, landed within about

50 feet of some troopers, but because it drove deep into the ground the fragments flew at a high angle and inflicted no casualties. In strafing, the Jap guns had little dispersion and caused only slight damage or delay to the column. As soon as the planes had passed over, the troops mounted up and rode on.

Here and there along the road were bomb craters. In some places, telephone wires were down, but only twice did the column pass dead men or horses. Once, where a bomb had landed right in the middle of a cut in the road, there lay a man and two dead horses; and another time, a wounded soldier was sitting beside the road, his dead horse nearby.

Later, while assembling after having made a quick dash off the road to get away from a strafing attack, I noticed that my platoon sergeant was missing. Looking over, I saw him dismounted trying to get his horse out of a carabao wallow. The horse was up to his belly in it and could not move. I rode over with the idea of trying to find a way of getting the horse out, and suddenly realized that there was something more important to do, so got another horse for the sergeant, and the march was resumed.

About 1230 we came to a ridge from which Lingayan Gulf could be seen in the distance. The water was full of Jap ships and the scene brought a full realization of the urgent reason for the forced march from Rosario. There was no time for more than a fleeting glance at this scene, for a message from Regimental Headquarters ordered the troop to move forward at once and in a hurry.

Marching in the order 1st Platoon, 2d Platoon and Light Machine Gun Platoon, the troop moved along the road at the trot. The 2d and Light Machine Gun Platoons were driven off the road several times by heavy dive bombing and consequently lost distance, but the troop commander and 1st Platoon were able to continue forward without this interruption.

#### BATTLE IN THE LINGAYAN HILLS

At about 1300 the 2d Platoon and Light Machine Gun Platoon arrived at the forward regimental CP, which consisted of a scout car with radio. A few staff officers were standing nearby. The squadron adjutant told me to join the troop commander who was in a valley beyond the next hill to the north. We moved over the hill and down into the valley and located the troop commander on a ridge three or four hundred yards to the northwest. As soon as he saw us, he signalled for the platoons to fight on foot. The 1st Platoon had left its horses mobile, with one man to four horses; so the newly arrived platoons did likewise.

In the bottom of the valley, where the troop dismounted, there was a rice paddy which had been recently harvested, and it was now a hard broken field covered with rice stubble. A stream bed running down the center of the field had a growth of cogon grass in it 10 feet high, and as many horses as possible were



hidden there. The rest were put under cover here and there, where clumps of small trees could be found.

The two platoons assembled in column of trooper and moved up under cover behind the brow of the hill where the troop commander was waiting. A few of the men had taken their canteens off their saddles and hooked them to their belts by use of the chain that attaches the cover. Those of us who did not do this, sorely regretted it. All of us were tired, hungry and especially hot, and few realized what was really happening. Planes were still at work but not on the troop at that moment.

The 1st Platoon was already in position on the hill. The Light Machine Gun Platoon was ordered into position with them. The 2d Platoon was ordered to send one squad of riflemen mounted to the high ground to the east to cover any hostile movement attempting to get in our flank and rear. The other squad of the 2d Platoon was sent dismounted to occupy a ridge just east of the right flank of the 1st Platoon position. Two heavy machine guns attached to the troop also occupied this ridge. I was placed in command of this section and given instructions to keep in contact with the mounted patrol on our right flank to the east.

The troop commander's CP was on the ridge occupied by the 1st Platoon and overlooking Lingayan Gulf and the vicinity of Damortis. This ridge, which ran north and south parallel to the shore of the gulf, was  $\frac{1}{2}$  to  $\frac{3}{4}$  of a mile long, forming a cut for the highway on the west, and petering out into a gully on the north. A short distance from the northern end of the main ridge, a narrower ridge of about the same elevation ran perpendicular to it. This furnished a fair field of fire for 1000 yards to the north toward another group of hills.

The shore of the gulf was about  $1\frac{1}{2}$  miles away. From the shore in, for about  $\frac{3}{4}$  of a mile, the land was level. From this plain to the 1st Platoon's position, there was a gradual rolling rise made up of billowing hills covered with cogon grass. Lingayan Gulf seemed choked with Jap warships and transports. There was a heavy haze in the air, and the sun was already low enough in the west to make seeing in that direction very difficult. We watched the Jap landing barges bringing men and supplies ashore, but could do nothing to stop them.

On the Rosario-Damortis highway to the south of our position, there was a company of American tanks. Farther back on the road to the rear of the tanks were two or three scout cars that from the first were using their .50 caliber machine guns for antiaircraft fire. The Jap dive-bombers were busy trying to get something on the road—either the tanks, the regimental CP, or the scout cars. Somewhere on our left was Troop "B", but I was never able to locate it.

After checking my position, I started over to the right flank of the ridge occupied by the 1st Platoon to have a better look at the ground. Just before I reached the position of the light machine guns, I heard a high

pitched cracking sound over me and stopped to look up in the air but saw nothing. The sound was repeated and at first it was hard to figure what it was. Soon I saw one of our light machine guns moving back toward me with the men carrying it crouching low. Then it dawned on me that the cracking sound was the same as that heard in the rifle pits. It was the Jap machine guns firing on our gun position, and they had gotten so close that our gun crew had been forced to move into another position.

Two or three hundred yards beyond, on a hill to the north of the 1st Platoon's right flank, helmets and sometimes the heads and shoulders of Japs could be seen moving behind the crest. The men of the light machine gun crew were on their stomachs helping each other guess where the next figure would pop up on the ridge to their front.

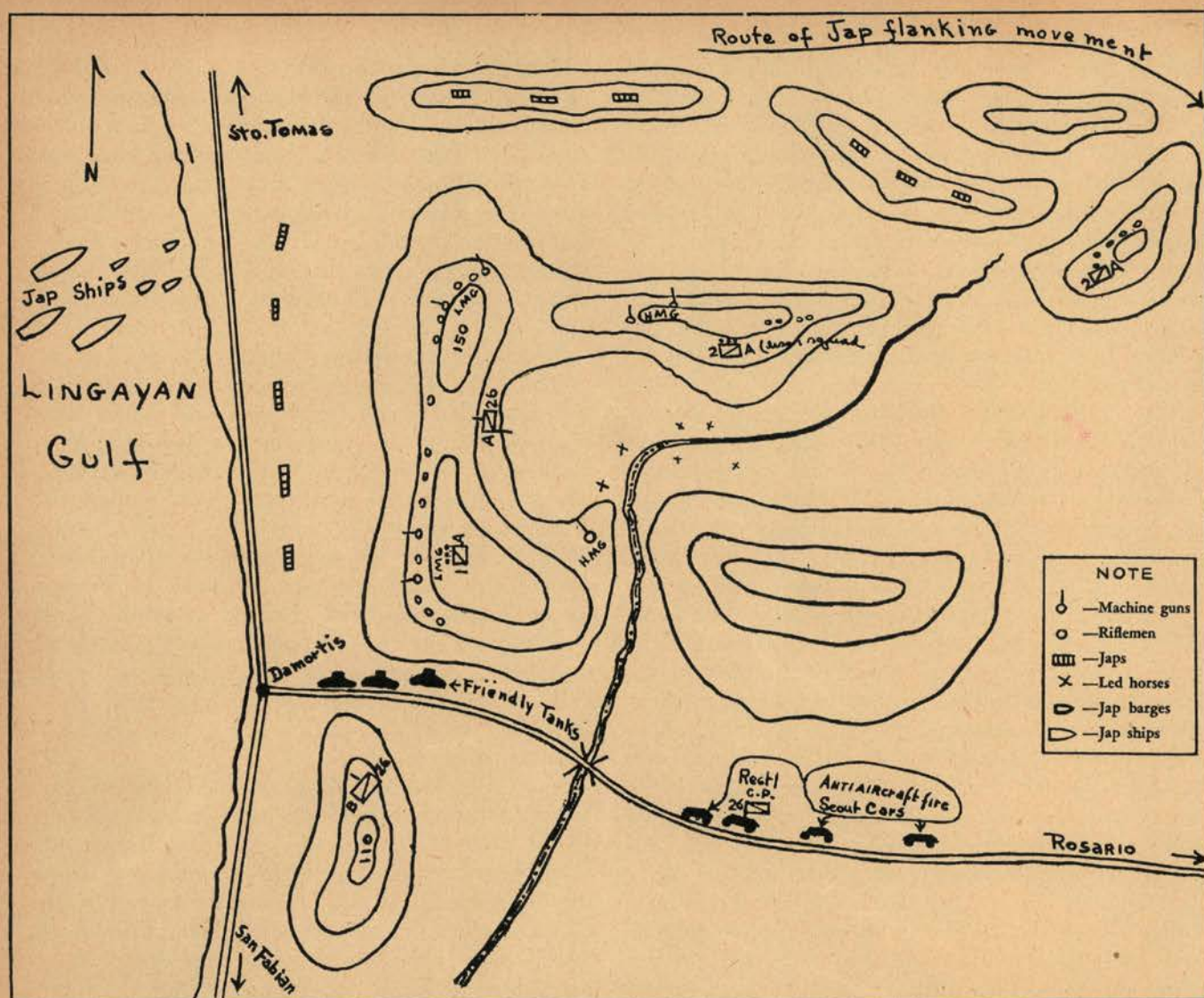
Returning to the position assigned to me, I found that the men there had also been confused at first by the cracking sound overhead. The air was full of bullets now. Objects on the ridge north of my position were our targets. The firing on the right flank started about 1400. The center of the ridge occupied by the 1st Platoon came under fire from what we presumed to be 75mm from the valley.

Slowly Jap artillery fire covered the whole position. Then Jap tanks, firing their small cannon, began to appear. Moving in column of squads Jap infantry moved up with the tanks and soon had machine guns covering the 1st Platoon's position. I believe that they received a little mortar fire too. A short time later Japs, who had worked around and gotten into a position with rifles and machine guns, began firing directly from the ridge to the north. From time to time squads of Japs in columns of troopers came over the ridge nearly a thousand yards in front of our heavy machine guns and scrambled down into the gully where they were protected. The heavies took good toll of these, but the Japs kept coming. Those approaching our main position facing Lingayan Gulf stopped when about half a mile away.

Watching the firing of the heavy machine guns was engrossing. The first man to see a target would try to show it to the gunner. If the gunner was unable to find it, the man who saw it would aim the gun, then the gunner would do the firing. Realizing that there was something else to do other than watch two guns, I crawled back to where the squad of riflemen had been put in position and found them behind the crest of the hill lying prone doing nothing. The corporal told me that he did not know where he was to get into position. After the men had been put into a firing position in front of where they had been lying they started firing and stayed there without any trouble throughout the rest of the action.

Far to our right and rear, artillery could be heard now and then. I believe that this was about 1530. The squad of mounted men (2d Platoon) had been sent to that locality but up to now no word had been received from





them. For the first time I needed my messenger but looking around I found that it was impossible to locate him anywhere. Finally it was necessary to take one of the riflemen out of the line and send him to contact this squad.

In spite of the heavy toll taken by the machine guns, several squads of Japs had managed to get over the ridge and down into the gully about 700 yards in front of our position, at which point they completely disappeared from view.

I crawled down to the troop commander's CP to inform him of what was going on in my area but was unable to locate him. The infantry had stopped advancing on the position facing Lingayan Gulf. There the light machine guns and riflemen had a field of fire over the short cogan grass for two to three hundred yards, but Jap artillery fire now covered the whole of the troop's position. Their tanks made no effort to advance.

Jap planes were overhead most of the time, but as far as I know, our troop received no casualties from them. The .50 caliber machine guns on the scout cars had been firing nearly incessantly since 1300.

Returning to my area, I found one of the heavy machine gunners firing on the planes. The gunner had

been told specifically that the machine guns would not be used for antiaircraft fire, as we were short on ammunition. It was necessary to pull this man away from the gun, set the gun to cover its ground area, then shove him in back of the gun. Still he kept looking up at the planes.

Crawling back to the rifle squad, I verified that they were still in position firing. Then returning to the machine guns, I found that the one gun was firing anti-aircraft again. It was not that the gunner was deliberately disobeying. I believe that the idea of those planes always overhead had preyed on his mind to the extent that he could not think of anything else. From time to time he would point at the streams of smoke that our .50 caliber tracers were making and say that the Japs were dropping gas. I then put the assistant gunner to firing.

In contrast to the gunner mentioned above there is a story of another gunner. On one of our light machine guns, the gunner and assistant gunner were cousins. The gunner in the course of the afternoon was hit in the chest. He fell away from the gun and rolled down the hill a little ways. The assistant gunner, calmly, without giving his cousin a look or a thought, immedi-



ately got into position behind the gun and continued firing.

About 1600, squads of Japs were noticed 1½ miles to our right rear working toward our rear. They could be seen for just a few seconds at a time as they passed in squad columns over a piece of high ground. For how long this had been going on, we did not know. The troop had no reserve. The squadron commander came up, looked the situation over, and ordered us to pull out and move to another position.

The horses were in the valley to our rear. South of the valley there was more high ground which overlooked our position. The two heavy machine guns and rifle squad were ordered to this hill to cover the withdrawal of the rest of the troop.

One heavy machine gun was withdrawn immediately from action, and the route to and exact locality of the next gun position was carefully explained to the gun crew. The new position could be seen plainly. The gun and crew were then sent back to occupy the new position. The corporal of the rifle squad was instructed to stay in his present position for 10 minutes after the second machine gun pulled out, and then to withdraw his squad and rejoin the machine guns at a point carefully pointed out to him. The next position was not more than a quarter of a mile away.

After the first gun had had ample time to get in position, yet still could not be seen, I started back with the second gun. In a few minutes the second gun was in its position, but the first gun and its crew could not be located. I later learned that on seeing the troop pulling out of the position in front, the crew had taken it on themselves to pack the gun and to take it to the place where the troop was assembling. The rifle squad also never got to its second position. Later the corporal said that he had believed it was necessary to get the horses out then, or they would have been lost.

The one heavy machine gun left to fire, had too much to do because it had an area of over 90° from northwest to northeast to cover. After each burst was fired it was necessary to traverse 90° to fire on some enemy movement in another direction. During the hour that it took to get the troop out of action, checked over, and back on the road mounted, the heavy machine gun kept up an incessant fire.

Toward the last of the withdrawal, the Japs had worked up into positions overlooking our movement and had a good amount of small arms fire on us, but it was mostly ineffective—either because they could not shoot or because the machine gun was keeping them down. In some manner, the pack horse and mounts of the machine gun and crew in the second position had disappeared. The gun was finally withdrawn and carried to a scout car waiting on the road. At the last, the Japs apparently knew that we were withdrawing, and they began pushing forward with increased determination.

Troop "A" marched about three miles back to a river

to water the horses, which had all been fed during the action. The Jap planes had stopped their dive-bombing and strafing, but scouting planes were still overhead most of the time. A company of light tanks was still between Troop "A" and the enemy.

After watering, the troop marched a half mile back toward the enemy and dispersed in cover along the road. Half of Troop "A" was missing, and most of its ammunition was gone. The platoon sergeant who had been sent with the squad to protect our right flank was the only one of the squad who had returned; his face was caked with blood from a shell wound. The squad had met a large force of Japs sent around on an enveloping movement, and although it had held the Japs up for some time, it was finally wiped out by fire from mortar and mountain artillery. (No one from that squad was ever sent to notify the troop commander that contact had been made. I never heard what happened to the man sent to contact the squad nor did I ever find out where my messenger went.)

About 1750 the troop was ordered into a position 1½-2 miles to the rear of our first position of the afternoon. At the time Troop "E" was astride the road, and Troop "A" was off the road to the right of Troop "E". Just after dark the company of tanks withdrew through us and passed on to the rear. About 1930 Troop "A" pulled out and in columns of twos dismounted formed on the road facing east. Beyond Troop "A" was Machine Gun Troop mounted, and we were told that beyond the Machine Gun Troop was Troop "E" forming the rear guard for the withdrawal. The heaviest weapon that they had was a light machine gun, and there had been no time to build any kind of road blocks. (If the troops had had something like the bazooka, the action that followed possibly never would have happened!)

At about 2000 Troop "A" was still waiting for the order to mount and withdraw to its new position when all hell broke loose suddenly. Small cannon, machine gun, and rifle fire came over and into us. Machine Gun Troop, already mounted, stampeded through us, which caused several Troop "A" men to lose their horses. Those who still had mounts, had trouble getting the reins over their heads and then in mounting. As the firing became stronger, the horses got crazier. Jap tanks followed by infantry had come right through our rear guard. The rear guard had had nothing heavy enough to stop them.

In mounting, my horse bolted—dragging me for some distance and knocking me out. Later, when I came to, the firing had stopped, forms could be seen moving down the road from the direction of the enemy, and there were no cavalrymen around. I jumped a fence and got into a bamboo thicket by the side of the road.

\* \* \*

*A further account of Major Whitehead's experiences in the Philippines will appear in the July-August issue of THE CAVALRY JOURNAL.*



# ABC's of Jungle



"Dig in whenever halted and improve holes as time permits." This machine-gun emplacement on Guadalcanal offers concealment as well as necessary protection.

Official U. S. Marine Corps Photo

SINCE the early days of the war with Japan, a great deal has been learned about the Jap soldier—his characteristics, weapons, and tactics; also about tropics and jungles in which much of the war is being fought.

The Jap is a master of camouflage. He is meticulous in his task, whether it be concealing a supply dump from planes or emplacing a machine gun along a narrow jungle trail. Obeying orders blindly, he will stick to his post until death. But while he is supposed to excel in judo and bayonet work, his inferior physique handicaps him in hand-to-hand combat with the American. He is a poor shot, compared with the American soldier, and at ranges of more than 100 yards the Jap sniper misses more often than he hits.

The American soldier is now provided with the world's best weapons and equipment, but to a great extent, jungle fighting is a test of individual skill. Before the American soldier goes into action, before he even sets foot in the jungle battle zone, he must receive intensive training in jungle warfare. It is only with this careful training and constant study, that he can take full measure of the Jap.

The following basic but vital rules, which were evolved from combat experience with the Japs in the South Pacific, should be learned so thoroughly as to become an instinctive and integral part of every soldier who is training for the jungle.

## RULES FOR THE INDIVIDUAL SOLDIER

### *Your Enemy and You.*

Do not underestimate the enemy, but also do not overestimate him. The Japs are not supermen, but they are fanatics. Remember, this war with the Japanese is a war of *kill or get killed*. You are a better man, better armed and a superior marksman.

### *Teamwork.*

There are no wet-nurses in action. Learn the difference between a hero and a fool; the former has common sense as well as courage. Do not try to win the war single-handed. Use teamwork, live, and be successful.

### *Lights and Smoking.*

No lights of any kind will be used in forward positions during hours of darkness, and *No Smoking* unless specifically authorized by higher headquarters.

### *Talk.*

Silence is essential at the front and on patrol. If the enemy cannot locate you, every advantage is with you. He will try every means to get you to disclose your position so that he can gain advantage over you.

Talk only in as low a tone as possible. Practice whispering, especially in telephone conversations. Use signals, such as hand or arm signals, tapping on the rifle, bird calls, etc., as much as possible. Do not expose



# Combat

## Basic but vital rules evolved from combat experience with the Japs

yourself any more than necessary when using hand or arm signals.

Do not forget that many Japanese speak English. At night a favorite trick is for them to infiltrate and yell false orders, such as, "Withdraw," or "Sergeant, where are you?" Learn to know the voice of your leader. Japanese have difficulty in pronouncing the letter "I."

### Firearms

Weapons will be carried at all times when in forward areas and when away from immediate vicinity of bivouac, camps, or secured areas. *Weapons will always be kept readily available.* Don't shoot unless you have something worthwhile to shoot at. Blind shooting simply gives away your location.

### Enemy Fire.

Under artillery, mortar, grenade or bomb bursts, keep dispersed and hold your ground. Running from one burst and collecting in groups only invites disaster. Two shells in the same hole are so rare that the safest thing to do is to move forward or else take shelter temporarily in a shell hole. Running from fire will not save you and will have a demoralizing effect on other troops not involved. It gives a boost to the enemy's morale to see you run.

Japanese light mortar fire is accurate; therefore, grouping of personnel must be strictly avoided, and individuals will not allow themselves to be silhouetted on the skyline.

### Caution.

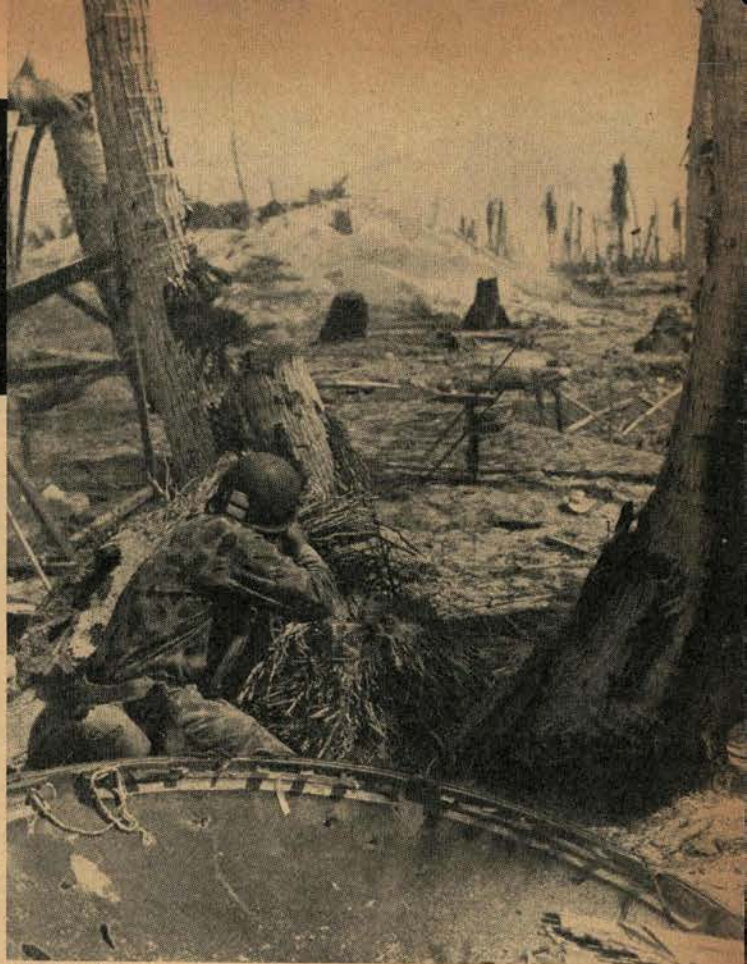
Do not use field glasses openly; observe the same principles as in firing the rifle from concealment.

Do not permit straggling, and do not straggle yourself.

Dig in whenever halted and improve holes as time permits. An entrenching tool is next in value to a soldier's personal arms and must be carried at all times.

### Sniping.

When fired on by snipers move at top speed to nearest cover or concealment. As soon as possible quietly change your location, then locate and destroy the sniper. Do not, under any circumstances, stand still in the open. Do not forget to look up before you move. Get into the habit of watching tops of trees as well as their roots.



Official U. S. Marine Corps Photo

"Remember, this war with the Japanese is a war of *kill or get killed*. You are a better man, better armed, and a superior marksman." From behind a blasted tree, this marine picks off the Japs in a pillbox on Tarawa. The target is the small opening through which the Japs take sight.

### Enemy Tricks.

Be on guard for all types of booby traps and enemy ruses.

Do not attempt to retrieve enemy wounded (be a trick).

Look out for false surrender; any offer must be suspected as an enemy ruse.

### First Aid.

Use your first aid packet. Scrape as soon as possible. If wounded, use tablets as directed on the m.

### Rumors.

Rumors are a curse, do not believe them. All rumors are false except the ones that tell you to fight them, and wait for victory.

### The Officer.

It is imperative that the officer be a cheerful and confident leader by word or action. He must be free of fatigue. Every man must have a positive offensive attitude.

### Small Unit Leadership

Each platoon





Life Photo by Shrout

"Do not attempt to retrieve enemy wounded. It may be a trick." The Jap in the above picture appears to be dead. If he is, the body may hide a booby trap. Take no chances.

take every opportunity to instruct, talk over, discuss and re-discuss with his men, Japanese tactics, our methods of operating against them, and work out in detail the methods his unit will employ to get teamwork into their day and night operations against the enemy. It is essential that officers and men know and understand each other thoroughly.

#### SECURITY

##### All Around Defense.

Movement formations will be adapted to the terrain, but must always provide *all around security* by forward and flank, advance and rear guards with communications. During a halt, whether for rest, observation, bivouac, men will be kept dispersed and sentinels and adequate security guards. Remember you are always under observation by machine gun or mortar fire if you

is imperative and must be maintained at all times. Without all around security, and the first job.

Alert, while the other movements during best to have indi-

sions, however

Patrols will

Patrol, usually

- (2) Combat or reconnaissance in force: never less than a reinforced platoon, preferably larger.

#### Inspection.

Each patrol will be inspected carefully, and clearcut instructions will be issued to cover mission, objective, route or routes, adjoining patrols, formations, precautions, password, and signals. Helmets and web equipment will be camouflaged; canteen and other shining equipment will be covered. All equipment must be adjusted so that it does not rattle or shine. Other headgear may be substituted for the steel helmet *only* on orders from the regimental or separate unit commander.

#### Rest Periods.

Before the patrol moves out the leader will establish a definite rest period during the time of the march, so that whenever there is a halt the men will know how much time they have to rest.

#### Maps.

Patrols will be provided with maps or sketches devoid of any military information. New trails and information of similar military value should be recorded on the spot and reports made immediately upon return to bivouac, and copies sent to division headquarters.

#### Equipment.

Patrols will travel as lightly as possible, only the barest essentials being carried. (See par. 8 a., Individual Equipment, as a guide which can be modified according to requirements.)

#### Movement.

When a patrol is on the move and obstacles slow up the pace, the leading element, with front and flanks covered, must clear the obstacles promptly, then slow down in order for the rear element likewise to clear the obstacles. After the rear element is cleared the normal pace is then resumed.

Do not attempt to move too early or too rapidly. Make a *thorough* reconnaissance. Remember that false negative information is the most dangerous type. Commanders must estimate the time-factor and limit the extent of the patrol accordingly.

#### Caution.

Needless talk must be strictly eliminated. Make as little noise in traversing wooded areas as possible.

Never permit a patrol to bunch up.

Never halt in the open—select a concealed spot which affords cover and protection—except where such opening affords night security.

#### SPECIAL RULES FOR NIGHT OPERATIONS

##### Hostile Attack.

Assign definite fields of fire to front line units for use in event of a coordinated night attack.

Night movement within the perimeter of defense must be held to the absolute minimum necessary to take care of casualties, etc. No movement will be permitted during a hostile attack.



*Hearing.*

For identification use the prescribed password. When challenging or replying to a challenge, *speak quietly*. Remember, the enemy also has ears.

Warn all personnel about the natural jungle noises, such as falling leaves, and the numerous birds calling at night.

*Seeing.*

Cover luminous watches or other objects that will shine at night.

Use flares at night to expose enemy movements and positions.

Tracer ammunition will not be used at night except in antiaircraft firing or for prearranged signalling.

*Lost.*

Individuals, or units, that are lost when night falls should select a covered position and, after establishing a perimeter of defense, remain for the night.

## ATTACK

*Bivouac.*

Troops designated for attack should be bivouacked for the night as near the line of departure as possible in order to insure maximum rest prior to the assault.

*Battalion CP.*

Each battalion headquarters, and regimental headquarters will have at the forward echelon only those members of the staff and headquarters company essential to combat functioning. One practical working arrangement is to have only the following personnel at the forward CP: CO, Bn-X, Bn-2, Bn-3, forward echelon of message center and intelligence section, five linemen, and such radio operators as condition of radio communications warrants.

*Weapons.*

Each machine gun or mortar platoon may be cut from

six to four guns during attack in order to allow more men for use as ammunition carriers. If necessary the heavy weapons company should carry only four 81mm mortars and permit the extra men to carry ammunition.

*Thorough consideration must be given to the possibilities of employing all supporting weapons and services available.* Experience has shown that the Japanese machine gun and other weapons are so well emplaced that close heavy weapon support is necessary whenever the terrain permits.

*Advance.*

In attack through the jungle, advance slowly but surely. Do not rush in, then stop or fall back. *Once forward movement has begun, every effort must be made to continue that movement however slow it may be.*

Whenever you have located the approximate position of the enemy, flush him from his foxholes and have action for his elimination prepared.

## BATTLE SUPPLY AND ADMINISTRATION

*The Communications and Supply Line.*

Each unit is responsible for its own line of communication and supply, and should advance only so far as it can secure its line of communication. Exception may be made when the seizing of the objective will uncover a new line of communication, or when relieved of responsibility by higher headquarters.

*Difficulties of Supply.*

The difficulty of supply in jungle operations requires special consideration prior to any offensive action. *The decision as to the routes of attack may have to be based on the supply route possibilities.*

*Trails.*

Push forward vehicular trails for carrying supplies as

Official U. S. Marine Corps Photo

"Once forward movement has begun, every effort must be made to continue that movement, however slow it may be." Marines in the picture leave the beachhead on Tarawa to storm the airport.





far as possible. A bulldozer will greatly facilitate rapid trail construction. Infantry protection *must* be furnished for all bulldozer crews working in the forward combat areas. Native carriers will be used to the maximum extent available. Even so, experience indicates that about one-fifth of the fighting force of each battalion may have to be employed as carrying parties to maintain the supply of ammunition, food, and water, and to handle the evacuation of casualties. This number should be kept at the minimum, and as soon as carrying parties are no longer needed they must be returned to the front.

#### *Travel Light.*

*All excess personnel and organizational equipment not absolutely necessary for combat must be left in the rear battalion assembly area to help prevent fatiguing the troops and to increase their mobility.*

#### *Engineer Support.*

Engineers, and all other units, will improvise cable lines, blocks and tackles and other gear for hauling supplies and casualties up and down hills, cliffs, etc. They must be ready before you go into combat.

The battalion S-4 must always be alert to locate and establish water points at streams, springs, etc. in the forward areas and provide sterilization and thereby save on long water hauls.

#### *Administration.*

The battalion executive officer will normally remain at the CP and advance it to predetermined localities as the attack progresses. It is most important that the executive officer closely supervise the "administrative" support given the attack. He must constantly check both supply and evacuation.

### SIGNAL COMMUNICATION

#### *Wire Communication.*

Maximum use will be made of wire communication, especially sound power telephones, in preference to radio. Telegraph will be employed whenever operators and equipment are available. In damp jungle country a ground return circuit is often more efficient than a metallic circuit using assault wire. Captured Jap wire can be used to supplement the supply of assault wire using ground return.

#### *Laying and Repairing Lines.*

Lines will be repaired in daylight only, except in emergency. In laying lines, install one by the fastest route, then a second on the return trip by a different route, raised high enough to be clear of traffic. Wire will be recovered after need for lines has passed. Wire crews in exposed forward areas will be protected by guards while at work.

#### *Testing and Supply.*

Testing of signal equipment, and checking for completeness of accessories must be made daily and especially prior to departure of any parties depending on such equipment.

Spare dry batteries and adequate supplies of field telephone wire should be moved up to forward areas.

#### *Air-Ground Communication.*

Be familiar with visual and sound signals given in SOI for identification and challenge between unidentified ground units and airplanes.

To mark targets for supporting aircraft, use mortar smoke shells and arrows composed of panels as shown in SOI.

### INDIVIDUAL EQUIPMENT

Individual equipment carried into combat in attack situations will include only absolutely essential items. Excess items hasten fatigue and lessen the mobility and fighting efficiency of attacking troops. Individual equipment will include:

#### *Equipment.*

Individual weapon.

Ammunition. (Extra bandoleers will not be carried by combat troops except for assault echelons during initial landings on hostile shores.)

Cleaning gear for weapons carried in oil and thong cases, BAR spare parts kit, or extra first aid pouch.

First aid packet. Entrenching tool.

Two canteens and canteen cup. Steel helmet.

Gloves. Head net.

#### *Combat Pack.*

Shelter half. Pair of socks.

Mess kit cover and spoon. Toothbrush and paste.

Shaving equipment. Toilet paper.

Dry rations (sufficient for 1 or 2 days or as ordered).

"Always send at least two men on missions, however simple the task may be." Here, two soldiers watch the grass for any sign of movement. One soldier is behind tree.

*Life Photo by Strock*





Cake of soap.

Jungle medical kit (per each four men).

#### *Extra Pack.*

An extra shelter half will be issued to all troops for the purpose of preparing a pack containing the following:

1 Suit HBT. 2 Pair socks. 1 Suit underwear.

1 Pair shoes (Shoes will be placed inside of pack to be kept dry.)

1 Mess kit less cover. 1 Each knife and fork.

#### *Transport.*

These packs will be stored in battalion rear areas. In landing on hostile shores assault echelons will drop packs prior to debarkation; the support echelon will drop packs ashore. Jungle hammocks will be carried as company or battery baggage and will be held in bat-



Life Photo by Strock

"Do not forget to look up before you move. Get into the habit of watching tops of trees as well as their roots." A soldier looks for signs of movement in a near-by tree.

talion or regimental rear areas until such time as they can be used.

#### *Care.*

Care of equipment will be enforced strictly. Do not let men get separated from their equipment. Unit leaders must require daily care of equipment.

Darken any equipment to make it blend with tropical green, and dull items that might glisten or reflect light. Cover the canteen with a sock or cloth.

Units must never leave equipment and supplies unguarded, even in rear areas.

#### SANITATION

Since disease is ever likely, it is imperative that every



Life Photo by Shrout

"Use your first-aid packet. . . . If wounded, take your sulfanilimide tablets as directed on the metal package." Here, first aid is being administered to a wounded buddy.

individual comply with the strict rules of sanitation.

#### *Refuse.*

Straddle trenches will be prepared whenever practicable. When not practicable, individuals will dig a small hole and cover defecation.

Foxholes and other positions will be kept free of refuse.

All food cans and left-over food will be buried.

#### *Cleanliness.*

Troops will be given every possible opportunity to bathe.

Bedding will be sunned and aired whenever possible.

#### *Clothing.*

Head nets will be worn at night unless the tactical situation prevents it. Clothing will be worn to cover the body and limbs between dusk and dawn. Gloves should be worn when appropriate.

#### *Feet.*

Special attention will be given to care of the feet to prevent blisters and "athletes' foot." Treat blisters and sores at first opportunity.

#### *Mess Kits.*

Diarrhea and dysentery can often be caused by dirty mess kits. Mess equipment will be washed and cleansed thoroughly in boiling water before each meal. Two men per platoon should be detailed to wash all mess kits. In some situations mess equipment may be taken to the rear with the mess detail, boiled, and returned with the next meal.

These rules are merely the beginning—the ABC's of jungle combat—but their conscientious application will save lives and shorten the war.



# 1st Cavalry Division Drive



Troops of the 1st Cavalry Division wait off shore while Navy guns pour shells on Los Negros and planes drop explosives in the preinvasion softening.

Acme



As the first landing boats hit shore the jungle. Jap hut at left was damaged.



The landing on Los Negros successfully completed, cavalrymen dig foxholes and gun positions beside the wrecked supply dumps of the conquered Japs.

Acme



These troops are bivouacked in the trees were smashed and broken during the battle.



# es Japs from Admiralties



Acme

valrymen tumble out and head for  
ring the heavy naval bombardment.



Acme

Additional waves follow in quick succession. Japs attempted little resistance  
at shore, dug in to protect Momote airfield, which fell after severe fighting.



Acme

ains of a coconut plantation. The  
terrific air and sea bombardment.



Press Association

Lt. Gen. Walter Kreuger (left), Sixth Army; Maj. Gen. Innis P. Swift (right),  
1st Cav. Div.; and Brig. Gen. Wm. Chase (center) were directly responsible.



# Offensive Operations of

SOVIET cavalry, in coöperation with other arms of the service, has given a good account itself in the course of the Red Army's offensive operations. Cavalry showed itself capable of carrying out battle missions of all types. In this respect, the recent encirclement and liquidation of large German forces in the area of Korsun-Shevchenkovsky was particularly revealing.

In that operation, cavalry was primarily used for deep thrusts. The principle that it followed was to engage the enemy for as far as possible inside his dispositions. Whenever tanks and infantry got stuck because of snow storms and road conditions, mounted troops went into action.

In the battle for Korsun-Shevchenkovsky, outstanding maneuvering skill was shown by cavalry formation guards. The units executed several deep thrusts of from thirty to seventy kilometers each. For the sake of speed, the troopers rode not only at night but during the day as well.

## MANEUVER

The first movement of Soviet cavalry, from the villages Ositnyazhka and Tishkovka to the villages Topilno

and Zelenaya-Dubrava, deserves special attention. One division, which, according to the original plan was to reach the last named points, was unexpectedly confronted by an enemy force pushing southward, and was obliged, therefore, to meet German troops attacking from outside the ring in an effort to relieve the encircled group. Another Soviet cavalry division that was following the first one overtook it and completed the encircling maneuver.

Efficient control and good staff work contributed to the flexibility and speed of the movements executed by the cavalry. The following episode is typical in this respect. Part of a cavalry formation set out to attack the village of Shanderovka. Meanwhile, information was received that the Germans were moving between the villages of Khilki and Komarovka. It was necessary to wheel the regiments immediately in order that they might have time to cut the roads for which the Germans were heading. This change in direction was carried out in exactly thirty minutes. *The mobility of the mounted troops made every maneuver swift and unexpected.* No matter how hard the Germans tried, they could not avoid encountering cavalrymen. The enemy was constantly forestalled in his attempts to break out of the encirclement.

## COÖPERATION WITH OTHER ARMS

As to coöperation between cavalry and other arms of the service, the movement of mounted troops behind the tanks deserves special attention. In the Komarovka action, tanks reached the southern outskirts of the village



Colonel General Rotmistrov (right) and Lt. General Kurkin, commanders of tank forces participating in the encirclement of German forces at Korsun-Shevchenkovsky.

Sovfoto Radiophoto

Soviet cavalrymen survey German war equipment wrecked and abandoned in the vicinity of the village of Shanderovka, where heavy fighting took place between the Red Army and the German divisions surrounded in the Korsun "pocket."

Sovfoto Radiophoto





# Soviet Cavalry<sup>\*</sup> *CARDED* by Major B. Korolyev

after neutralizing enemy firing points en route. Then dismounted cavalymen broke into Komarovka immediately behind tanks, and, while the armored vehicles drove to the northern outskirts of the village, the dismounted troops began to clear its central part. This close tactical coöperation between cavalry and tanks was in evidence in a number of other engagements.

As to coöperation between cavalry and infantry, in case of a break-through, the main body of infantry usually enters the breach behind the mounted troops. In battle, however, infantry and cavalry fight side by side, because, as a rule, troopers attack the enemy in dismounted formations. *But at the first opportunity, the cavalymen remount and maneuver about on the battlefield.*

## THE BREACH

It must be noted that Soviet cavalry, which like infantry is constantly accompanied by artillery, is now able to cope with tank attacks much more effectively. The Tishkovka action which took place during the initial phase of the break-through is particularly characteristic of this kind of action. It is a well known fact that under modern conditions it is rarely possible to form an ideal breach through which mobile troops can move. Too much time would be required to achieve complete neutralization of enemy firing points in the zone of the break-through or to attain a hundred percent guarantee against flank counterattacks. The consumption of so much time would likely result in com-

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**In the Battle of Korsun-Shevchenkovsky, during the Soviet advance in the Ukraine, Red Army mobile forces encircled and annihilated 10 divisions and 1 brigade of Nazi armor and infantry.**

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plete failure of the whole operation. Entry of mobile troops into the breach always entails a certain degree of risk.

Sometimes in order to save time, it becomes necessary to hurl tanks and cavalry forward when there is no gateway in the area of the break-through but only channels of infiltration. In such cases, the situation may become extremely hazardous and much will depend on the individual courage and skill of the troops entering the breach. This is exactly what happened in the Tishkovka action. Tanks and part of the infantry had already moved through, and cavalymen had to engage the enemy at the very bottleneck of the breach. One guards regiment fought heroically against German tanks and self-propelled guns, which were trying to close up the breach and cut off the Soviet troops already through.

It so happened that the regimental command post was isolated, both from the rear and from the cavalry squadrons out in front. The regimental commander de-

\*By cable to THE CAVALRY JOURNAL from War Department, U.S.S.R., Moscow.







Above map shows general area of the Korsun-Shevchenkivskyi battle. Extra large dots indicate localities mentioned in article. Shevchenkivskyi is on the Dnepr River south of Dnepropetrovsk. Korsun is to the northwest, south of Kiev. The fall of Odessa in April completed German rout in the Ukraine and sealed the fate of Germans in the Crimea.

fended the command post with the help of a squadron under Guards Captain Ashkhunov. When the German tanks were pressing forward on all sides, the regimental commander said to Ashkhunov, "Tishkovka means everything for us. The counterattack must be beaten off."

"As long as I am alive and have at least one man at my disposal, the enemy shan't pass," answered the captain.

With the help of the artillery reserve and antitank rifles, some German armored vehicles were knocked

out; others were pushed back. At the same time the regimental commander reestablished communications with his squadrons and organized a powerful attack. After heavy fighting, Tishkovka was cleared, and enemy tanks in the regiment's rear were routed. Artillery, which always gives close support to cavalry, played no small part in the battle. Subsequently, Soviet cavalry engaged enemy tanks on several occasions dismounted and after repulsing their attacks, developed the offensive until the surrounded enemy divisions were entirely liquidated.



# MILITARY ART

## Of the Red Army

**D**URING the summer and autumn of 1941 the Red Army held and repulsed the heavy blows delivered by the German invaders, and fought on a huge front under extremely difficult conditions. A treacherous enemy had invaded the Soviet Union. His numerous troops, well trained and equipped with thousands of planes and tanks, plus the advantage of two years fighting experience in Europe, secured certain temporary successes.

The mobilization, concentration and deployment of modern armies requires time. Naturally, it follows that for a country with great expanses of territory, such as the Soviet Union, considerably more time is required for this purpose. That is why, at the outset of the war the first strategic echelons of the armed forces of the Soviet Union had to wage a bitter struggle against an enemy possessing overwhelming numerical superiority and consequently had to fall back deep into the interior of the country.

In the course of its withdrawal the Red Army inflicted heavy losses on the enemy in gruelling defensive operations and wore down and exhausted his forces. It is now universally recognized that no other army and no other country could have withstood the blows that the Red Army and the Soviet Union parried during the early months of the war. The Red Army fought back, mobilized its forces and by the winter of 1941-42, having mastered the art of waging modern warfare, wrested the initiative from the enemy.

### BATTLE OF MOSCOW

In the great battle of Moscow the Red Army brilliantly displayed the characteristic features of its military art of this period. From the standpoint of maneuver and mobility the Germans had at that time the advantage over the Red Army. Superiority in equipment likewise lay with the enemy. For example, the Germans had two and a half times the number of tanks that were at the disposal of the Red Army. Yet the Red Army smashed the Germans at Moscow, and, what is more, smashed them in a difficult and complicated battle of maneuver in exactly that pincer form of warfare of which the Germans prided themselves as being unex-

celled masters. The Red Army, having bled and exhausted the enemy in defensive fighting, surprised him by suddenly launching a counteroffensive, in the course of which it routed both flanks of the shock groups with which the enemy had hoped to envelop the Soviet capital.

In the final analysis, the outcome of the battle of Moscow was decided by the armies held in reserve. The Supreme Commander-in-Chief, Marshal Stalin, displayed remarkable strategic courage and foresight. On Stalin's instructions, these armies had been formed in good time and concentrated behind the lines on both wings of the front. They were brought into action at the decisive moment of the battle, under the very walls of Moscow, exactly at the time when the Germans, having thrown all of their forces into the line, were getting ready to celebrate their victory. The German attempt to realize a "Cannae" at Moscow ended in utter defeat.

It is a well known fact that the change from defensive fighting and withdrawal to a counteroffensive on a large scale constitutes a most difficult and highly complicated military operation. It is an operation that makes exceptionally heavy calls on the moral fiber and valor of the men engaged in the action and demands high quality leadership on the part of the officers leading and directing the troops. Operations of this nature approach the very peak of the Art of Warfare.

In the course of the war the Red Army was tempered and strengthened by experience. Its organization was improved, and its equipment increased in abundant quantities.

### BATTLE OF STALINGRAD

The military art of the Red Army reached greater heights, whereas that of the enemy declined, as may be seen from the example of the Stalingrad operation. At Stalingrad the Red Army did not have an all around superiority of forces, but because of its skilful maneuvering it succeeded in securing decisive superiority on the main sectors. From the point of view of risk and profound ideas based on a sober calculation of all the circumstances of the situation, the operational plan at Stalingrad represents a brilliant achievement. The

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*by Lieutenant General E. Shilovsky, Red Army*

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choice of the right moment for the going over from the defensive to the offensive and the skillful selection of definite sectors for the main blows against the German flanks guaranteed the success of the entire operation at Stalingrad.

The smashing of the enemy troops on the north and south and the encirclement of the main German forces around the city was accomplished with remarkable speed—a total of five days. Officers and men of the Red Army displayed qualities of high tactical and operational skill. Combined blows by artillery and infantry shattered the enemy's front. Mobile forces, often separated by considerable distances from their own infantry, operated boldly and with great success in the depths of the enemy's defenses. Big changes had taken place in the strength and composition of the mobile formations. They had become more powerful and were equipped with far more tanks than was the case at the time of the Moscow operation. The encirclement of the tactical and operational groupings of the enemy was completed quickly and effectively and ended in the utter rout of the trapped Germans.

Stalingrad was distinguished by a two and even threefold increase in the tempo of the operations. Instead of fighting on definite lines as was frequently the case during the Moscow operation the Stalingrad battle was distinguished by fighting in depth and by flexible maneuver.

#### BATTLE OF KURSK

A feature of the 3rd year of the war, beginning in the summer of 1943, was the inability of the Germans to embark on an offensive on a wide front. Nevertheless for their July offensive in the Kursk salient the Germans concentrated on a comparatively narrow sector 17 tank divisions and 18 infantry and 3 motorized divisions. This was indeed a powerfully concentrated blow. However, the first round of the battle showed that, notwithstanding the immense quantities of manpower and equipment employed by the enemy, the Soviet defense was stronger than German offensive might. At the price of huge losses the Germans succeeded in penetrating only a few kilometers.

Having bled and exhausted the enemy, the Soviet troops attacked and, after throwing the enemy back to his original lines, began to move forward. As a result, the summer offensive of the Germans was quickly and successfully liquidated. For the first time in the history of World War II the defense had proved so powerful, skillful and stubborn that it was able to defeat an offensive operation by the main forces of the German army without any loss of territory and with terrible losses for the Germans.

This remarkable strategic success was a victory of the first magnitude. Exercising an immediate and highly favorable influence on the general course of the war, it prevented Germany from going to the aid of Italy and contributed to the downfall of Mussolini.

#### ADVANCE FROM OREL AND BELGOROD TO THE UKRAINE

Not only did the Soviet troops kill the German summer offensive. They followed up their success by launching decisive offensive operations.

Notwithstanding the boastful shouting of the Germans about the invulnerability of their defenses the Soviet offensive proved stronger than the German defense. The enemy defeats at Orel and Belgorod proved to be the forerunners of a series of Soviet victories. After heavy and bitter fighting the German resistance was smashed right along a thousand kilometers of front from the Smolensk gateway to the Azov coast.

The Donetz basin, the most important mining and industrial region of the country, was wrested from the enemy and the Ukrainian territory on the left bank of the Dnepr was liberated. Smolensk was stormed and captured and Soviet troops crossed the borders of Belorussia.

In the south the important Black Sea port of Novorossisk was captured and the enemy thrown out of the Taman Peninsula. Clinging to the heels of the battered enemy, Soviet troops reached the Dnepr and forced it at a number of points. From the Kremenchug area Soviet troops then penetrated deep into the southern part of the Ukraine on the right bank of the Dnepr.

#### RUSSIAN AND GERMAN STRATEGY

It can be said that the military art of the Red Army has advanced in a steadily rising curve. Tempered in battle, it has gained in strength, perfected its methods, and received first-class arms and equipment in ever greater quantities. Stalin's brilliant strategy has acquired ever broader and firmer foundations. In the most difficult and critical moments of the battles at Moscow, Stalingrad, in the Kursk salient and elsewhere this strategy has secured a favorable transformation in the military operations, determined the right time and place for delivering the main blows, has seen to the creation and grouping of reserves, and has determined the victorious outcome of the fighting.

At the same time the war has shown up the defective strategy of the enemy. Hitler's gambling strategy drove the Germans to Moscow in 1941. Obsessed with the idea of winning by means of a sudden first blow, the Germans stretched their communications to the utmost, and at the decisive moment of the battle, the enemy troops found themselves without reserves. In 1942 this same gambling strategy drove the crack German troops into the Stalingrad "sack" and doomed them to their tragic fate. Instead of helping the German troops, the Hitlerite strategy frequently led them into situations which doomed them to defeat. Exactly the same thing was observed during the summer and autumn of 1943.

#### FLEXIBILITY

This war has shown that no single recipe for victory can be used on any and every occasion. The Germans can and will be defeated by the employment of various



methods. The best method is that which answers the requirements of the given concrete circumstances and which can accelerate the destruction of the enemy.

The Red Army has already won a number of outstanding victories over the German invaders. In the future, too, it will successfully counterfoil its flexible

tactics of maneuver to the stereotyped and text book narrow-mindedness of the Germans. The Red Army has beaten the Germans, and will beat them in the future, by the skill, originality and inventiveness of the Soviet military mind and by its rich operational and tactical combination.



# Combating German Counterattacks\*

*by Colonel N. Dushak*

IN combating Soviet attacking and pursuing units, Germans often resort to counterthrusts. Generally they mass strong forces on a narrow sector and strive to forestall encirclement or liberate already surrounded garrisons or groupings. In both instances the Germans, employing masses of tanks, have made fierce counterattacks in an effort to pry open the closing pincers or smash through the ring of encirclement. It has been necessary to weaken such German groupings without delay in order to prevent them from interfering with the offensive.

One Soviet tank unit, moving along a vital main highway, emerged near a railway junction and seriously threatened the flanks and rear of a big German grouping. Seeing the danger, the Germans massed a strong force of 130 to 140 heavy tanks, of which number about 20 per cent were Tigers and Panthers. These they hurled in the flank of the Soviet unit advancing on a wide front. This maneuver was aimed at cutting off the Soviet spearhead.

During the first days of the battle the enemy succeeded in driving a wedge of several kilometers deep into positions of the Soviet troops and emerged on the key highway. Further penetration by German tanks on the highway and neighboring sectors threatened to annul all of the successes previously gained by the Soviet forces. The situation thus created was critical for both parties attempting to annihilate one another from the flank and rear and forced them to fight with their fronts reversed.

Extraordinary measures had to be adopted to cut off the German spearhead. Tanks were naturally the only force that could counter and maneuver or forestall it. Thus a tank unit was called in to prevent the spreading of the enemy tanks.

The commander of the tank unit received an order for action while he was still disembarking and while many machines were still en route. Without waiting for a complete concentration, the unit commander

moved forward with only a few dozen tanks. During the night he covered more than 30 kilometers over poor roads and before daybreak intercepted the enemy on the highway. The main force of his tanks and reserves, comprising approximately  $\frac{1}{3}$  machines, he posted near the road. Smaller groups covering the highway on the flanks were from 5 to 6 kilometers away. Thus the whole of the surrounding neighborhood was under observation and fire. The enemy could evade battle only by undertaking a deep outflanking maneuver which was hardly probable in view of the swampy and woody character of the terrain on the flanks.

As soon as the battle started, the Germans aimed their main blow on the left flank, where the highway was covered by tanks under Lieutenant Pavlov. A small group of the enemy succeeded in forcing a passage and attempted an encirclement of Pavlov's and the neighboring unit. The tank unit, finding itself in a half circle, fought fiercely until evening. Soviet tanks counteracted the maneuvers of the enemy tanks and cut off the motorized infantry, without which the Germans could not derive any benefit from their temporary success.

Simultaneously, new lines of defense were sought and fortification work commenced. When darkness set in Soviet tanks withdrew 4 kilometers and again took possession of key positions. In three days fighting the Germans lost another 38 machines and were considerably weakened. Meanwhile, fresh tank and infantry units concentrated behind the defending units. When the German attacks wore down to where not more than 6 to 8 machines were participating in the assaults, the Soviet troops renewed the offensive. During the first days of the fighting, they had advanced from 25 to 30 kilometers and enveloped a strong German grouping from the flank. To avoid encirclement the Germans finally began a disorderly retreat. Thus we see that in a defensive battle, a tank unit in some cases may constitute an important link in the general plan of the offensive. In such a case, it is not employed to accomplish the main objective, but rather as a means to wear down fresh enemy tank units.

\*By cable to THE CAVALRY JOURNAL from War Department U.S.S.R., Moscow, April 26, 1944.





# The Dnepr Crossing

*by Major P. Milouanov, Red Army*

THE Battle of the Dnepr enriched the experiences of Soviet forces in overcoming water barriers. The struggle at those points on the Dnepr, which were strongly fortified by the enemy, is of particular interest. All stages of the epic crossing were complicated and required military prowess.

One Soviet division reached the Dnepr at a point where considerable forces of the enemy occupied a number of heights on the right bank. The divisional commander was faced with the problem of organizing the crossing and securing a firm foothold on the opposite bank. There was a possibility of making several rafts and mobilizing a small fleet of rowboats to ferry a group of infantry and a number of guns across the river. However, the Soviet commander realized that this group could not hold out for long on the opposite side. He decided, therefore, to bring up sappers and their engineering materials and with their aid transfer the main forces of the division in the shortest time possible.

The crossing operation began with reconnaissance activities. The division commander, accompanied by his regimental and engineering officers, personally inspected both banks in this particular sector. The narrowest spot of the Dnepr was opposite the inhabited point of Khodorov, situated on the west bank. All ap-

proaches to the river at this point were covered with woods. Khodorov itself, as an important junction of highways, was strongly defended by the Germans. The commander selected an area left of Khodorov as the springboard for his forces. There was an island in the middle of the river, which almost ran into a sandy tongue of land on the west bank. Thick bushes and an oak grove lay before steep heights. The bushes and grove permitted the Soviet forces to concentrate secretly for an attack.

While the officers reconnoitered, the Soviet sappers retired to a village on the east bank to collect the boats and build rafts. The boats and four rafts for heavy cargo were ready by dawn of the following day.

The Soviet forces shammed a crossing exactly opposite Khodorov. Meanwhile the chief of staff and the senior engineering officer worked out a schedule of the true crossing. Similar work was done in the regiments. It was decided to transfer two infantry regiments the first night. The third regiment and the artillery would cross over the following night.

Lt. Colonel Lamochkin, the senior engineering officer in the division, reconnoitered the crossing area again with his sapper officers. The landing spot on the opposite bank was selected and the course for the boats to follow in the darkness marked out. Lamachkin ap-





Red Army troops cross the Dnepr north of Kiev, October, 1943. This crossing made possible the encirclement of German troops in the Korsun-Shevchenkivskyi area.

pointed his senior sapper officers to take charge of activities on the boats and rafts during the crossing.

When night fell, the false crossing was launched. Boats were lowered into the water and the sappers made a great deal of noise with their oars. This distracted the attention of the Germans from the true area of the crossing. The enemy sent up flare rockets and opened fire on the east bank. At the same time, Lt. Colonel Lavrovsky and his men started across the river. Reconnaissance scouts had already reached the opposite bank. Sappers helped to load and unload the guns and haul them onto the sandy bank. The regimental officer remained among his battalions and directed them all the time.

In similar fashion, the second regiment crossed undetected by the enemy. By dawn both infantry regiments with their guns, munitions and food supplies were on the right bank. The operation had been so successful that the Germans only learned of Soviet troops concentrating on the west side of the river when the attack began. This sudden onslaught of the Russian forces, supported by heavy artillery fire, took the enemy by complete surprise. Toward noon the Germans were driven off the heights by the river, and the Soviet infantry battalions entrenched themselves in their new positions. This advance secured a *place d'arme* sufficient for concentrating the division and widening its base of operations on the west bank.

That day Junkers 88 bombers appeared twice, apparently in an endeavor to find and demolish the boats. The Germans, however, could not discover the exact spot of the crossing from the air or the ground. The Soviet sappers had done a magnificent job in camouflaging the boats and rafts which were hidden away be-

fore daybreak. The Red Army men, except camouflaged observers, hid in the bushes and the oak grove. The Germans kept firing their guns throughout the day, during which time only one Soviet boat was damaged.

The third infantry regiment, the artillery and several batteries of an antitank unit crossed the Dnepr the second night. The crossing this time was more complicated. The Germans swept the river with their searchlights and fired at the boats and rafts, but the Soviet guns on the east bank silenced most of the German machine guns, located on either side of the captured *place d'arme*.

Thus in the course of two nights the Red Army division crossed the Dnepr at a point where it was 400 meters in width. The Soviet forces lost three men killed and five wounded, several boats and a raft.

#### CONCLUSION

The conclusion that may be drawn from this operation is that if the enemy has organized a formidable defense on the opposite bank of a river, the transport of manpower and matériel in *small* groups must be conducted *only* under favorable conditions; otherwise, the operation will fall through. The enemy will rout every *small* group as soon as it reaches the bank.

It is also clear that when weak forces of the enemy occupy the opposite side or the opponent is demoralized by the retreat, the crossing must be carried out without loss of time even though the pontoon units are absent. The water obstacle must be overcome at once before the enemy has time to restore order in his ranks and bring up reserves.



# Employment of Tank

IN May of 1940 the German blitzkrieg of France was predicated on fast moving armored divisions cooperating with dive bombers and infantry. The overwhelming successes of the Panzer forces were a challenge to the resourcefulness and inventiveness of military leaders all over the world. The antitank doctrine of the United States Army at the time of the fall of France was contrary to our historical military policy in that it implied a passive defense, rather than offensive action. Only the armored divisions thought in terms of aggressive methods to combat tanks.

General Marshall issued a directive to his staff: "Find a solution to the problem of defense against armored forces—using an *offensive* weapon and organization." As a result of this directive, tank destroyers, armed, equipped and trained for the specific mission of destroying hostile armor, were created. The development of American tank destroyer doctrine has had great influence on the British antitank doctrine, and it is pertinent that both Russian and German doctrine has developed along similar lines.

The first tank destroyer was an improvisation in the form of a half track with a 75mm gun mounted facing to the front. It is interesting that the idea came partly from a French ordnance designer, who related the successful use of an old 75mm gun mounted on a five ton truck. This expedient tank destroyer was adopted in order to make the best use of matériel available, and to provide a substitute for the ideal destroyer, in order that field tests might be instituted and tactical principles evolved at the earliest possible date.

Prior to the development of the tank destroyer, the best known defense against tanks was the use of other

tanks to combat them. This was an expensive and unsatisfactory method. In June of 1941, the antitank theory received its first real encouragement when the Germans, employing antiaircraft and other artillery, destroyed over two hundred British tanks near the Egyptian-Libyan frontier.

Another expedient tank destroyer was the 3"-AA gun, mounted on the M-4 tank chassis. This destroyer, known as the M-10, has proven itself in combat, in spite of its limitations.

Concurrent with the development of a self-propelled gun, utilization was made of the towed gun. During this early period, both the 37mm and the 75mm were

*by Colonel Peter C. Hains, III*



An M-10 tank destroyer, mounting three-inch gun, speeds to the front to engage Nazi tanks. Italy, November 6, 1943.

Signal Corps Photos

A tank destroyer fires artillery from a dug-in position in the Mignano Sector, Italy. Tank destroyer 3-inch guns like this one are using regular artillery sights. Photo, December 12, 1943.





# Destroyers

capable of destroying the tank of their period at close ranges. Since this time, developments in armor have been countered by the development of the higher velocity, heavier caliber, antitank weapon, both towed and self-propelled.

## PRINCIPLES OF EMPLOYMENT

In any discussion of tank destroyers and their employment, the primary mission of the tank destroyer must be kept uppermost in our minds. To quote Training Circular No. 88, WD, 24 June 1943:

"The primary mission of tank destroyer units is the destruction of hostile tanks by fire of a superior mass of guns." This destruction is accomplished by *direct* fire.

Although artillery of 105mm and larger caliber are effective against tanks when direct hits are scored by indirect methods, this method has not proven successful as a means of stopping hostile armor. Training Circular No. 125, 13 Nov. 1943 states, "The primary mission of tank destroyer units is to destroy enemy tanks by *direct gun fire*."

In analyzing tank destroyer doctrine and discussing the principles of their employment, one should first consider the capabilities and the limitations of the weapons and equipment of these units. Destroyers are broadly divided into self-propelled and towed guns. These guns are high velocity, flat trajectory weapons, capable of penetrating all known armored vehicles at normal battle ranges.

There is available ammunition of various types, including HE, AP, explosive APC and Smoke, to accomplish the various missions. The gun is characterized by great accuracy as a direct fire weapon owing to the small dispersion of its shot group, excellent direct fire sights and an improved power traverse.

## EQUIPMENT

Since the first inception of the tank destroyer idea, steps have been taken consistently to develop and produce a mount with specific desired characteristics which would include superior cross-country mobility, sufficient flotation to permit employment in varied types of terrain, and speed equal to or greater than that of the opponent that it is designed to destroy. The expedient M-3 with the 75mm was unsatisfactory. The expedient M-10, while possessing these characteristics to a greater degree, failed to possess them to a sufficiently high degree.

The prime mover for the towed gun is, at present, the half-track. This is, admittedly, an unsatisfactory expedient, as in many cases the half-track, cannot negotiate terrain satisfactorily, or must do so at very slow speeds.



The crew of a towed gun goes into action during training. Towed guns are vulnerable when changing position, because they lack the armor and maneuverability of the self-propelled gun. Best protection is afforded by digging in.

One point in connection with the speed of the self-propelled destroyer should be emphasized. This speed represents reserve power. Speed should be utilized only when conditions require rapid movement. Normally, destroyers in contact with hostile forces will move *very slowly*, in order to reduce dust and avoid attracting attention. However, when the occasion arises, it is capable of great changes of pace, permitting rapid movement to threatened areas; permitting quick changes of position when discovered by the enemy; and permitting maneuver to stop hostile armor.

Tank destroyers are provided with light armor as a protection against small arms, machine guns and fragments. Tank destroyers should never attempt to fight as tanks, since their armor is not designed to withstand antitank weapons. It is interesting to note, however, that the M-10 destroyer has armor characteristics which make it comparable to the German Mark III and Mark IV tanks, both of which have proven themselves extremely capable in their rôle.

In discussing equipment, no reference has been made to the auxiliary weapons and the reconnaissance and general purpose vehicles, since they are similar to those of other arms. In summation, attention is called to the requirements laid down for the tank destroyer as a weapon. To quote General A. D. Bruce, who commanded the Tank Destroyer Center from its inception until May, 1943:

"What we are after is a fast moving vehicle, armed with a weapon with a powerful punch which can be easily and quickly fired, and in the last analysis, we would like to get armored protection against small arms fire so that this weapon cannot be put out by a machine gun."

## ORGANIZATION

In order to understand the employment of tank destroyers, it is necessary to know something about the organization of these units. The primary tactical unit is



the battalion. Tank destroyers should normally be employed *by battalion*. Admittedly there are situations which indicate employment of smaller tank destroyer units, but the temptation to do this must be carefully analyzed by the higher commander. The employment of smaller units seldom gives good results and frequently fails.

The battalion includes a headquarters company, and three gun companies and attached medical personnel. There is a difference between the towed and the self-propelled battalions. The towed battalion includes in its headquarters company, two reconnaissance platoons. The self-propelled battalion includes a separate, organic, reconnaissance company of three platoons and a pioneer platoon.

*There are considerably more guns in a tank destroyer battalion than there are in a field artillery battalion.*

Group and brigade headquarters are provided in order to facilitate the tactical employment of massed tank destroyers. A group is suitable for assignment to a corps, and a brigade is appropriate for the tactical employment of a number of groups against a strong armored force. A recent Army Ground Force directive prescribes that groups be used *tactically*, as they are not designed, organized nor equipped to perform the functions of administration and supply.

The platoon is the basic fire unit of the destroyer organization. The platoon includes a small security section, mounted in lightly armored and unarmored vehicles, whose mission is the close-in defense of the guns against infiltration by enemy infantry. The platoon leader assigns position areas and sectors of fire to his guns, coordinates these positions within his mission, and controls the time of opening fire, the selection of targets, the distribution of fire, and the occupation of alternate and supplementary positions. The guns in a platoon should always be placed so as to secure depth within the platoon position, to obtain

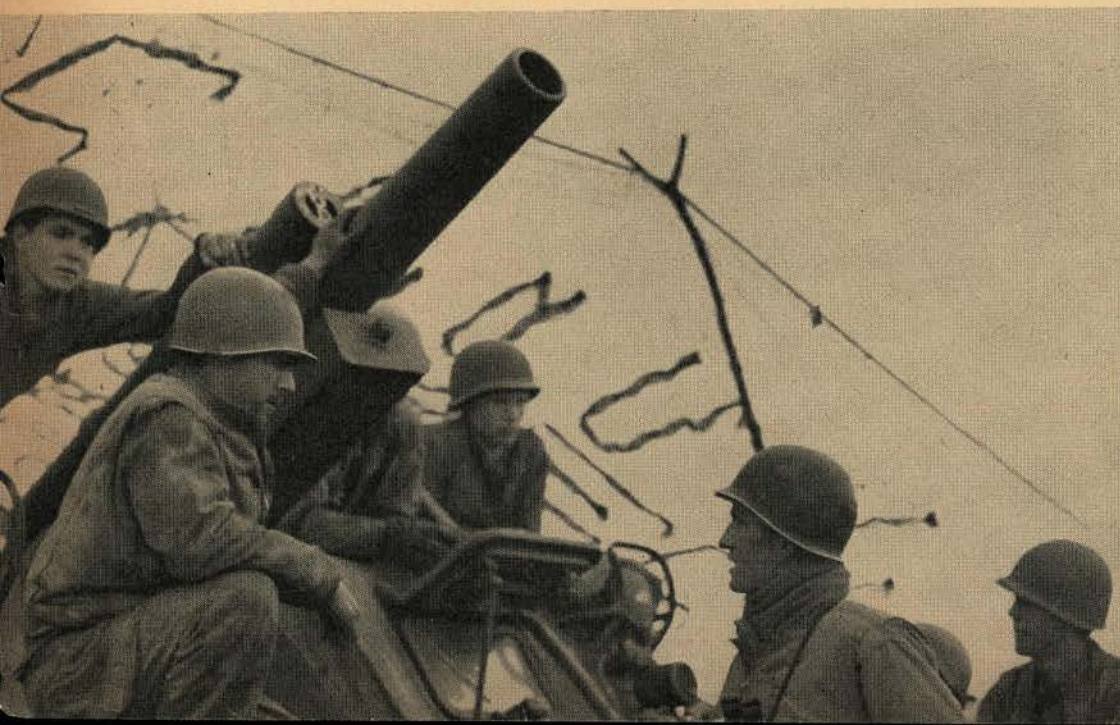
flanking fire with a part of the guns, to cover the dead space of one gun by fire from another, and to obtain surprise and deception in opening fire.

#### EMPLOYMENT BY HIGHER COMMAND

In discussing the employment of tank destroyers from the standpoint of the higher commander, their missions are divided into two general categories: the *primary* mission—the destruction of hostile tanks by direct gun fire, and the *secondary* missions, which are numerous.

Secondary missions include the employment of the guns to reinforce or supplement those of the artillery, *when it can be foreseen that they will not be needed in their primary rôle*. They may be used to reduce prepared positions, concrete emplacements and machine gun nests by direct gun fire. At night, they are extremely effective in knocking out machine guns, located by observation of the source of the tracer elements. They may be employed on roving gun missions, and are effective in both defense and assault of beaches.

In general, self-propelled battalions are more suitable for attachment to armored divisions, and towed battalions for attachment to infantry divisions. *This is not a rule*, and frequently the reverse may be the case. When available in the theater, one or more battalions, in addition to those attached to divisions, are kept under corps or army control to provide a mass of tank destroyers to meet the hostile armored attack, as it develops. If some destroyers are to be emplaced initially to cover the deployment of the mobile destroyer reserves, it is preferable to emplace the towed gun and use the self-propelled gun for the maneuvering force. Destroyers held in mobile reserve, whether employed on a secondary mission or not, should push vigorous reconnaissance for routes to and position areas in the probable localities of employment on the primary mission. For this reason, battalions used as artillery are



A tank destroyer crew receives instructions before proceeding into battle. The missions of tank destroyers are divided into two general categories: the *primary* mission—the destruction of hostile tanks by direct gunfire; and the *secondary* missions, which are numerous. In general, self-propelled battalions are more suitable for attachment to armored divisions, and towed battalions for attachment to infantry divisions.



not attached, but fill the traditional rôle of reinforcing artillery. The employment of towed guns differs from the employment of self-propelled guns, primarily in that towed guns have less battlefield mobility and less armor protection. However, they are more easily concealed on the battlefield.

The decision to employ tank destroyers rests with the higher commander. The decision of *how to accomplish the mission assigned*, rests with the tank destroyer commander. Tank destroyer commanders are always prepared to make recommendations and submit plans for their employment.

To quote from Second Orientation Conference at Fifth Army Headquarters, 14 November 1943:

"To obtain the best results the commander should assign the Tank Destroyer unit a mission within its capabilities, then let the unit commander determine the best way of accomplishing the mission. The trained tank destroyer man is best qualified to determine the method and means to get the job done."

Again, from Training Memorandum, Headquarters, Fifth Army, 20 October 1943:

"The same errors made in the Tunisian Campaign are being made in the employment of tank destroyer units in this theater. Tank destroyer units are employed without regard to tactical unity. Guns, sections, platoons, and companies have been sent on missions and otherwise disposed, without consulting or notifying the appropriate commanders. Tank destroyers have been ordered to assault frontly by movement, enemy gun positions, and in one case, a town held by the enemy. In another instance, a battalion, *without the knowledge of its commander*, was disposed as follows: one company on the left flank of the unit, another company on the right flank, and a third sent on an amphibious operation."

#### TD RECONNAISSANCE

Hostile armor usually holds the initiative, at least locally, and, for the time being. Tank destroyers gain the advantage through thorough reconnaissance, pre-selection and preparation of positions, and routes of approach thereto. Complete and thorough plans must be made, and their revision is continuous.

To insure the deployment of tank destroyers in pre-selected firing positions at the proper time, the reconnaissance element is vital, and to quote Training Circular 88, "*should not be detached for other purposes.*" These reconnaissance elements select the routes over which the battalion must pass to reach the various areas of employment. They indicate the general position areas for the gun companies, based on information of the enemy's movements, a thorough terrain study, a knowledge of the organic antitank defense, and the mission assigned to the battalion. After the position is selected, reconnaissance to gain contact with the armored elements should be vigorous. Tank destroyer

reconnaissance, once having gained contact with the hostile armor, must maintain this contact and keep the battalion informed of the developments in the hostile situation. During the fire fight some reconnaissance elements will remain in contact between the hostile armor and the friendly guns, while other portions locate the flanks of the armored thrust. When tanks are stopped by direct gun fire, reconnaissance continues or reestablishes contact with the hostile armor, prepared to select new routes and position areas from which the gun companies may continue the fire fight. This is pointed out in order to show the needs of the destroyer battalion for its organic reconnaissance. All too often in the past, tank destroyer reconnaissance has been diverted to other uses. When this is done, it should be with a clear understanding of its serious adverse effect on the proper employment of the gun companies.

#### TOWED AND SELF-PROPELLED GUNS

In general, the towed gun is best fitted for employment with infantry divisions, or in situations where it may be dug in and emplaced initially. Its lack of mobility must be compensated for by protection afforded by digging in, and by painstaking concealment. It is preferable to emplace towed guns under cover of darkness or smoke. They are very vulnerable when changing position, because they lack the armored protection and the maneuverability of the self-propelled gun. Their fires should be used to reinforce and deepen those of the organic antitank weapons. When towed guns are held mobile, position areas must be selected and fully prepared, to include such details as the preparation of range cards, and these positions must be occupied prior to the near approach of hostile armor.

Normally, the missions of a towed battalion will be those of strengthening the existing antitank defenses, protecting flanks opened to hostile armored attack, protecting artillery position areas and rear installations, constituting a mobile reserve against a counterattack and employment on their secondary missions, where the enemy situation permits. Where the front is wide and the road net poor, there will be a temptation to commit all of the towed guns initially. This must be balanced against the desirability of retaining a portion of the battalion mobile so as to permit the massing of the maximum number of guns against hostile armor, and to avoid leaving guns emplaced where no tank attack develops.

Self-propelled guns are well suited to employment with armored divisions and to furnishing mobile elements to infantry divisions for the destruction of located tank thrusts. They are capable of being dug in, terrain permitting, or of occupying cover positions adjacent to their fire positions. In the latter case, the fire position is occupied at such a time as to avoid disclosure, but after the direction of the hostile armored thrust is determined.

Routes to and position areas for self-propelled guns





The towed gun, well fitted for employment with infantry divisions or in situations where it may be dug in and emplaced initially, should be well concealed. Movement is preferable under cover of darkness or a smoke screen.

must receive the same careful preselection and preparation as those for towed guns. Self-propelled guns may occupy alternate or supplemental positions under fire, and are especially suited for use as roving guns or roving batteries. When employed on a secondary mission, self-propelled guns may revert to the primary mission with more facility and speed, and are particularly suitable for employment against unexpected flank attacks or counterattacks.

#### OPPOSING ARMOR AND TERRAIN

Before discussing the tactical employment of tank destroyers with other arms, it is necessary to consider the principles under which the opposing armor will operate.

Generally, there are three methods of attack.

Armored attacks may be preceded by infantry, whose objective is the destruction of the hostile antitank weapons.

In situations that are unfavorable for infantry to attack ahead of armor, the tanks attack in the assault waves, followed by infantry. The mission of the tanks in this situation is to place the infantry on the objective with minimum losses.

The third method is to combine infantry and tanks in the assault waves.

The method to be used by the enemy cannot be determined in advance, and it is unsafe to assume that he will follow the same pattern in succeeding operations. The antitank defense against either an attack or a counterattack by hostile armor, therefore, must be fabricated so as to meet all three of these conditions.

How does a commander determine the number of tank destroyer battalions to employ in a given situation?

First of all, there is the ever present question of evaluation of the terrain. Terrain should seldom be

classified as tank proof, although it may be proof against large armored attacks. The guiding principle in determining the number of destroyer battalions required is, *that sufficient tank destroyers must be massed to meet the enemy's armored capabilities.* G-2 must discover and keep track of the enemy armored units available for operation in the particular theater at any given time. I have been asked on occasions to state the frontage that a platoon of tank destroyers should be capable of defending in order to give a measure of the number of platoons required in a given situation. This method of employing tank destroyers is fallacious, and will lead to disaster. *Sufficient tank destroyers must be massed to meet the enemy's armored capabilities.*

#### EMPLOYMENT IN ANTITANK DEFENSE

Tank destroyers reinforce and deepen the organic antitank defenses of the infantry division. The mission of the organic antitank defense is the local protection of the troops and installation. The mission of the attached antitank elements is the protection of the command or area as a whole. In order to be effective, all antitank means must be integrated and coordinated carefully. This is a responsibility of the higher commander, but, in turn, it is likewise the responsibility of each lesser commander within the limitations of his mission.

There are two means of antitank defense, passive and active. They must be integrated closely in order to be effective. Among the passive means are reconnaissance, a tank warning system, choice or selection of terrain, cover and concealment, utilization and improvement of natural obstacles, and the construction of new obstacles, principally mine fields.

Our rôle today is principally that of the attack, and our defense against hostile armor will be directed pri-



marily towards stopping and destroying hostile tank counterattacks. In order that destroyers may be massed to meet hostile counterattacks, it is necessary to have adequate information as to the probable strength and direction of the enemy attack.

Since information regarding the hostile armored thrust will be available only after the enemy has committed himself, an adequate tank warning system must be provided. The warning net should be coordinated through the higher headquarters, and subordinate units must at all times have stations open to receive the flash warning message. Unfortunately, training and coordination in the utilization of the tank warning system has lagged. G-2 of the army must keep track of the strength and location of the various enemy armored elements in his theater, and this information must be furnished to the lower units. In Africa we frequently found that our first knowledge of hostile tank attack came from local sources, after the Germans were in the immediate vicinity.

At Faid in February, 1943, German armor amounting to three divisions concentrated over night to make the drive to Kasserine. Even after the first day's battle, the higher command seemed convinced that not more than fifty tanks were capable of being present in the area. Subsequent events indicated that upwards of 200 were present.

At Faid in April, 1943, it was known to the higher command that German forces were withdrawing. However, the combat command that launched the attack to take those passes, lacked this knowledge, and only discovered it when the attack met with little or no resistance.

Towed guns should be committed sufficiently ahead of the attack to insure their being carefully dug in and well concealed, and in time to permit detailed coordination between infantry antitank weapons and the tank destroyer guns.

The choice of ground may be forced on us, but every measure must be taken to improve and strengthen the antitank defense system, in order that local successes by hostile armor will strike against successive opposition and the counterattack be broken and destroyed. This dictates an organization in depth.

The army or corps commander will indicate the general line or area of the barrier system. Mines and obstacles are then used to strengthen the natural barriers and canalize the attack. The intelligent use of dummy guns, faked detonations and flashes, roving guns, and other deceptive means, assist in directing the hostile tank approach into desired channels. The organic antitank weapons of the division, with the attached antitank weapons and aggressive counterreconnaissance, are the active means for antitank defense. German tank attacks are preceded by thorough reconnaissance, and this must be countered with effective counterreconnaissance.

What organic weapons has the infantry division available for its own use?

Usually, the infantry division is reinforced by one or more attached units, including tank destroyers. The defense calls for a cellular disposition of battalion areas organized for all-around defense. Often the organic antitank guns available to the infantry regiment may not be sufficient to strengthen all of the battalion defense areas, and in this case, some of the attached tank destroyer guns, preferably towed, must be emplaced initially to augment the organic antitank defenses.

The advantage of keeping the tank destroyers mobile is that it permits the battalion to mass its guns against the enemy, and if the enemy leads off with infantry





and is successful, the mobile guns will not be destroyed before they have a chance to accomplish their primary mission of destroying tanks. On the other hand, towed guns run a strong chance of being immobilized or destroyed by fire, while reaching their preselected fire positions, particularly if these positions are well forward, or where there are insufficient obstacles to slow down the enemy attack. Towed guns should be committed *sufficiently ahead of the attack* to insure their being carefully dug-in and concealed, and to permit detailed coordination between infantry antitank weapons and the tank destroyer guns.

The tank destroyer doctrine is: If the forward infantry units are not protected by obstacles, to such an extent that their organic means are sufficient to prevent them from being overrun by tanks, then some, or all of the towed tank destroyer guns must be emplaced well forward to protect the infantry. When obstacles are such that the forward infantry can protect itself with its own guns, then tank destroyers are best held mobile. Usually, a combination of the two methods will be used, part of the tank destroyers being emplaced initially, in the forward area, while the remainder are held mobile. When a towed battalion is divided by placing the guns within the defense areas, the closest type of coordination, and even attachment, is indicated.

#### EMPLOYMENT IN MANEUVER

The doctrine for the employment of the self-propelled battalion is different. In most situations it will be held mobile, prepared to move to any one of a number of preselected, reconnoitered, *prepared* areas. When the terrain is such as to prohibit lateral maneuver, the self-propelled battalion may have to be split, and the lesser part attached to the unit in whose area it operates.

The division must insure close coordination between the tank destroyers and the supported troops. The division commander assigns a mission which integrates the fire power and the tank destroyers with that of the rest of the division. The tank destroyer commander completes the coordination by reconnaissance of the possible localities in which he may be employed, and by studying the dispositions and plans of the various defense area commanders, insuring that his own plan fits the plan of the troops already on the ground. Energetic personal contact between commanders is vital for obtaining final coordination.

An armored division has more antitank protection than an infantry division. Tank destroyers operating primarily with armored divisions, stop and destroy hostile armored counterattacks, in order that the division may continue its assigned mission.

Tank destroyers usually guard the flanks of the armored division to prevent their being turned by hostile armor. When the enemy may be expected to accompany his tank attack with infantry, it is advisable to

form an armored infantry—tank destroyer team to meet it.

Tank destroyers frequently strengthen the armored infantry-armored artillery base of fire, to facilitate the maneuver of the tank elements of the division, and to cover a rally position for unsuccessful tank attacks. Towed guns may follow the tanks well forward for this purpose, being emplaced under cover of the tank attack and dug in. They should be closely supported by armored infantry.

At times, a large armored counterattack is not an enemy capability, and he will use his available tanks as antitank guns, roving guns and in local counterattacks against our armored infantry. Tank destroyers must be well forward to destroy these hostile tanks, and located antitank guns, by direct fire.

Enemy armored counterattacks against units reaching their objectives will come swiftly and with little warning. Destroyers must arrive on the objective quickly and protect the reorganization of the friendly armor. Reconnaissance is pushed well forward at this time, and the tank warning net must be particularly alert.

Although tank destroyers in principle hold ground against advancing hostile tanks, when tanks are defeated, intelligent use must be made of fire and movement to destroy the enemy tank forces.

#### AS REINFORCING ARTILLERY

Tank destroyers may be employed on a secondary mission as reinforcing artillery, when it can be foreseen that they will not be needed in their primary rôle. It is for the higher commander to decide when to employ destroyers as reinforcing artillery.

The capabilities of tank destroyers as reinforcing artillery are as follows: One destroyer battalion greatly increases the artillery fire power of a division; the effective radius of burst of the high explosive ammunition is rated at 30 yards. While heavier artillery will inflict more casualties, it has been our experience that the German 88mm high velocity gun neutralizes a position as completely as a 170mm. The lack of warning of the high velocity shell compensates for the heavier detonation of the larger guns, at least as far as morale is concerned.

The added range materially deepens and thickens the zone of artillery fire. Interdiction, harassing, and preparation fires can be laid down by tank destroyers in areas beyond the range of the 105 battalion. The flat trajectory increases the probability of ricochet fire. The tank destroyer reconnaissance company may often supplement the artillery OP's. In fact, on many occasions in Tunisia by communication relays, tank destroyer reconnaissance platoon leaders adjusted fire for artillery battalions. So much for the capabilities.

The limitations of the tank destroyer when in the rôle of reinforcing artillery are personnel, matériel and ammunition supply. There are relatively few enlisted men in a tank destroyer company as compared with the



personnel of a field artillery unit of the same number of guns.

The flat trajectory of the tank destroyer gun makes it necessary to find position areas with low masks and for the same reason, much larger areas are dead space than for the 105mm howitzer. The maximum elevation of the tube gives less than the maximum range for the gun unless the spades or rear of the motor carriage is dug in. There is no angle of site drum, and angle of site must be added or subtracted from the quadrant elevation.

There is no range or elevation drum, and the gun can be laid for range only with the quadrant, which is slower. There is no compensation for cant on the self-propelled gun, and the ground on which the vehicle rests must be leveled. In making a decision for the employment of tank destroyers, *keep this fact in mind*. The life of the tube compared to normal artillery, is short. As a consequence, unless the reduced charge ammunition is available, tank destroyer guns that have fired an excessive number of rounds can be expected to be incapable of the proper performance of the primary mission—the destruction of hostile tanks with direct gun fire. The danger of excessive firing occurs when indiscriminate or extravagant indirect fire missions are assigned. There is no grave danger of the tubes wearing out in their direct fire rôle. Finally, flash and muzzle blast of the tank destroyer gun is considerably greater than that of the field artillery pieces.

Training Circular No. 125 states, I quote:

"When the need for employment of tank destroyer units in a secondary rôle cannot be foreseen in sufficient time for the unit concerned to haul its ammunition, the higher commander must allot sufficient trucks from other sources."

It is expected that normally the indirect fire mission will be anticipated sufficiently in advance to permit dumping of an ammunition reserve at the position. But if this is not the case, normal requirements cannot be met with the transportation available.

When the decision to employ tank destroyers is made by the higher commander, the tank destroyer company will normally reinforce the fires of a field artillery battalion.

The reinforced field artillery is charged with the following responsibilities: Designation of the company position area and approximate direction of fire; determination and designation of at least one place mark in the company area to include, coördinates, altitude, and direction; target area survey to include location, altitude, and identification of a base point, both on the fire chart and on the ground; execution of fire direction by designating targets by coördinates, altitude, ammunition allotted, and time of firing.

Tank destroyers, when acting as field artillery, are trained to fire scheduled or prearranged fires. In order to accomplish this, the tank destroyer company organ-

izes a fire direction center and survey party. The tank destroyer fire direction center is not expected to lay down immediate fire on targets of opportunity. Neither does it mass the fires of the company in the sense that a field artillery fire direction center does. Its only requirement is the calculation of data for prearranged fires. Weather corrections are determined entirely by registration, and the use of metro data is not contemplated.

The communications for this set-up are principally telephone.

Alternate radio communication between the destroyer company and the artillery CP is provided.

Types of fire are limited to percussion and ricochet. Fire for effect is accomplished at center range only. Any portion of the target not neutralized is covered by another sensing.

All officers are being trained in forward observation and axial precision methods.

#### OTHER SECONDARY MISSIONS

Secondary missions also include the reduction of concrete emplacements and field fortifications by direct gun fire. Accurate, effective fire can be placed on hostile machine guns at night, by laying on the source of their tracer elements. Self-propelled destroyers are well suited for this purpose and for the rôle of the roving gun.

In Tunisia in March, the 1st Armored Division was stopped east of Maknassey by prepared fortifications across high ground at the end of a long valley. During this stabilized situation, the — Tank Destroyer Battalion moved one M-10 into a wadi on the infantry flank, and located a good OP overlooking the enemy rear. By taking advantage of a forward position, and the greater range of the 3" gun, it successfully harassed German supply installations and destroyed, by actual count, 48 enemy vehicles in an area beyond our artillery range.

#### CONCLUSION

It should be stressed again that the primary mission of tank destroyer units is to *destroy enemy tanks by direct gun fire*. They are organized and equipped for that specific purpose. Secondary missions should not be undertaken at the expense of maximum proficiency in the execution of the primary mission, nor should training for secondary missions be undertaken until proficiency in the primary mission is attained. The performance of secondary missions is contingent upon three factors: training of personnel; battlefield maintenance and timely replacement of matériel; and tactical dispositions on the battlefield to meet all enemy armored capabilities. To be effective against enemy armor, an adequate tank warning net must be maintained. Continued vigorous reconnaissance by tank destroyer units must be insured, and sufficient tank destroyers must be massed at the proper place in sufficient depth and time to meet the enemy armored thrust.



CARDED

# Radio Pack for Reconnaissance

*by 1st Lieutenant Paul E. Koefod, Cavalry\**

**AUTHOR'S NOTE:** The development of the pack frame described in this article was made possible by the backing received from the Reconnaissance Section of the Department of Tactics, The Cavalry School. My thanks are due those members of the Staff and Faculty who lent assistance in the project and to Mr. R. A. Gill, supervisor of the carpenter shop.

**T**HE nature of reconnaissance in our far-flung combat areas is a matter of considerable interest to most cavalrymen. In discussing various reconnaissance techniques, many officers and men returned from the several fronts have described the difficulty of transporting the 510 radio on patrols and to OP's. Some have carried the set like satchels on long marches through desert, mountain and jungle. Others have slung their sets on poles borne on the shoulders of two-man teams. All agree that the toil of these methods is exhausting.

On dismounted patrols during training, it has been noticed that the officer lugging the 510 radio set was invariably slowed by fatigue and the unwieldiness of his load. The speed of the entire patrol was thus reduced to his pace.

Experience on canoe trails back in peace-time summers prompted the question: Why not a pack frame for the radio? A pack frame would facilitate carrying and leave a man's hands free for other things.

\*C.R.T.C., Fort Riley, Kansas.

Shoulder strap adjustment. Load is balanced, hands free.

A request for permission to make a model pack frame in the shop at Kansas State College was granted. The following demonstration of this model at the Cavalry School secured the facilities of the carpenter and saddle shops for further experiments. With the assistance of Mr. R. A. Gill, a series of experimental pack frames led to the development of the two types illustrated.

Though designed primarily for transportation of the SC Radio 510 on dismounted patrols, these pack frames are not limited to this use. Rations, ammuni-



The two-man pack. Both men can run or crawl . . . and fire from any position when wearing the pack frame.

tion and a variety of equipment can be lashed to and transported by means of them. Their design is such that troop carpenters can copy them with tools and materials at hand. Materials are noncritical, and the maximum cost, if all materials be purchased, is approximately \$2.00.

The type No. 1 pack frame was designed for two-man loads on distant missions. Extra rations or ammunition can be lashed to it, in addition to either unit of the radio. The man using it has both hands free and can make a ten or fifteen mile march without discomfort. It is so balanced and placed upon his back that a man can run or crawl with it. He can fire in the prone, kneeling or off-hand positions with the pack frame in place. Neither unit need be removed from its frame for operation of the set. The units can be connected





# Reconnaissance Patrols

as soon as placed side by side. The station can be on the air within seconds.

The type No. 2 pack frame was designed for one-man loads on shorter missions. However, its use in two-man loads provides a large space for rations and other supplies needed by patrols out for long periods of time. The man carrying has both hands free, and a "tump line" (head harness) is provided to make carrying easier. When observing, firing, resting or operating the set, the carrier has only to slip the tump line onto his chest to provide freedom of movement for his head. He can also rest his neck in this fashion, carrying the entire weight by the shoulder harness.

Operation of the radio as a "walkie-talkie" is an especial advantage of the type No. 2 pack frame. In addition, only one man is burdened with a load. The units of the set are connected when placed on the pack frame, and the mike and phone combination can be carried in the pocket, plugged in and ready. The station can be opened by extending the aerial and switching on the power. To place the aerial in a vertical position, if necessary, the operator-carrier need only bend forward slightly at the hips.

Hardwood (ash, hickory or oak) provides the best materials for the frames. Softer woods are not recommended, for they will not stand rough use or heavy loads. Nonrusting screws should be used to hold the frame together and for attachment of the harness. Web belting (2") provides the cheapest and best shoulder and head harness and lashing straps. Tongueless buckles should be used to provide adjustment of shoulder and head harness and for fastening the lashing straps. Such buckles are most easily adjusted and will not slip. Four-inch wide strips of heavy canvas stitched to triple or quadruple thickness make comfortable form-fitting back rests. These back rests transmit the load to the back, permitting no part of the load to touch the body. The resultant air space provides for circulation between the body and the load. For specifications and design, see the accompanying worksheet and illustrations.

Experiments and experience have proved the practicability of these pack frames. They can be made easily by unit personnel and they will speed and simplify the work of reconnaissance units everywhere.

(EDITOR'S NOTE: Packboard, Ply Wood, was standardized for the Army on 18 December 1943, and is now issued to infantry, engineer and medical units. The Cavalry Board is investigating the use of the standard packboard by Cavalry units.)

## ASSEMBLY OF KOEFOD PACK FRAME

TYPE NO. 1: Cut side members and end cross pieces to specifications and assemble by means of two

2½" No. 7 flat-head screws in each end of cross pieces. While assembling, adjust frame to square. Cut and notch spreaders as specified and assemble to undersides of end cross pieces by means of three 1½" No. 7 flat head screws in each. Ends of spreaders are attached to side members by two 2" No. 7 flat head screws. Cut arch brace and assemble between broad ends of side members as indicated by means of two 2" No. 7 flat head screws in each end.

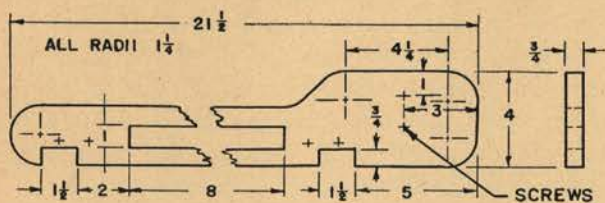
Drill all screw holes and countersink. Use rust-resistant screws and lubricate screws with beeswax.

Fold ends of shoulder straps under and attach to center of under side of top spreader by means of four 1" No. 7 flat head screws in each. Fix ends to spreader so that shoulder straps extend outward from each other

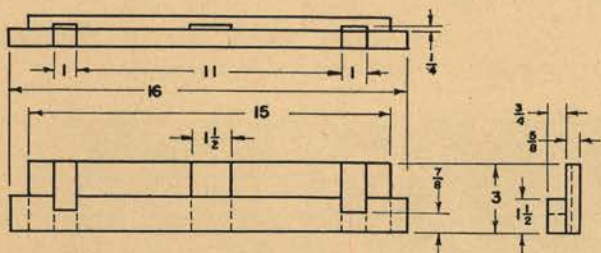


Top. One-man pack. Load is carried high and well balanced. Attachment and adjustment of tump line are shown. Bottom. Tump line is dropped to chest during transmission and for rest. Station can be put on the air quickly.

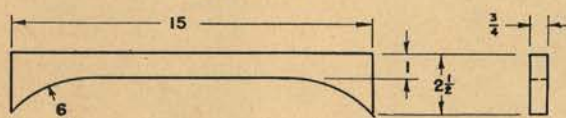




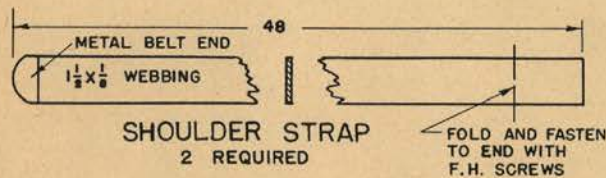
SIDE  
2 REQUIRED



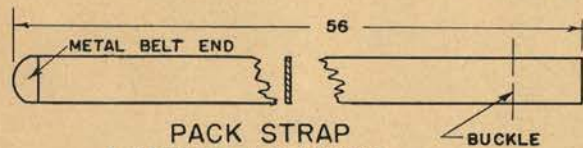
END  
2 REQUIRED



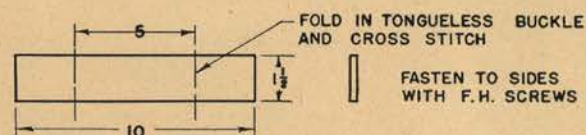
BRACE  
1 REQUIRED



SHOULDER STRAP  
2 REQUIRED



PACK STRAP  
1 REQUIRED FOR LASHING



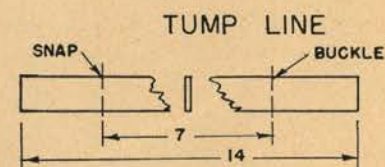
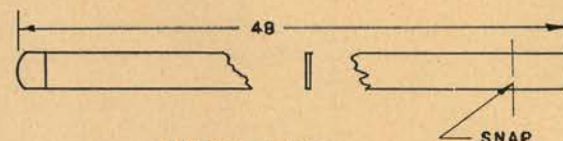
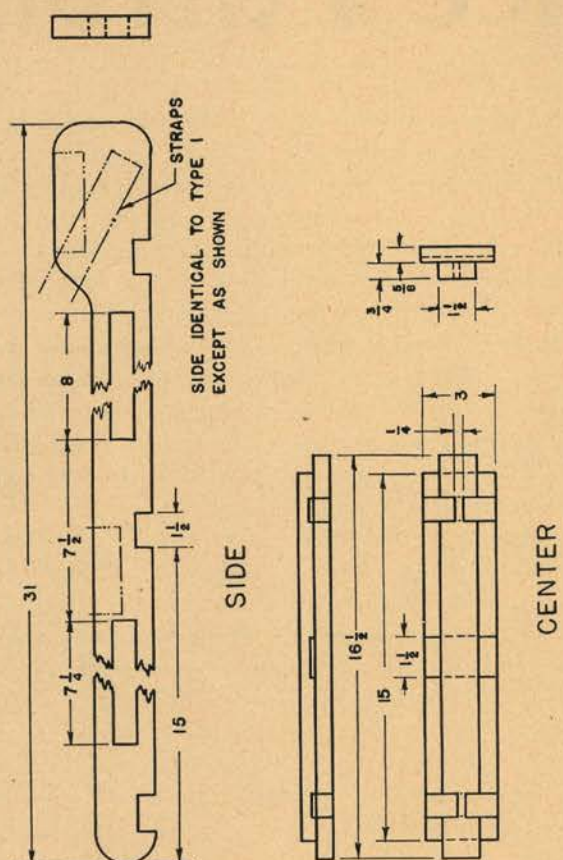
HARNESS END  
2 REQUIRED



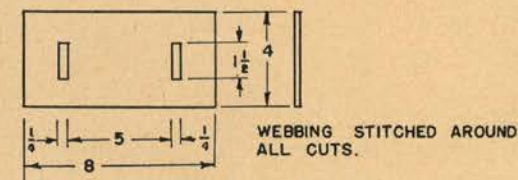
BACK BAND  
2 REQUIRED

ASSEMBLE WITH F.H. WOOD SCREWS

KOEFOD PACK FRAME  
TYPE 1



TUMP END



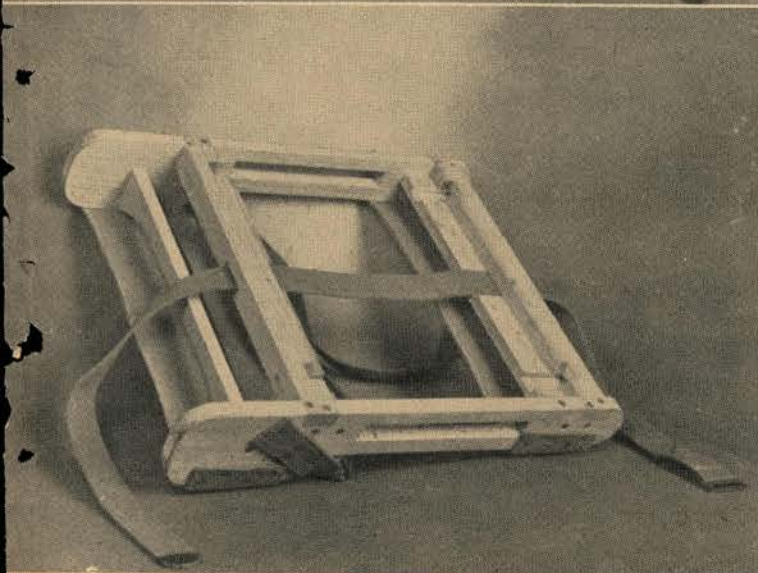
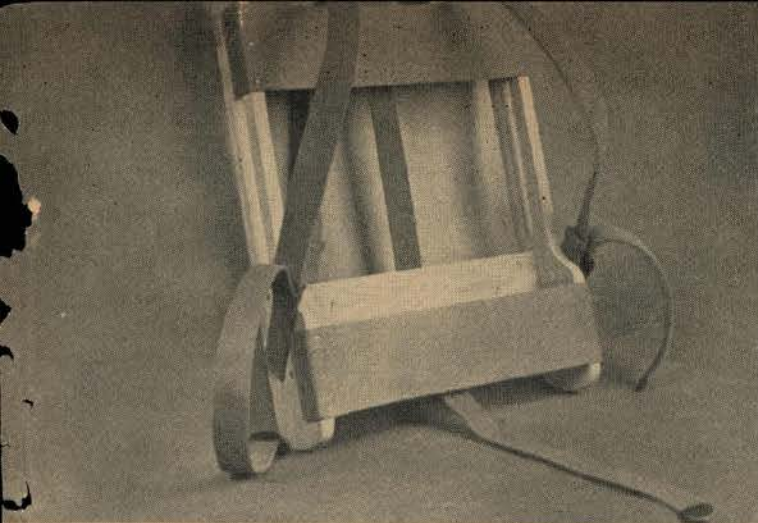
HEAD PIECE

PACK FRAME 2 IS BUILT LIKE 1 EXCEPT FOR  
PIECES SHOWN.

PACK STRAP 102 INCHES LONG REQUIRED

KOEFOD PACK FRAME  
TYPE 2





Type No. 1. Two-man pack. Back of frame shows web back bands and adjustable harness. Note attachment. Front of pack frame shows recess for set unit and method of attaching lashing strap. Lashing strap is inserted through slots, buckle end to top.

on line from center of spreader to 1" inside top ends of side members.

Cut and stitch back bands as specified and fasten to outsides of side members with  $\frac{3}{4}$ " flat head screws by folding bands over side members 1" as indicated. Stretch back bands tight.

Fasten buckle shanks of shoulder harness to outsides of broad lower ends of side members at angles as indicated. Use four  $\frac{3}{4}$ " No. 7 flat head screws in each.

The lashing strap is inserted through the slots in the upper and lower spreaders as indicated, buckle end to top.

Place either unit of the SCR 510 in the socket provided between the side members and end cross pieces, handle up, and fasten lashing strap over the unit.

**TYPE NO. 2:** Assemble the Type No. 2 pack frame as Type No. 1 except for center cross piece and spreader (see worksheet and illustrations). Shoulder straps are attached to center spreader in same manner as in Type No. 1.

The lashing strap is inserted through slots provided in end and center spreaders from top downward, buckle end up. To place set on the frame (place bat-

tery pack at lower end), raise the lashing strap in each section and place each unit *under* the lashing strap in its section. Bring free ends of lashing strap up and over set to buckle. Units of 510 set are placed on the frame with handles up and connecting cords to the left. Lashing straps will bind handles on set units and so keep them from rattling.

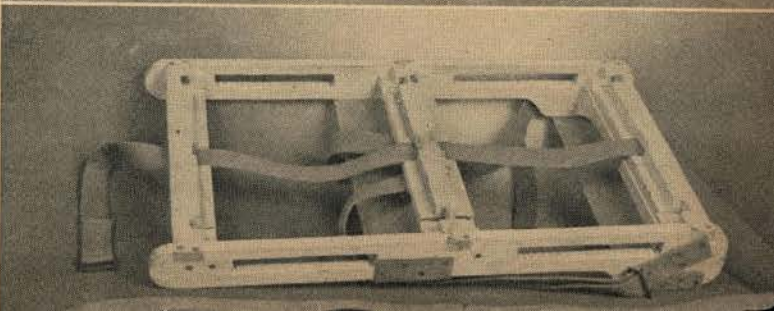
"Tump line" snaps are attached to rings on the upper corners of the battery pack, and the tump line is adjusted to the wearer by means of the tongueless buckle of the short shank portion of the tump line. For tump line see worksheet and illustrations.

Units of the SCR 510 are seated *into* the pack frame between the side members and end cross pieces. This placement of the set prevents shifting when it is lashed in place. The spreaders, notched to receive the lashing strap and "nubs" under each unit, become floor plates to support the units when in place.

Any supplies or equipment desired can be attached to these pack frames by means of their lashing straps and ropes or straps put through the lashing slots in the side members. The lashing slots may be cut with square or rounded ends as convenient.

These pack frames may be painted olive drab or mottled as desired. For dismounted patrols it might be well to mottle both pack frame and radio set.

Type No. 2. One-man pack. Back of pack frame shows attachment of back bands and adjustable shoulder harness. Tump line with tongueless buckle for adjustment and harness snaps for attachment to rings on battery pack. Front of pack frame shows recesses for units of radio set, placement of lashing strap, and attachment of harness.





# Science Behind the Soldier

*by Professor J. D. Bernal\**

AT the beginning of the war, scientific work in Britain was carried out in three main groups: (1) fundamental science—scientific research unlikely to be of any practical value for long periods, which was carried out mainly at the universities; (2) immediate technical scientific research, mainly in the research laboratories of industrial firms; (3) research controlled by the government through the Department for Scientific and Industrial Research, which was concerned primarily with the intermediate range of technical problems, the maintenance of standards and a number of agricultural and medical establishments.

The only direct military science was in the comparatively small research departments of the Navy, Army and Air Force.

The Royal Society, Britain's premier scientific society, did not form part of the official organization. It remained essentially a meeting place for the leading scientists and an agency for scientific publication. The other scientific societies occupied corresponding positions in their own fields.

## ADAPTATION TO WAR

The war did not lead to any structural alteration in this scheme, but to its adaptation to the immediate needs of war and to a very considerable shifting of the personnel inside it. Just before the war there was established a national register of scientific and technical manpower in which the qualifications of each scientific worker were recorded. This body gradually became a central clearing house for distributing scientists to those tasks for which there was most demand. Naturally this did not mean that they necessarily continued in their peace-time fields. The war showed, for instance, a much greater demand for physicists than could be met by employing professional physicists and many chemists and biologists occupied themselves with physical tasks.

There was naturally an immediate strengthening of the direct war science establishments, and this has gone on steadily throughout the war. At the same time, however, the work of these establishments was very much extended by turning over other laboratories and institutes, of both the government and the universities, to scientific war work. Nearly every section of the Department for Scientific and Industrial Research, such as the National Physical Laboratory, the Road Research Laboratory, the Building Research Laboratory, etc., are now occupied almost entirely with such problems.

Such an extension of work necessitated corresponding central organizations, and this has been achieved largely by the setting up of advisory councils, composed

of eminent scientists, and the appointment of scientific advisers. These have had a triple function. As senior scientists with a wide knowledge of the resources of the country, they have been able to find the men and the institutes most suitable for tackling each problem as it arose. Secondly, they have acted as a form of scientific jury to assess the value of the results arrived at by the various scientific institutes. Finally, they have been able to use their considerable influence to see that scientific effort is most effectively directed and applied.

## MILITARY FIELDS OF SCIENTIFIC CONTRIBUTION

The use of science in war is two-fold: (1) increase of the war potential of the country and (2) provision and use of weapons.

The first use is the extension and intensification of peace-time science in order to make for the greatest efficiency of production in the country as a whole, and to do this with heavily restricted resources both of material and labor. This means maintaining and increasing industrial scientific research and medical research, and, even more, because of Britain's increased dependence on home production, in developing practical agricultural research.

In these fields it is a matter of expanding and speeding up existing work. The main innovation has come rather in the application of science than in its discovery. Owing to the new controls in industry and agriculture, it is possible to see that the results of scientific research are applied widely and quickly. As a consequence Britain is better fed and healthier as a whole than in any previous period in her history.

In military science proper, it has not been sufficient merely to increase the scale of work; there have been many innovations in method as well as in detail. Military science has three main aspects: the development of weapons; the countering of enemy devices, and the direct utilization of science in strategy and tactics. In peace-time only the first of these had been extensively practiced. In war it was necessary not only to speed up the processes of developing new and better weapons—aircraft, tanks and guns—but to consider production problems under war conditions, with lack of certain raw materials, use of unskilled labor, and so on.

## WEAPONS

By the use of research the quality of weapons has steadily improved and production increased with a great economy of time and material. An example of this is the case of gun design. By the rational study of the phenomena of the explosion in the gun, it has been possible to economize both in the quantity of the metal required, which has made a lighter and handier gun,

\*University Professor of Physics, Birkbeck College, London; now Scientific Adviser to Combined Operations Command.



and in the quality of the metal, which has saved precious alloying elements. In the use of explosives there have been enormous improvements based on new knowledge of the physical processes of explosion—work largely carried out by men trained in the more abstruse branches of mathematical physics.

#### COUNTERING ENEMY DEVICES

Before an actual war breaks out, it is impossible to know exactly what kind of weapons are needed, and even in a war this takes some finding out. Weapons as developed in peace-time are necessarily modified both by practical conditions of war and by the counter weapons used by the enemy. It is consequently necessary to be revising designs continually in the light of experience. Here again, science has played a large part.

In the early part of the war, much was done in countering the various "secret" weapons with which Hitler tried to scare the world. A great variety of mines and bombs with most ingenious fuses had their stings drawn by the application of high speed and heroic scientific research in which a number of workers lost their lives.

In the field of radio research also there has been what is practically a battle of scientists. Each enemy radio device has had to be detected, analyzed and countered in an incredibly short time.

One of the characteristics of the war has been the increasing use of highly complicated scientific apparatus in the front line itself. This apparatus could not just be handed over to troops with only general technical training. It was necessary for the scientists who developed it to follow the apparatus to where it was being used and to analyze its performance in order, at the same time, to train people to use it and to learn how to improve the apparatus itself.

#### OPERATIONAL RESEARCH

It was in this way that there began, about the second year of the war, a third and almost entirely new use for science, the actual scientific study and analysis of military operations, a process which is now called Operational Research. In the Navy, Army, and Air Force there are now attached to the commanders in the field operational research groups whose business is to keep close contact with all phases of military operations—bombing, artillery fire, antisubmarine work, communications and transport. These scientists act as a link between the actualities of warfare and the research and development departments attached to war industry at home. They are able to specify more quickly and accurately than could be done before what the real needs of the forces are and to see that they are satisfied. But they are able to do more.

The war has become very largely mechanized, and the performances of various parts of the war machine are analyzable in the same way as factory operations. Statistical methods can be and have been successfully

used for calculating the actual effort required to reduce enemy positions by the use of different tactical methods and thus to help to decide the most effective tactics to use. This began even before the war, in the analysis of air combat, and was one of the reasons why the Battle of Britain was won by the Spitfire.

The general method is a straightforward scientific one. Although the actual situations in war are extremely complicated, it is usually possible to isolate a certain number of variables, the value of which can be determined in different actual instances. For instance, aircraft can fly in to attack at different heights, their effectiveness and the loss they sustain as a function of the height can be measured. From a sufficient number of instances, the arrangements giving the greatest advantage can often be found by calculation and checked on by practical trials. The bombing of Germany is now largely being carried out in this scientific way.

It is clear that such use of science in no way diminishes the importance of the decision and skill of the military commanders. It simply provides them with new knowledge as to the probable result of dispositions they choose to adopt and is of assistance to them much as musical theory is to the composer. In recent months there has been an increasing tendency for this union of science and military leadership to become even closer by the attachment of personal scientific advisers to senior commanders. Britain is moving toward an almost complete fusion of the scientist with the fighter at the front and production at the rear.

#### MOBILIZATION OF SCIENTISTS

This great transformation of the use of science has not only been a matter of organization at the top. The actual scientists themselves, many of them through the Association of Scientific Workers, have played a large part. They have insisted that their mobilization for war service should be complete, that long-range schemes of a peaceful nature be put on one side, and that every scientist should be given a chance to be used where he is likely to be most effective.

At a great conference on the Planning of Science in January, 1943, a program was put forward for a more rational, effective and closely knit organization of war science. Many earlier recommendations of this group have in fact been adopted, particularly in the appointment of a small body of three scientific advisers to Britain's Ministry of Production, with the general charge of seeing that science is most effectively used in the war effort.

This brief and necessarily general picture of science in the war shows what Britain has achieved and hopes to achieve; but the war is not the effort of any single nation.

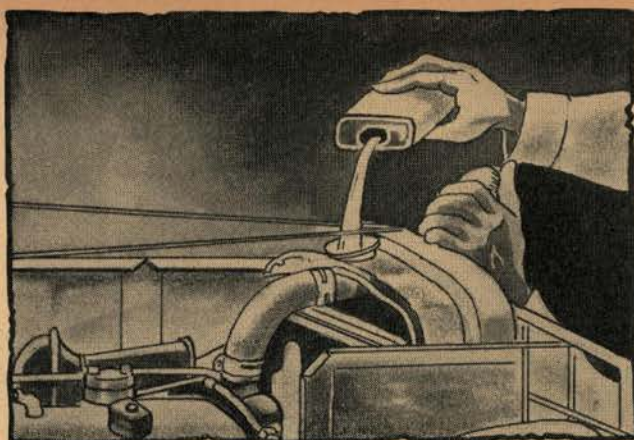
The United Nations are fighting against a common enemy and linked very closely in a common purpose. They require as close a collaboration in the scientific as in the military field.



## DO'S and DONT'S on

# *Vehicle Care in Warm Weather*

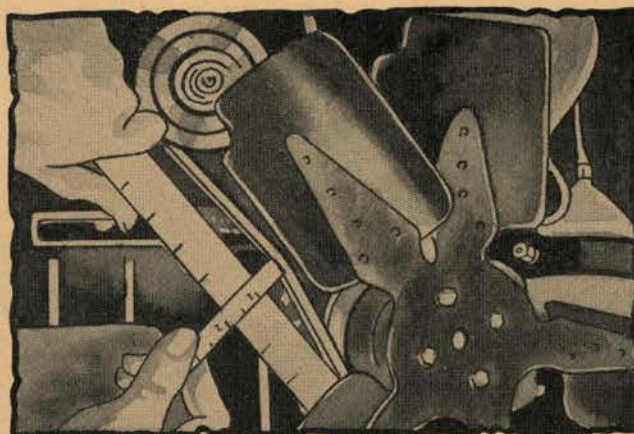
Vehicles have to "sweat-it-out" like everybody else when summer comes boiling along. You can keep them off the "summer deadline" by following the simple precautions outlined on this page.



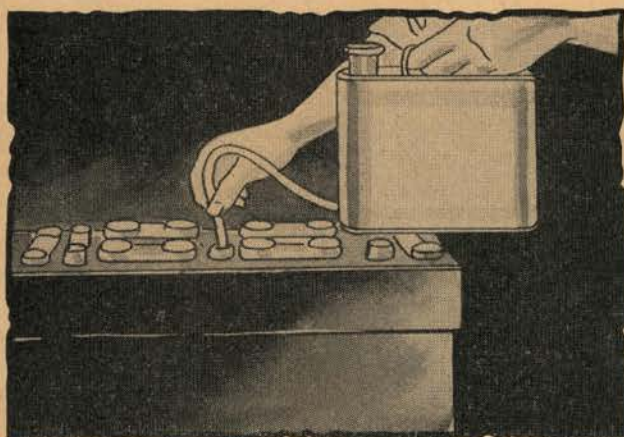
Flush cooling system thoroughly. Check thermostat. Inspect and replace hose connections if necessary. Fill radiator with clean, "soft" water. Add rust preventive if specified in Technical Manual.



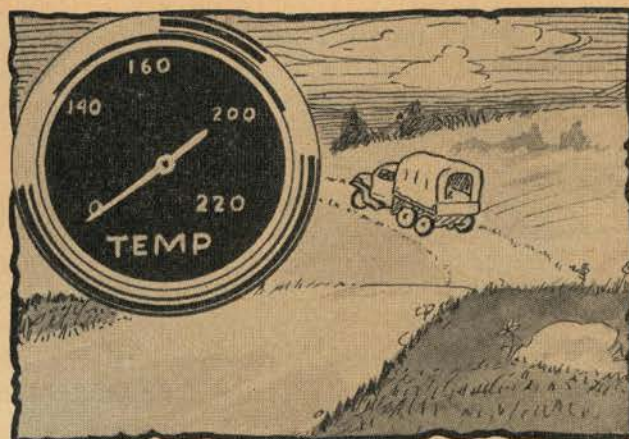
Remove insects and dirt from radiator exterior. Keep exterior of oil pan clean so heat can escape from oil and help cool engine. Service air cleaners and filters more often because of dustier summer air.



Check tension of fan belt and adjust. Belt operates water pump as well as fan and must be right. Inflate tires in morning when they are cool. If tire pressures increase during heat of day, don't deflate.



Replenish battery water more often in summer. It "boils" away faster. Never fill above specified level. Check timing and adjust exactly as specified. Late timing particularly can cause overheating.



Shift to a lower gear to speed up fan and water pump if engine overheats on hard pulls at slow speed in high gear. Keep an eye on the temperature gage. Take corrective action at first sign of overheating.



# Book Reviews

TEN YEARS IN JAPAN. By Joseph C. Grew. Simon and Schuster. \$3.75.

America's former Ambassador to Japan has drawn on material from three firsthand sources—his own day-to-day diaries, his personal and official correspondence, and his dispatches to the State Department—to tell the story of the decade of conflict, intrigue, and surprise that culminated in the inevitable tragedy of war.

Mr. Grew's own words best describe the aims of his book: "... to present to our people and, I hope, to the people of all the United Nations, a more accurately focused view of Japan than is now widely held, for only through a correct conception of that country and its people can we approach with intelligence the difficult problems which will have to be solved after our military victory is complete. . . . We have been presented for some years past with cumulative evidence of unmitigated subtleties, trickery, brutality, and cynical faithlessness on the part of the Japanese military caste and machine. . . . The present book will not have served one of its purposes, however, if it does not bring home to my readers the fact that there are many Japanese today who did not want war, who realized the stupidity of attacking the United States, Great Britain and other United Nations, and who did everything in their power to restrain the military extremists from their headlong and suicidal aggressions."

Whereas the American public is more or less familiar with the background and temper of their German enemies, they are not so well versed on the subject of the Japanese. Ambassador Grew has spared no effort to give a complete and fair account of his experiences in Japan, in order that his compatriots may envision the caliber of the enemy they are facing. *Report From Tokyo* was a brief, informative volume. *Ten Years in Japan* is a comprehensive book that should be thoroughly digested by all who wish to understand the problems of the east, not only as they affect us in this war, but as they will undoubtedly influence us in the future.

NEWS OF THE 45TH. By Sgt. Don Robinson with art by Sgt. Bill Mauldin. University of Oklahoma Press. \$2.00.

Sergeants Robinson and Mauldin have collaborated to produce one of the most down-to-earth stories of the soldier in training and at war yet published. It is a little premature to state that they are in Ernie Pyle's class. That takes years of hard work. But Mauldin as a cartoonist, and Robinson as a writer, are certainly well on the way to making names for themselves in human reporting. They are keenly sensitive to the average man's reactions and have a delightful sense of the ludicrous that combine to make their book both realistic and entertaining.

If you enjoyed *Here Is Your War*, you will enjoy *News of the 45th*.

THE GERMAN ARMY. By Herbert Rosinski. Infantry Journal. \$3.00.

Dr. Rosinski was a lecturer in Naval and Military Theory at the Naval Staff College in Berlin from 1932-36. After leaving Germany under duress of the Nazi Party, he lectured at Oxford in 1937 and was a member of Professor E. M. Earle's famous seminar in military subjects held at Princeton from 1940-41.

*The German Army* is a rewritten and expanded edition of Dr. Rosinski's earlier book published in England in 1939. It gives the historical background, organization, doctrines, training, strategic ideas and tactics of the German Army. It is a less detailed account of much the same material incorporated in *Axis Grand Strategy*; however, for men who have to take note of the weight and size of a book, Dr. Rosinski's volume has a marked advantage.

BATAAN: THE JUDGEMENT SEAT. By Lt. Colonel Allison Ind. Macmillan. \$3.00.

Colonel Ind's account of the conditions existent in the islands prior to Pearl Harbor as well as his story of the retreat to Bataan are vitally important additions to our knowledge of that action. There is no evasion in this book, it is a straight-forward record of what was and was not available, a clear and unvarnished picture of what occurred.

Out of the discouraging recital of over-confidence and lack of preparation rises the figure of General "Pursuit" George, then Colonel George, who by dint of his personality impelled his men to the impossible. It is a glowing picture of a hero's hero and his tragic and untimely death.

The author is a capable writer and has produced much more than a mere record of military events. He has created a living history of the men who fought on Bataan.

ATLAS OF GLOBAL GEOGRAPHY. By Erwin Raisz. Global Press. \$3.50.

With the rise of air power, global geography has changed. Distances are now marked as the plane flies and the shortest distance between two points has become an arc on the contour of the globe. This new vision is the key to the *Atlas of Global Geography*.

Erwin Raisz' book is a fascinatingly informative volume. It not only contains a quantity of valuable data on flying routes, air currents, ocean currents and related subjects but brings into focus the global point of view of the modern world, with pictorial commentaries on poverty, disease, hunger, inaccessibility, illiteracy, and other major problems.

The new trend toward the use of pictures and maps where possible for reference and teaching is admirably exemplified in this beautiful product of the cartographer's art.



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An elementary book covering the fundamentals of map reading. Includes information on problems of map making, distance, direction, elevation and relief, contour lines, profiles, construction of maps, aerial photographs, and special maps, explained in an easy-to-follow form using only simple arithmetic. By Samuel L. Greitzer, \$1.60.

**MILITARY APPLICATIONS  
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Brings together the problems in all branches of the armed forces which can be solved with a background of high school mathematics. Explains practical military problems by means of examples and exercises, and shows how the various activities involved are related to each other in combat operations. By Paul Hanson, \$3.00.

**THE THERMODYNAMICS OF FIREARMS**

The first book in English to place interior ballistics on a sound theoretical basis by means of thermodynamics. Covers the behavior of propellant explosives in firearms in an elementary manner geared to the practical problems of the interior ballisticians today. By Clark Shove Robinson, \$2.50.

**PERSONAL LEADERSHIP FOR  
COMBAT OFFICERS**

A concise manual of objectives and methods for leaders of tactical elements, combat teams, and fire units. Provides a comprehensive framework for an officer's attitude and gives him the methods he will use in his work. By Prentiss B. Reed, \$1.50.

**MILITARY CORRESPONDENCE  
AND REPORTS**

Brings together regulations and directives of the Army regarding written forms, including the presentation of reports, writing of letters and messages, and preparation of orders, bulletins, and memoranda. An authoritative pocket guide-book and style manual on Army writing practices. By A. C. Howell, \$1.50.

**MAP INTERPRETATION WITH  
MILITARY APPLICATIONS**

A clear, concise treatment, requiring no previous knowledge of geology, of the geologic fundamentals underlying the most effective military interpretation of maps and aerial photographs. Explains the characteristics of contour maps and aerial photographs, describes landforms of all varieties, and shows how they appear on maps and in photos, and points out significant military features. By William C. Putnam, \$1.25.

**THE MILITARY STENOGRAPHER**

Offers practice material for military stenography, with Gregg shorthand outlines for military terms and phrases, solid-matter dictation, and glossary. Covers, with definitions and outlines, court-martial proceedings and terminology, military ranks and functions, and complete service phraseology. By Queena Hazelton, \$1.00.

*Order these books from*

***The Cavalry Journal***

1719 K Street N.W. WASHINGTON 6, D. C.

**DICTIONARY OF ORDNANCE TERMS.** By H. Strom. Frederick Ungar Publishing Co. \$5.00.

There has been considerable demand for foreign language dictionaries covering military subjects. Mr. Strom has coordinated in one volume the terms used in connection with ordnance—arms, ammunition, explosives and other war matériel—in English, French, German, Italian and Spanish.

The first section gives the words in all five languages with an identification number for each group. Indices are given in each language with page and group reference numbers that enable the user to look up a word in any language by taking the page and group number and finding the translation in each of the other four languages.

1 1 1

**MILITARY MAPS AND AIR PHOTOGRAPHS.** By A. K. Lobeck and Wentworth J. Tellington. McGraw-Hill Book Co. \$3.50.

This text is designed to do duty both as a basis for a course of instruction and as a reference book. Its chief purpose is to combine under one cover the information necessary for an elementary course in topographic drawing and a revised use of symbolic drafting as it has recently been developed by the allied engineering industries.

Symbols and maps are reproduced to practically the same size that the student should draw them. Directions, included for use in compiling various kinds of maps, thus eliminate the necessity for a large amount of desk instruction. Ruler, Schunemunk and Mannheim maps are enclosed.

1 1 1

**ARCTIC MANUAL.** By Vilhjalmur Stefansson. Macmillan Co. \$3.00.

This picture of the Arctic as it really is, by one of the world authorities on the subject, was originally prepared to offer the United States Army realistic advice on how to survive when stranded in that generally misunderstood region.

Mr. Stefansson begins with a discussion of our changing attitudes since the days of the Greeks, and discards many of the erroneous old-time ideas of the polar regions. His practical information covers the physical geography, climate and weather, light, animal and insect life, vegetation, shelter (how to build as well as how not to build a snow house), food and drink, clothing, health, diet and travel on land, water, and ice.

1 1 1

**26TH DIVISION.** Summary of Operations in the World War. Prepared by the American Battle Monuments Commission. Government Printing Office. \$1.25.

This account of the participation of the 26th Division in World War I, covers activities of the division through May 1919. Bound in the book is a general map of western Europe. Detailed maps of the various actions in which the 26th Division took part are contained in a pocket within the book. It is an excellent record, in convenient form, and the maps are extremely good.



JAPAN, ITS RESOURCES AND INDUSTRIES. By Clayton D. Carus and Charles L. McNichols. Harper and Brothers. \$3.50.

The authors of this comprehensive study of Japan's resources have realistically faced the problems that will be generated in the postwar world by the fact that for years the Japanese Empire has had the greatest industrial capacity in Asia. It is maintained that the security of the Pacific area depends on the utilization of the human, geographic and industrial resources of these islands. This is predicated upon five conditions: complete military defeat and occupation; Allied administration during reconstruction; assurance that Japanese industry, as reconstructed, cannot rebuild her war machine; readjustment of social values; and the abolition of subsidies to uneconomic industries.

There is important material here for possible administrators of occupied territory in the Pacific and for all students of foreign affairs.

✓ ✓ ✓

TRIUMPH OF TREASON. By Pierre Cot. Ziff-Davis Publishing Co. \$3.50.

Pierre Cot has served France and fought Fascism through a long career. As a captain in the French army (1914-18) he received the *Croix de Guerre*. He has served the state as Undersecretary for Foreign Affairs and Minister of Aviation, and the world as President of the International Peace Conference (1936-40). An exile from Fascism since 1940, he has recently joined the new French Consultative Assembly in North Africa.

A number of participants in the military collapse have written of the fall of France, but this is the first book by a government official on the disintegration of the state that was primarily responsible for the military catastrophe.

Whether or not the reader agrees with M. Cot in his analysis of the present National Committee of Liberation, his absolute sincerity and scrupulous efforts to be fair make his book a truly valuable one. He comments:

"The 'citizens' have taken up arms. 'Liberty guides their steps.' If they alternate the *International* with the *Marseillaise*, it is to signify to the world that their sacrifices will serve the interests of humanity as well as the liberation of France."

✓ ✓ ✓

THE NETHERLANDS. By Hendrik Riemens. Duel, Sloan & Pearce. \$4.50.

The Dutch people in their own land have always commanded the respect of the civilized world. Mr. Riemens, Commercial Secretary of the Netherlands Embassy in Washington, deftly interweaves the story of his nation's history and culture with that of their commerce and expansion abroad.

In the handling of the expansion of the East and West India Companies Mr. Riemens permits himself to overlook the fact that his reader may have an analytical mind, and may not be converted to the idea that the end justifies the means. On the whole, however, the book is an interesting introduction to the Dutch, and reveals much of the national psychology, particularly in relation to the war.

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Map Reading for the Soldier .....	R-12	1.00
Manual for Instruction in Military and Aerial Photographs By Maclean and Olson .....	R-11	1.75
Elementary Topography and Map Read- ing. By Greitzer .....		1.60
Military Maps and Air Photographs. By Lobeck and Tellington .....	Q-16	3.50

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The Chronicle:		
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### MAGAZINE MART

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PRIVATE BREGER'S WAR. By Dave Breger. Random House. \$2.00.

Those who are already familiar with Private Breger's reactions to camp life in this country will undoubtedly want to see what happens to this incorrigible personality in Britain and on the war fronts. If there are those who have not yet discovered this naïve example of humanity, it is suggested that his early training be investigated before his more recent amusing experiences. He is still the exasperation of noncoms and officers.

1 1 1

BASIC MATHEMATICS FOR WAR AND INDUSTRY. By Daus, Gleason and Whyburn. Macmillan Co. \$2.00.

MILITARY APPLICATIONS OF MATHEMATICS. By Paul P. Hanson. McGraw-Hill Book Co. \$3.00.

The first of these books has been presented with the idea that the same principles of elementary mathematics are needed for the armed service, war industry and ordinary civilian activities. Chapters cover arithmetic, algebra, geometry, plane trigonometry, and solid geometry and spherical trigonometry.

*Military Applications of Mathematics* serves as a refresher course in the fundamentals of mathematics and a course to prepare students for definite activities in military life. It brings together in one volume the problems likely to be met that can be solved with a background of high school mathematics. The problems are grouped under Army and Navy classification—Maps and Map Reading, Field Artillery, Air Navigation, and Miscellaneous.

1 1 1

OUR EQUINE FRIENDS. By Wayne Dinsmore and John Hervey. Horse and Mule Association. \$.25.

DOGS FOR DEMOCRACY. By Thomas Young. Bernard Ackerman, Inc. \$1.00.

*Our Equine Friends* is a small practical pamphlet giving a brief coverage of the types of equines, usages, conformation and character of the different species and results of cross breeding. Its purpose is primarily to encourage an interest in breeding in order to increase and improve the waning stock in this country.

*Dogs For Democracy* tells in pictures and text the story of what dogs are doing in the war of today. It is a delightfully presented little book, and will find wide interest among those who have given up their dogs to the army.

1 1 1

STICK AND RUDDER. By Wolfgang Langewiesche. Whittlesey House. \$3.75.

Wolfgang Langewiesche, author of *I'll Take the High Road* and *Light Plane Flying*, has written an analysis of the art of flying based on his own flying experience. He believes that the difference between an experienced flyer and an inexperienced one is a matter of images—the experienced flyer “carries in his head truer, more vivid images of the airplane and of ‘what really goes on’ when he flies it.” This conviction has led him to write a most comprehensive description of flying.



# Here Are This Month's New Books of Current Interest

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- Q- 2 **Arctic Manual.** By *Vilbjalmar Stefansson*. Information on subjects of interest to those who expect to spend some time in the Arctic. . . . . \$3.00
- Q- 3 **Atlas of Global Geography.** By *Erwin Raisz*. A new atlas for the coming air age. . . . . \$3.50
- Q- 4 **Bataan.** By *Lt. Col. Allison Ind.* The Story of the air corps in the Philippines. . . . . \$3.50
- Q- 5 **A Bell for Adano.** By *John Hersey*. An Italian-American major tries to rebuild the life and spirit of a war-torn Italian village. . . . . \$2.50
- Q- 6 **Border Command.** By *Carl Coke Rister*. The life of General Philip Sheridan from the close of the Civil War until his death. . . . . \$2.75
- Q- 7 **Dictionary of Ordnance Terms.** By *H. Strom*. Dictionary in English, French, German, Italian and Spanish. . . . . \$5.00
- Q- 8 **Dogs for Democracy.** By *Thomas Young*. What the war-dog is doing. . . . . \$1.00
- Q- 9 **The Dyess Story.** By *Lt. Col. William E. Dyess*. The complete eye-witness story of the death march from Bataan. . . . . \$2.00
- Q-10 **Ernie Pyle in England.** A portrait of England at war during 1941. . . . . \$1.49
- Q-11 **The German Army.** By *Herbert Rosinski*. An account of the historical background, organization, doctrines, training, strategic ideas and tactics of the German Army up to 1942. . . . . \$3.00
- Q-12 **Is Bombing Decisive?** By *Capt. F. O. Miksche*. A study in the organization and tactical employment of modern air fleets. . . . . \$1.75
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- Q-15 **Military Applications of Mathematics.** By *Paul P. Hanson*. A refresher course in fundamental mathematics as applied to problems in military life. \$3.00
- Q-16 **Military Maps and Air Photographs.** By *A. K. Lobeck* and *Wentworth J. Tellington*. A practical course of instruction and reference book developed by the allied engineering industries. . . . . \$3.50
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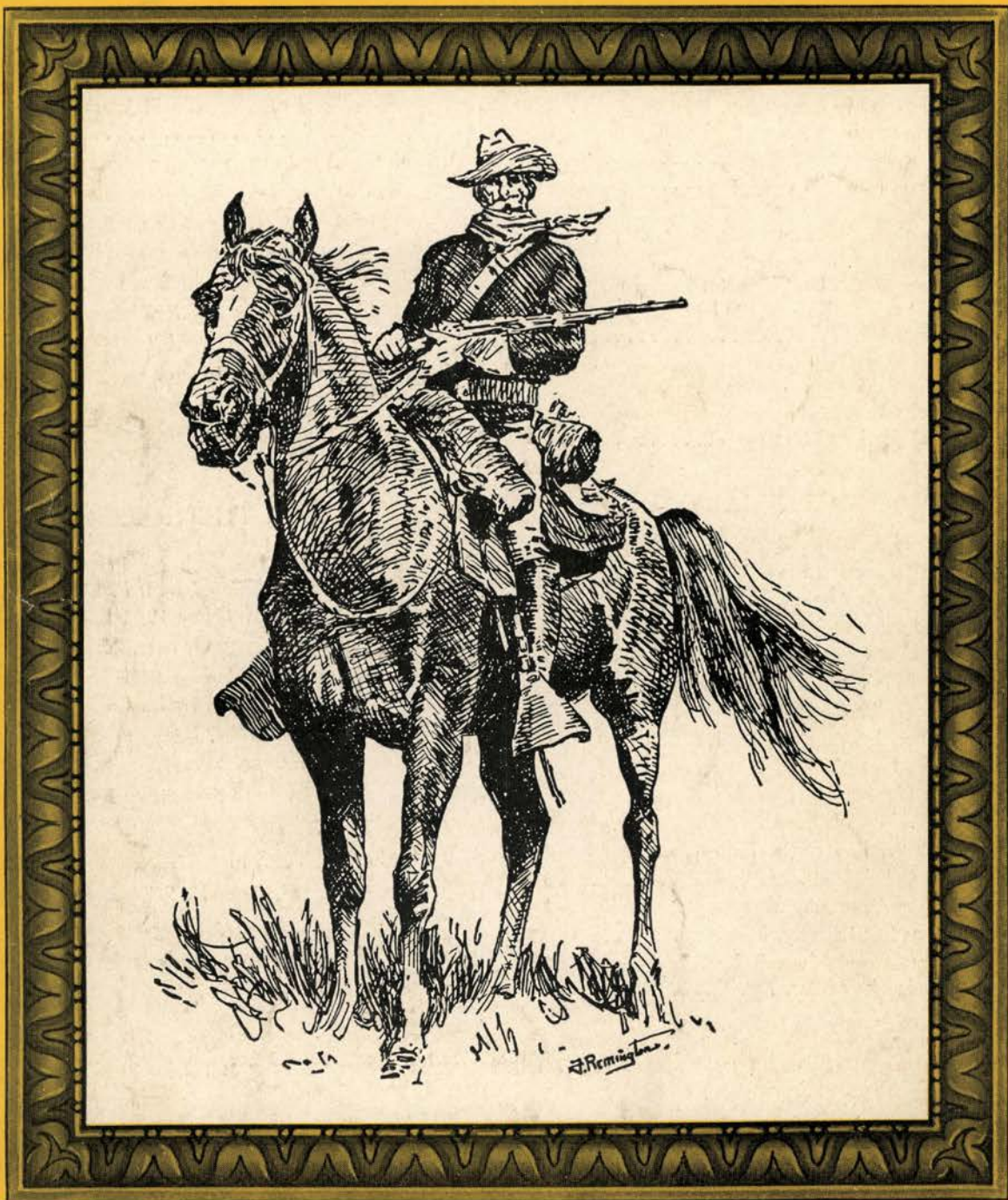
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# TRIPHIBIOUS TRI

by Brigadier E. C. Anstey, D.S.O.\*

**T**RIPHIBIOUS warfare is not merely amphibious warfare with an air component added. As developed today and exemplified on the beaches of Normandy it is far more than that. The recent invasion of Europe differs as much from an overseas operation of the last century as the teamwork of a football match differs from that of a relay race. One is the consecutive activity of two agents with a brief communal overlap; the other is the intimate relationship of a close marriage partnership.

Weave the operations of a mighty air force into those of the land and sea forces—coöperative, sometimes alternating, often contemporary, and always intimately related—and it is possible to get some analogy with the remarkable development of warfare that is called triphibious. Nothing comparable has been seen in any previous war.

## FORMER CONCEPTION OF ARMY-NAVY RELATIONSHIP

The ships which bore troops to the Crimea or down the Potomac to the Yorktown Peninsula and the James had fulfilled their task when the men reached the shore. The short range and the primitive gunnery of the ship's guns forbade much assistance to the fighting on land.

Even in the Dardanelles, where the British fleet silenced Turkish batteries and gave some support to the landing and further fire in support of the troops

\*Military Correspondent of the *Sunday Times* and *Daily Sketch*, London.

D Day on a Normandy beach. Men and matériel pour ashore from transports in background. Dead and wounded are lying on reef where they fell from German fire.

British Official Photo



ashore, the effectiveness of the support was limited by the naval gun control system of the period. Gun sights designed to engage targets at sea level could not readily be adapted to the needs of land warfare on an undulating shore. The art of indicating land targets and of firing indirect at a hidden enemy had not yet been developed.

Aircraft, radio and the internal combustion engine, which makes the first two possible, have revolutionized war. That, of course, is not trite. But more than those factors was needed for the development of triphibious technique as it is known today.

## LESSONS FROM THE PACIFIC

The conceptions which bore such rich fruit in the Allied invasion of France derived directly from the experiments, experience and achievements of Americans and Australians in the Pacific. From the landing at Guadalcanal onwards, the extraordinary spirit of brotherhood and unity which attained such perfection there has resulted in an interplay of activity by the three services which is continuous and which has consequently affected not only the tactics and the technique of an overseas operation, but the strategy as well.

The American and Australian experiences in the Solomon, Gilbert, Marshall, and Admiralty Islands furnished the background of a perfect school for the successful invasion of Normandy. Fighting in an archipelago is the quintessence of triphibious warfare for the reason that throughout the battle the navy continues to participate as an active element of combat. This continued coöperation appears in its highest form in the attacks on atolls in the Pacific, where the ground surface is so small that it is never out of range or observation from the sea.

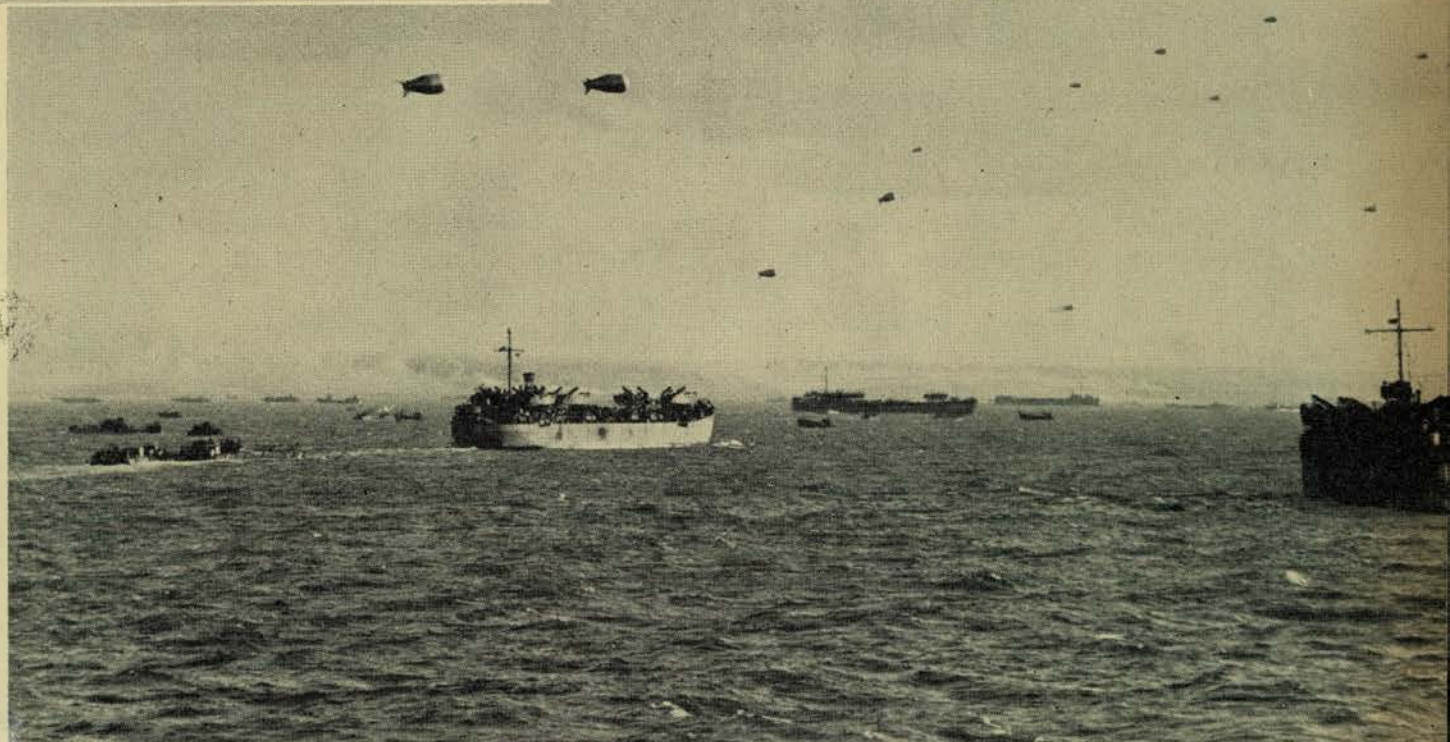
## DEVELOPMENT OF TRIPHIBIOUS WARFARE IN EUROPEAN THEATER

Such conditions have not been present to the same extent elsewhere. Britain's navy helped Montgomery on many occasions with gun and monitor fire on his extreme right flank in the long advance from El Alamein to Tunisia, and supported the initial landings in Sicily. At Salerno when the enemy's armor came within view, naval fire smashed back the most dangerous tank attack that the Germans made.

In France the supporting naval gunfire was brought to a much higher pitch. Great as the value of the Pacific experience has been, the scope and conditions of



# UMPH



U. S. Navy Photograph

Like a low-hanging bank of fog, the French coast can be seen in the background as a huge Allied task force moves in against the foe on D Day plus one. Battleships, destroyers, landing craft of all kinds and sizes participated in landings.

the operations in Europe demanded special study and treatment. The size of the invasion armada immensely complicated the naval problem. The cramped conditions in a small country like England made the assembly and dispatch of armies more difficult. And the fixed defenses of the French coast had been developed to a pitch of complexity unmatched in the Pacific.

## COLLECTION OF INFORMATION FOR INVASION

The first direction in which the coöperation of the services was necessary was in the collection of information about the problem in all its aspects. Much was learned, of course, of German defensive measures from the attacks on Dieppe and St. Nazaire. But detailed knowledge of the whole coastline within air cover of Britain was necessary, and the Air Forces flew thousands of sorties to obtain the enormous string of photographs which eventually covered the western shores of France and their land approaches.

Admirable as these photographs were they could disclose little about the nature of obstacles in and out of the water, the minefields and the geological details of the sea bottom, the beaches and the hinterland.

Guided by the photos taken from the air, parties of engineers were landed by the Navy without discovery at various points of the coast eventually chosen for attack. They examined the obstacles without discovery, probed the soil, tested the going for tanks or track vehicles, and came back with specimens of sand and soil which allowed essential precautions to be taken to prevent vehicles being stuck as they landed on certain beaches.

## THE STRATEGIC PLAN

With all this mass of information so laboriously collected by the combined exertions of the three services it became possible to make a strategic plan. The extent to which triphibious warfare affects strategy at once became apparent. Formerly the main consideration was to find suitable landing beaches conveniently placed for the land objective that the army wished to take.

Now the objectives themselves had to be considered from three angles. The soldier wishes to land where he can bring the enemy's army to battle in unfavorable conditions for the enemy and in the most favorable conditions for himself. He demands that his air force



## LOGISTICS

should achieve superiority over the battle area before the operation starts and should maintain it throughout. And he requires the largest possible force flung ashore in the shortest possible time and supplied with all the requirements of a great army in the field.

In the Pacific where the land objectives were atolls and islands of small extent, or countries where the difficulties of nature confined fighting to restricted areas, the initial air superiority could be attained by carrier-borne aircraft.

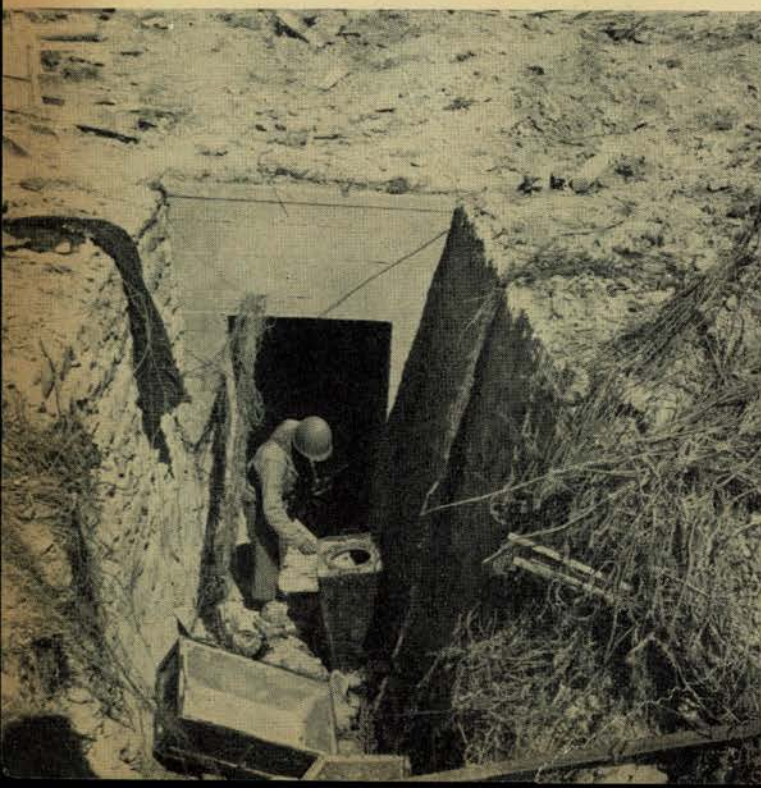
On a continental battlefield with its deep hinterland, covered with a maze of enemy-controlled roads and railways, ammunition dumps and arsenals of military stores, with its deep defenses and powerful coast batteries, its minefields and its radio installations—all of which had to be destroyed or damaged seriously before a landing could be launched—it was essential that the theater chosen for invasion should be within fighter flying reach of Britain.

In the next place, the area chosen had to contain airfields or landing grounds, or sites which could readily be converted into landing strips in order to provide the essential air cover and support for the battles after landing.

Third, it was necessary that the chosen theater afford sufficient suitable beaches within cruising range of the specialized landing craft.

Last, there had to be a deep-sea port nearby which the army could capture within a reasonably short time and relieve the strain on the naval personnel necessitated while landing all men and matériel on beaches. In the end, a port is essential for landing the quantity of heavy paraphernalia that armies eventually require.

Ahead of the Army of Liberation, Allied Air Power pounded German coastal fortifications, made gaps in Hitler's concrete defenses. Here a U. S. soldier examines one end of a connecting tunnel between strong points and underground fortresses, wrecked by bombers attacking invasion areas in northern France prior to D Day.



It is not necessary to expend here on the immense complications to the working out of such plans afforded by the problem of shipping. The claims of the maintenance of Britain, the operations in the Mediterranean and the Pacific, the supply of oil to the navies and air forces, the transfer of American forces to Europe and the armada needed for the invasion itself provided a whole series of problems in which all three services as well as many civil ministries were intimately concerned. The combined operations of the Allied navies and air forces in combating the U-boat menace with such wonderful success were of paramount importance in clarifying the dubious merchant shipping situation.



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Shells from Navy guns knocked out this German fortification overlooking a Normandy beachhead point. The installation was soon converted into an Allied Command Post.

As D-Day approached the invasion troops began to move into assembly areas from which they were to be embarked. The navy had chosen the embarkation ports and beaches, assembled the craft and fixed the times when loading must be completed. The army, working hand in glove with the navy, prepared the loading tables and timings and moved the troops in their right order to the right places. And the air forces maintained constant watch and ward over all.

## AIR-NAVY PREINVASION PREPARATION

But it was in the landing operation itself that the most perfect coordination of the activities of the sailor, the soldier, and the airman was displayed. The pounding of the defenses from the air, the suppression of all enemy air interference, the cutting off from the interior of the area under assault and the provision of last minute information about enemy movements, carried out so brilliantly by the combined air forces on a colossal scale, were supplemented by the terrific fire of the fleet's guns directed with an accuracy and rapidity which has never hitherto been attained.





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This view from the interior of a large German coastal defense gun emplacement shows German gun crew killed and gun knocked out by Allied artillery and naval guns. Action took place during the American advance across the Cherbourg Peninsula, which isolated the German garrison.

Greater progress has been made in this aspect of naval gunnery than in any other direction. Nowadays artillery officers using wireless, following the troops closely, can direct the fire of ship's guns with amazing success and quickness, and reports have been received of some phenomenal shooting on targets far inland which has had an immense influence on the fighting. The coöperation of the warships with the army has been extended from targets they could see on beaches to the limit of their range inland. But the full and constant exploitation of this invaluable naval gunnery would have been impossible if the air forces had not afforded the ships the immunity from air attack which they did.

#### NAVY-ARMY ON THE BEACHES

On the beaches too the intermarriage of navy and army is closer than it was. The dividing limit of responsibility has of course always been high-water mark. Formerly, landing parties leaped from boats as they grounded and splashed ashore, and the naval responsibility ended. The art of waterproofing men and vehicles and the development of specialized landing craft have altered that.

Disembarkation from these barges into deep water has become an art which the navy was vitally concerned that the army should learn. Accordingly, naval officers had to take a hand in the training of the soldiers. Moreover, army operations begin in deep water where the enemy's mines and obstacles are located. The engineers, who have to lift the mines and destroy the obstacles, were dependent to a very great extent on the way the naval men handled the boats or barges which brought them inshore. The whole operation, which is one of the most difficult in war, and on the performance of which the success of the great invasion of Europe greatly depended, was a fine example of the collaboration attained by the navy and army in the study, preparation and execution of a combined operation.

#### ARMY-AIR IN AIR-BORNE LANDINGS

While the soldiers and sailors were working hand in hand in this fashion on the beaches, the air force and the army were collaborating brilliantly some miles inland, in the biggest and most ambitious airborne operation yet attempted. The analogy with the sea-borne force was a very close one. Instead of the navy, the air force carried the troops, either as parachutists or in gliders, and troop-carrying transports, watched over them during their journey and acted as their artillery after landing.

The complicated problems of assembly, of timing departures, of forming up convoys and of landing them accurately to time and place, solved in such perfect fashion by the navy, were closely paralleled in the air-borne part of the operation and were solved with equal brilliance.

For conception and execution the part played by the air-borne divisions in the landings in Normandy has never been equalled. More credit rests on those divisions for the success of the invasion than has yet been realized. Their part was not finished with the landing, any more than the participation of warships in the battle ended with the first beaching.

#### TRIPHIBIOUS TRIUMPH

As these words are written, United States troops are fighting their way into Cherbourg. Ships of the British and United States Navies are pounding the port's defenses. Bombers rain their missiles on the great concrete-emplaced batteries. And as the Americans fight their way forward, their British and Canadian comrades hold the German panzer divisions in their grip and so protect the American rear.

The fall of Cherbourg will be a triumph for all three elements of the service—land, sea, and air—acting as a perfect triphibious team under the inspiration of General Eisenhower and the technical leadership of General Montgomery.

Troops cautiously pass a burning German pillbox two miles from Cherbourg. Dead Germans lying outside the blasted enemy stronghold are grim testimony to the fierce fighting before the outer defenses of the port were breached. Cherbourg fell to troops of the U. S. First Army June 30. 54,000 prisoners, many supplies were taken.

Press Association, Inc.







From this invasion beach on the coast of France, 8 June 1944, masses of men and equipment pour inland from the various landing craft off shore. From D Day on, more than 3,000 vessels plied across the English Channel. Naval fire knocked out enemy

guns and tanks. Planes formed a protective screen, ferried airborne troops. Ground forces moved inland, over bodies of water, under water obstacles, over bodies of water.

American troops take a "breather" in the comparative safety of a concrete wall. Others move over the crest to the interior. Casualties on most beaches were heavy.

LST grinds ashore, spews forth four jeeps and a large amount of matériel flowing onto the beach.





Stretcher-bearers wriggled forward and dragged wounded men away, but never showed themselves against the skyline.

Now the enemy was gaining confidence from the stillness. Smelling no danger, his loping advances were longer, his periods flat on the ground of only a few seconds duration. He came on fast, kept on coming until he was about 100 yards away. Then at a pre-arranged signal every automatic weapon, every rifle in the paratroops' line opened up. It was a roar that set your teeth chattering with shock.

You suddenly saw the Germans grimacing wildly clutching their bodies, throwing up their hands, then falling by the dozens into the corn. Then they all flung themselves down and the British paratroops continued their fire.

A rain of bullets surged across these 100 yards of French farm land and battered into the huddles on the grass. The earth was scuffed up in showers of corn and went down as if under a flail. But the Germans weren't beaten yet. One of their officers rose to his feet and called to his men, and those still not wounded charged once more. This time the paratroops held their fire even longer, and it was 25 to 30 yards now when the small arms barrage hit the enemy.

With cool, superb and absolute discipline, fingers squeezed triggers almost simultaneously, and down in writhing heaps went the Germans again. And now the remnants who remained alive turned and began to flee.

Bullets chased them across the field as they raced for the woods. But only a few made that shelter, for now the shells and mortars came into play and plastered a river of steel between the enemy and the sanctuary for which he was racing.

By 1 o'clock it was all over, and the dropping zone was littered not only with gliders and containers but with hundreds of enemy dead and enemy wounded.

Back in the woods those Nazi troops who had made it were joined by reinforcements, and there, among green shadows, they re-formed and planned how to get out.

But they were not to be given the chance. All through the woods hidden in trees, ditches, and slit trenches the camouflaged British paratroops were waiting for them. Around 4 o'clock a squadron of Sherman tanks rumbled up to where most of the Germans were concentrated and poured a five-minute barrage from their big guns into the trees.

The Germans turned and began to retreat. Their retreat was the wrong way for them and once more it was massacre. Sten-gun bullets hit them from such range that they were torn to pieces. The paratroopers could touch their victims as they opened fire.

The terrified Germans threw up their hands and tried to surrender. If they were in time they were allowed to. Those who waited until too late got a burst that flung them to the ground. Only a few snipers

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## —The story of how a British airborne unit annihilated a German regiment during an early phase of the invasion of France.

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were left by Saturday evening, and their fire was sporadic.

I went into the woods to see the flotsam and jetsam this short but bloody war had left. Everywhere was death—Nazi death. At least 400 had been killed and nearly 2,000 made prisoners. And in breaking the whole of a German regiment and capturing its commander, British losses did not number over 50 all told, including wounded.

German prisoners on their way back to a Prisoners of War cage pass advancing British airborne troops, who are carrying equipment in collapsible trailer shown at lower right.





# THE

## —An Under



*Pictures from the Film "Fighting Men of the Maquis."*

Among the Maquis, firearms of any kind have been so scarce and so hard to obtain that the penalty for loss was death. Note the number of unarmed men in above picture.

These young Frenchmen joined the Maquis to resist the criminal laws of deportation. In taking these pictures the photographer did not have time for lighting effects or timing. They are meant to show the spirit and discipline of boys who prefer the Maquis' dangerous life and innumerable daily risks to imprisonment in German factories.



AS the day of invasion approached and French liberation grew nearer, French resistance took on a new aspect. For several months prior to the Allied landings on the coast of France, organized patriot guerrillas openly fought the German army and its accomplices—the French Militia, and the Vichy Gardes Mobiles.

The French Militia is a Nazi-directed police organization under the direction of Joseph Darmand, Minister of the Interior in the Vichy cabinet. It was especially created to combat French patriots or to denounce them to the Gestapo. It is armed by the Germans and takes its orders from them.

The Gardes Mobiles is a French police organization which existed before Vichy came to power. It takes its orders from Vichy, and it is one of the most hated police organizations in France on account of its activities against those Frenchmen who have refused to abandon the fight against the Nazis.

In defiance of these Nazi controlled collaborationists, there gradually developed a patriot underground organization known as the Maquis, which recruited patriots of all political parties—men who refused to bend beneath the Nazi heel and become slaves in German industry. Many recruits were ex-army officers of the

defunct Vichy armistice forces. All had one common enemy and one common goal.

The name "maquis" was borrowed from Corsica where it designates a kind of very thick underbrush in which Corsicans used to hide after they had participated in some act of *vendetta*—family feuds. During the years of Nazi occupation French patriots have had to hide away in the mountain caves or in the snows of the Alps and the Pyrenees to escape death or deportation by the Germans, and to organize as an army—the French Underground Army which is now playing an important rôle in Allied operations in France.

The Maquis is divided into numerous groups, as a rule small in number in order to facilitate the problem of supplies both in food and arms. In some cases a group may be 200 strong. Each group has had to establish its own defense and warning system, but often when necessary several groups have been called to act together. These groups have been scattered all over France and their liaison and organization were one of the most difficult tasks the leaders of the French Underground had to assume.

A man became a member of the Maquis only after going through a specialized course involving a very high moral training, for any member of the Maquis who turned out to be a stool pigeon would endanger the lives of his companions. Another reason for that

\*For obvious reasons, neither the source of this material nor the name of the author can be divulged at this time. Information contained, however, is authentic.



# FRENCH MAQUIS\*

## Ground Army Prepares for Conquest and Liberation

particular training was that once captured by the Gestapo, the chances of being tortured to reveal information before being put to death were—and still are—very great. Every day incredible tales of the torture of men as well as women have come out of France through sincere and reliable sources.

### INSTRUCTIONS TO THE MAQUIS

Admission to the Maquis entailed severe tests of character, endurance, courage and loyalty. Following are excerpts taken from the instructions regarding requirements:

"Every man who applies to join one of the united resistance underground groups is considered to be . . . a volunteer member of the guerrilla forces and an auxiliary belonging to the French army.

"He agrees to submit to the very strict discipline of the underground organization, and to obey without question all orders received. . . .

"He must give up any attempt to communicate with his family or his friends until after the war. He must keep absolutely secret the location of the hide-outs, the identity of his leaders and his comrades. He knows that any infringement of this order will be punished by death. . . .

" . . . He will respect the private property and the lives of civilians—whether they are French, Allied, or neutrals; not only because the existence of the underground movement depends upon good relations being maintained with the population, but also because the men who have joined the underground are the élite of the nation and they should set everyone an example and make proof of bravery and honesty, which are the chief traits of real Frenchmen.

"In order to feed and clothe members of the underground, we may be compelled to order the looting of shops, of the Vichy police stores, and even food and clothing from the depots where the societies for National Relief and Prisoners' Aid are keeping reserves.

"Such raids will be limited to the minimum and made only when it is absolutely unavoidable because our men must at all cost be kept alive. They will be performed by our best men who have been chosen with particular care, because of their high moral character. As soon as we have enough weapons, we shall carry out such operations against the stores of the army of occupation exclusively.

"It goes without saying that no religious or political distinction is made when admitting members.

Catholics, Protestants, Moslems, Jews, or atheists, royalists, radicals, socialists, or communists—all Frenchmen who want to fight against our common enemy are welcome in our ranks. Each volunteer promises to respect the opinions and the beliefs of his comrades, tolerance being one of the finest virtues of Frenchmen. Only Hitler's flunkies have tried to invent fanaticism in France. Not only will any man in the underground respect the opinions and beliefs of his comrades, but he will be a devoted friend to them, a true brother-in-arms. The safety of all depends on this, and it is the only thing which makes existence bearable in resistance hide-outs.

" . . . No wounded man must ever be abandoned. The dead must be carried off and given decent burial whenever this is humanly possible.

"A volunteer in the underground is furnished with weapons only when his powers of endurance, his training and his obedience to discipline have proved him worthy of receiving any of our very rare, and therefore very precious, guns. He must take the greatest care of a gun, keep it scrupulously clean, have it within reach, or in safe hands except when he has to entrust it to the camp gunsmith. The losing of a weapon will be punished by death. This penalty is

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### Instructions to the Underground on D Day

LONDON, June 8 (U.P.)—Allied orders to the French underground went out yesterday by courier plane and radio broadcast for the sabotage of German communications and the immediate evacuation of towns about to be attacked by Allied bombers.

Other instructions were broadcast as "personal messages" to leaders of French resistance groups, in codes which they alone could understand, such as—"Jacques LaPorte please immediately deliver your fresh cakes to grandmother in Paris"; "Madeleine the flowers which you planted have wilted," and "Roger your laundry will be ready Tuesday."

One immediate result, according to a Vichy report reaching here by way of Stockholm, was the blowing up at 42 points of the Lacluse-Nantua-Bellegarde Railway by French Partisans. This is one of the routes over which German troops in Italy and Southeastern France might be sent to the French Atlantic or Channel Coasts.

Demonstrations were staged by French patriots in Paris, Lyon, Marseille and other cities, featured by street singing of the French National Anthem. German authorities, fearful of using German soldiers against the crowds, called out the Vichy militia to quell the manifestations.

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harsh, but obligatory for the safeguarding of everyone.

"A volunteer must keep his belongings and his person as clean as possible. His physical and moral health depend on this, and they are valuable for the Nation's salvation. Every member of the underground is an enemy of Marshal Pétain and the traitors who do his bidding.

"France is alive and will continue to live."

#### ARMS AND OPERATIONS

In spite of its increasing potentiality as a war factor in the liberation, the Maquis had great difficulty getting even partially armed. At first it had to capture its arms from the Vichy stocks, the gendarmes', or even the German army stocks or personnel. In the regions which were under Italian occupation, the Maquis captured also some of the Italian army's weapons. The possession of arms from several armies, of all caliber, and of practically all descriptions, made a genuine puzzle of the problem of supplying armament to the Maquis. Later, arms came from the Allies—arms of a type more convenient to hide and more properly adapted to the guerrilla warfare—the principal rôle to be played by the Maquis.

Living in the country, the Maquis found it necessary to rely for its food supplies on the local production—or on the local German or Vichy stocks. Often one of the first operations of the Maquis was to raid a certain "Chantier de Jeunesse" depot to obtain shoes or food. The men began early to apply what they learned in their camps—security, warning system, liaison, etc. If

the first operation proved successful, the next raid was likely to be directed at a German ammunitions depot.

Some of the Maquis group may have received orders to blow up a bridge or a railway line, or to derail a train of German soldiers on leave. The Vichy and the Paris radios have often reported these activities. Sometimes also the Maquis has been directed to destroy factories working for the Reich—especially electrical plants—or, in the Alps, to blow up certain water pipes feeding the big hydro-electric plants, or destroy pylons supporting electric lines and thus make short circuits which have often caused damage to the power plants.

#### THE MAQUIS AS AN ARMY

The Maquis has occupied certain regions of France of considerable importance. Long before the Allied invasion, the German staff realized that fact and ordered operations against these camps of the Maquis. To wipe out the Maquis completely, the German General Staff estimated at one time that it would require from three to five divisions. An account of a typical fight which occurred in the spring of 1944 between the German army and the Maquis illustrates this point.

In the course of the second half of March the patriots, entrenched on the Glières Plateau in the Province of Haute-Savoie, were attacked by German troops in considerable strength. The men of the Maquis were finally overwhelmed by the attacking force after inflicting upon the Germans considerable losses. The fighting started early in February when the militia was ordered to clean up the region of the plateau. These operations,

Thousands of the Maquis have endured hardships and loneliness and braved attacks by the Vichy Militia and the Germans. Reasons of supply and security have necessitated that this great Underground Army train in small groups.





carried out on orders from Darnand, were a total failure.

During one of the first engagements, on February 12th, near Petit Bornand, a group of about 50 Gardes Mobiles from Chateauroux and the Cevennes region had to fall back with the loss of 11 men, including their commanding officer. This setback suffered by Colonel Lelong's troops was made complete in the engagement of March 13, when 200 soldiers of the Maquis under the command of Lieutenant Morel, a former instructor in the Military School of St. Cyr, came down from the Glières Plateau, attacked the post of the Gardes Mobiles at Entremonts, and took 60 prisoners, including two officers.

Thereupon the German troops, which had surrounded the Glières Plateau several days before, were ordered to attack. The troops of the Maquis, numbering 500 men, were commanded by officers and non-commissioned officers, most of whom had belonged to the 27th Battalion of the Chasseurs Alpins. The German troops engaged in these operations consisted of five battalions of Alpine infantry, two battalions of SS, two groups of heavy artillery, one group of mountain artillery, 10 light tanks, as well as antitank and antiaircraft equipment. The German aviation took an active part in the operations.

In spite of the enormous difference in numbers and equipment, the resistance of the patriots lasted two weeks. For ten days the plateau was subjected to an intense bombardment by enemy aviation and artillery. On the eleventh day the defenders of the stronghold of Glières, who had fallen back to new positions upon orders from their officers, tried to break through the enemy lines. Simultaneously, a detachment commanded by Lieutenant Jérôme attempted to join forces with the surrounded patriots by piercing the enemy lines from the outside. In the course of this bold diversion maneuver Lieutenant Jérôme and all his men were killed.

The cost of this victory to the Germans was 400 killed and 300 injured. The defenders of the Glières Plateau shot down two enemy planes. As late as April 4th the fighting continued in the prohibited zone.

This feat of arms, worthy of French military tradition, ought to be known by the free peoples of the world. A second Bir Hakeim, the battle on the Glières Plateau bears witness of the will of France to maintain the tradition of French military grandeur. The enemy himself had to pay homage to the epic fighting spirit of these badly armed heroes.

The losses of the Maquis in this operation were estimated for the time being at 100 killed and 150 prisoners. The officers inspired their men by their gallant fight at the head of their troops. The proportion of losses among the officers was very great. The retreat was accomplished in perfect order and discipline. One of the German officers who participated in this action is quoted as having said: "These men are full of fighting spirit; as to the Militia, they are no damn good!"

*Killers to the cannon and killers to the knife,  
quick to the fight!*

*Saboteurs, watch your load, it's packed with  
dynamite!*

*For we are the Underground, we'll break the  
prison seals,*

*With hunger at our throats and hatred at our  
heels.*

—French Underground Marching Song.

\* \* \*

### ***Traffic in France Stalled By Interior Army Sabotage***

Allied Supreme Headquarters, London, July 6 (U.P.) — Lt. General Joseph Pierre Koenig's French Forces of the Interior, estimated at 500,000 armed men, have sabotaged German communications in France so completely that the Allied air force now is concentrating on fewer targets, and the Nazis are forced to channelize their movement into the battle zone, spokesmen disclosed tonight.

(General Koenig, fighting French hero of the North African front, has been named officially by Supreme Allied Headquarters to command the resistance forces of French patriots.)

A special communiqué said that five French departments—Vercors, Gers, Doubs, Ain, and Ardeche—had been liberated.

A spokesman interpreted this to mean that the sectors were under Maquis control, and that no enemy movements through these areas were possible unless heavily escorted.

A French spokesman said traffic was entirely stalled in Brittany in northern France, in the Pyrenees-Lyon area, and on nine main routes, including the Calais-Reich and Paris-Belfort lines, which are being cut an average of two to five times daily.

A spokesman said it now takes a German division moving from Russia to Normandy three times longer to travel the 300 miles from the Franco-German frontier to the battle zone than it does for it to come the 1000 miles from Russia to the border.



# Vital Role of Soviet

*by Colonel I. Pronin, Red Army*

**D**URING three years of war Soviet cavalry, widely employed on *all* battlefronts, has proved that it is still *the most effective branch* of an army which has retained all of its former fighting qualities and developed new ones. Cavalry has proved that it could conduct large scale independent operations and carry out vital operational tasks. This mobile branch of the service is just as maneuverable at any time of the year and in every kind of weather.

Throughout various stages of the war, the Soviet command has made good use of cavalry armed with the most up-to-date weapons.

## COVERING WITHDRAWALS—FALL 1941-SPRING 1942

During initial stages of the campaign, when the enemy's armored divisions were pushing eastward, the mission of cavalry, as well as that of all other branches of the Red Army, was to wear down the enemy. Utiliz-

ing the utmost of its maneuverability, cavalry dealt blows on the flanks and rear of enemy groupings, secured the flanks and formed links within the armies and fronts, and covered the Red Army during its withdrawal to the east.

Cavalry was also most effective in the German rear where, by disrupting communications and destroying command posts, enemy troop movements and dispositions were made very difficult.

During these early operations, Soviet cavalymen displayed exceptional endurance and utter contempt for danger. Cavalry units under the command of Generals Belov, Dovator, and Kruchenkin particularly distinguished themselves at that time.

Operations of the II Cavalry Corps against groupings of the enemy near the town of Balta serve as a good illustration of the gallantry of Soviet cavalry in the early phases of the war. Mobile German units had occupied the town of Balta and pushed on to Pervomaisk. By a forced march the Soviet cavalry corps arrived in the

\*By cable to THE CAVALRY JOURNAL from War Department U.S.S.R., Moscow, July 4, 1944.



*Left: A machine gun installed on a famous Russian "tachanka" supports a cavalry charge. Note saber.*

*Below: Commander of a cavalry unit gives combat assignments to junior commanders of his group.*

*Sovfotost*





# t Cavalry ★

Balta sector and, by immediately launching a surprise attack on the main enemy grouping, routed the 293d and 197th Infantry Divisions and the 19th Motorized Division. The corps captured Balta and liquidated a threat to Pervomaisk.

During the temporary setback in the spring of 1942 operations of the V Cavalry Corps, which covered the withdrawal of a Soviet Army in the Izyumbarvenkov direction, is also worthy of note. By active defense on a wide front between May 17th and 27th, the corps covered the withdrawal of an army to the left bank of the northern Donets River and bore the brunt of the fighting against a superior enemy force comprising two tank and three infantry divisions. By skilful maneuvering in this action cavalry enabled the Soviet units to take up new positions and prevented the Germans from crossing to the eastern bank of the northern Donets, which was the objective of the enemy's main forces. During these 10 days of fighting, Soviet cavalry inflicted heavy casualties on the foe. In killed alone the Germans lost 5,000 soldiers and officers.

## OFFENSIVE TACTICS—WINTER 1942-1943

The rout of the German forces, begun on the approaches to Moscow in the winter of 1941, was followed in 1942-43 by the annihilation of German armies on the approaches to Stalingrad and in the Caucasus. At that time, the tactics of cavalry units, like those of the entire Red Army, changed completely. Soviet armies on many fronts passed over to the offensive. The Germans, under the onslaught of Soviet troops began to retreat. Clinging tenaciously to every favorable position, the Germans fought for every yard of Soviet soil that they were forced to relinquish.

When the Red Army assumed the offensive in the fall of 1942 efforts of Soviet cavalry were directed toward (1) developing any break-through in the main direction and (2) making *raids*\* behind the enemy front lines. In coördination with tanks, motorized infantry and other units, cavalry encircled and exterminated thousands of enemy troops. It pursued the foe during his retreat, encircled, and wiped out or made prisoners whole units of German soldiers.

\*The word *raid*, descriptive of cavalry tactics in the American Civil War, was borrowed by the Russians, who had no equivalent term. The Russians also borrowed the tactics.

On 6 January 1943 the VI Cavalry Corps entered a gap south of Rossosh in the region of Kantemirovka. Its assignment was to push on to Valuiki, capture the railway junction of Urazovo, prevent Germans from bringing up reserves from the rear, and cut off any path of retreat for German troops in the sector attacked by Soviet tanks.

In four days the corps advanced 180 kilometers, took Valuiki and Urazovo, inflicted heavy losses on the enemy, and captured rich booty. Later in an engagement with the enemy's reserves, the Soviet commanding general ordered an infantry division, under his command as reinforcements, to hold Valuiki, and with his main force he started out in pursuit of the retreating Italian Alpine Corps. Cavalrymen cut down more than 2,000 of the enemy, and took prisoner as many as 14,000 soldiers and officers, including two generals.

## OFFENSIVE, 1943-44

In the winter of 1943-44 the IV and V Cavalry Corps pursued Germans from Taganrog down to the Dnepr and routed and prevented them from establishing themselves on the river. The cavalrymen then forced the water barrier, and on the western bank of the Dnepr prepared positions for further action.

During the 1944 spring offensive the V Guards Cavalry Corps took part in the encirclement and annihilation of the German grouping in the region of Korsun-Shevchenkivskyi. Operating on an outer circle, a ring of cavalrymen engaged enemy reserves striving to break through to their encircled troops, and in so doing played an important part in the successful outcome of the operations in which 10 divisions and one brigade of German armor and infantry were surrounded and liquidated.

## OUTSTANDING RÔLE OF CAVALRY

*Not a single big scale operation has been undertaken on the Soviet-German front without active participation of cavalry. Mounted forces have consistently attacked German flanks and rear and helped materially in the encirclement and rout of the enemy. One word, "Cossack," is enough to cause fear and create confusion in any enemy camp.*

The experience of this war proves that despite various new weapons of warfare, Soviet cavalry is a powerful force for developing a successful offensive and is highly effective in defense.

*Allied military men recognize the Russian offensive as the biggest thing that has happened in the European war. In the number of men and machines involved, in the length of line and speed of advance, in the size of Nazi losses, and in potential, this offensive is historic. While Americans and Britons are naturally more interested in the progress of their own forces on the Normandy front, they are not unaware of the larger front in eastern Europe.—Washington News, July 6, 1944.*



# Nee



Life Photo by Robert Capa.

A mule pack train winds its way through the mountains of Southern Italy. Such trains were the only means of supply to U. S. foot soldiers driving Germans from dug-in mountain position.

## TERRAIN

**D**URING the period from September to December, 1943, the U. S. VI Corps of the Allied Fifth Army advanced northwest from the Salerno Beachhead, roughly within the zone left (west) boundary: Batipaglia—Nola—Maddaloni—Caserta—Mignano; right (east) boundary: San Gregorio—Andretta—Highway 91—Melito—Benevento—San Giuliano—Isernia—Pizzono.

The area was mountainous throughout. Elevations in the southern part, on either side of the Sele and Tanagro Rivers, averaged 200 meters, and these increased to as much as 1500 meters in the central portion. In sections of the northern part the heights rose to more than 2000 meters.

At all times the mountains proved to be serious military obstacles to the advance of the corps, which had the additional problem of negotiating the Calore and Volturno Rivers. The Volturno had to be crossed twice in each of two major operations.

Roads were few, and throughout the entire advance the corps was limited to one main road with an occasional auxiliary road available for short intervals. All roads traversed mountainous country and had numerous side-hill cuts and severe grades. Traffic alongside or parallel the roads was impossible.

\*Commander of the U. S. VI Corps in Southern Italy, during fall and winter, 1943-1944.

**“Motors were tied to the roads by the inaccessible terrain. Horses and men on foot were the only things that could move.”**

The ridge lines did not follow any general direction, but ran to excessive heights, with the conformation such that the more severe slope was always presented to the advancing troops. The defending German force was in possession of dominant terrain throughout the entire zone of advance.

The retreating Germans, therefore, always had the advantage of commanding observation.

The terrain decidedly favored the defender and was entirely unsuited for motorized or mechanized warfare.

## ENEMY TACTICS

The German plan was to accomplish the maximum possible delay preparatory to defending a strong natural line south of Rome, and thus prevent the seizure of that Axis capital by Allied forces. There is no doubt but that the German command intended to make the first stand behind the line formed by the Volturno and Calore Rivers. The area between the Sele and Tanagro Rivers on the south and this defensive position on the north was ideal for delaying action. The entire section was mountainous throughout with elevations in the southern part averaging 200 meters. Peaks rose as high as 1700 meters in the west central area and averaged approximately 600 meters along Highway No. 7.

The Germans, fighting savagely and expertly to delay our advance, proved especially efficient in defensive warfare, and their selection of ground and use of weapons for defensive purposes forced our admiration. All bridges were blown and roads destroyed. Streets in towns were blocked with rubble. Mines were sown in great numbers to cover possible by-passes, and the enemy's fire power was always so placed as to prevent the removal of obstacles by direct attack. Of necessity the enemy troops had to be removed before the engineering work, allowing a further advance, could be accom-



# d for Animals in Italy

Major General John P. Lucas\*

plished. This required infantry maneuver over rough and difficult country, which consumed many hours of time and became heartbreaking from its repetition. The enemy, of course, had the advantage of good communications, and little could be done to interrupt them. Air power was of scant value against small point targets, because nothing except infantry could move off the roads, and German infantry could march as fast and as far as could American.

In spite of the many obstacles to its advance, the VI Corps reached the line of the Volturno—Calore Rivers before the German forces were prepared for an all-out defense, and, after a careful reconnaissance, made a successful crossing on a broad front.

The area between the line of the Volturno and Ca-

of other units to advance on the flanks, made exploitation of this success impossible.

The tactics employed by the enemy to accomplish sufficient delay to allow organization of each new defense line were very simple. As has been outlined, the Germans would seize and occupy dominating ground, which furnished them excellent observation, and, through well planned and well executed demolitions, they would then create an effective obstacle. This was generally over a stream at the site of a bridge or at a precipitous section of the road where the steep embankment could profitably be blown, and there seemed to be a countless number of locations where such demolitions were possible. Then, the block thus created was covered by accurate artillery and automatic weapons fire, while the defending enemy troops manning these weapons prepared to stay in position until the last possible moment.

## NEED FOR HORSE CAVALRY

Before an obstacle of the kind invariably left by the Germans could be cleared or repaired by engineers, it was necessary for the infantry to move over extremely difficult terrain in order to outflank the hostile resistance. The infantry accomplished wonders, and I am convinced that no other foot soldiers in the world can equal the stamina of the American doughboy. However, their progress was necessarily slow, the work tedious, and it soon became obvious that, *unless a highly mobile force could encircle the withdrawing enemy, it*

A bulldozer clears rock from blown road near Colli. Road can be seen in upper right corner of picture. Blasts along precipitous road banks retarded all road-bound traffic.



U. S. Signal Corps Photos

This blown bridge over the Volturno, south of Venafro, is quite typical of enemy demolitions in Southern Italy.

lore Rivers on the south and the new line on the north was even more favorable for delay. Except for the broad Volturno Valley, the area was highly mountainous with elevations in some localities running to more than 2000 meters. Again, the advance, though painfully slow, was steady, and the VI Corps once more arrived on the Volturno and after forcing a crossing, seized Venafro, Montaquila, and Colli. This action pierced a defensive line which the enemy had intended to hold until April.

The physical condition of the troops, which had gone beyond the point of exhaustion, and the inability





would be impossible to kill him in any really decisive numbers.

During these operations I made strenuous efforts to get at least a regiment of horse cavalry. There was a desperate need for some type of unit that could penetrate cross-country and get through the difficult mountains at a decidedly faster rate than the infantry. *Motors were tied to the roads by the inaccessible terrain. Horses and men on foot were the only things that could move.* I am convinced that if I could have gotten some type of troops behind the Germans to work on their lines of communication in order to execute demolitions in their rear, the results in southern Italy might well have been decisive.\*

Mounted units, schooled in the American cavalry doctrine, would have been the perfect solution. Hardened and well trained horsemen possessing mobility and

\*See articles from Russia, "Vital Rôle of Soviet Cavalry" and "On the Road to Odessa," Pages 14 and 48.

fire power, could have infiltrated through the extended German lines, encircled the delaying detachments, and would have captured or destroyed those elements. This would have permitted the maintenance of pressure on the retreating enemy main forces by our infantry divisions in their direct pursuit and would not have given the Germans sufficient time to prepare strong defensive positions to the north. As it was, there was no cavalry available. There were only men on foot—and German infantry withdrawing on good roads could move more rapidly than American infantry could move over rugged and mountainous terrain.

#### ANIMALS AVAILABLE

To insure the success of the infantry during the operations against the Germans in southern Italy, it was found that pack transportation was absolutely essential. It is something that will always be needed in war, because wars are never fought on favorable ter-

### Cavalry Forges Ahead On Soviet Northern Front

MOSCOW, June 30. By M. S. Handler, United Press Staff Correspondent.—Marshal Rokossovsky's First White Russian Army poured across the Berezina River, last natural defense barrier before Minsk.

Cavalry, leading the pell-mell pursuit of the disorganized enemy legions, forged ahead to a point 30 miles southwest of Minsk in a drive that raised a threat of encirclement against the White Russian capital, next obstacle on the ancient invasion route to Warsaw and Berlin.

The Soviet High Command reported the Germans were fleeing so rapidly and in such disorder that they had no time to man their intermediate defense lines. One Russian general writing of the scene said, "No army in the world has ever suffered such defeats as has befallen the Wehrmacht. During the worst days of 1941, we did not live through one-tenth of what the Germans are experiencing today."

LONDON, July 3—Associated Press. From 200,000 to 240,000 German defenders of Minsk were clamped in a steel vise today as Russian columns, plunging into old Poland at the rate of 40 miles a day, snapped their two railway escape routes and in a frontal assault swept to within 12½ miles of the city.

Premier Marshal Stalin, in orders of the day, sent his congratulations to General Ivan D. Cherniakhovsky, whose troops cut the railway on the northwest, and Marshal Konstantin K. Rokossovsky, who struck from the southwest.

Cherniakhovsky's cavalry pressed on 10 miles into Poland and captured Wilejka, 47 miles northwest of Minsk, and 67 miles southeast of Wilno.

Stalin said the attacks from north and south were launched simultaneously, and cavalry, tanks and infantry dealt a succession of blows in the south.

The spearheads of tank and Cossacks by-passing Minsk left open to the Germans only the desolate and difficult marshland for a retreat to the next lateral rail junction at Lida, 120 miles west.

MOSCOW, July 6—Associated Press. The Red Army unleashed a great new offensive today in the direction of Pinsk and Brest-Litovsk, while vanguards of General Ivan Cherniakhovsky's Third White Russian Army were reported within 45 miles of Wilno, gateway to the Northern Baltic republics. . . . General Cherniakhovsky's advance on Wilno from the southeast carried through Smorgonie, where his cavalry units were only 140 miles from the borders of East Prussia.

MOSCOW, July 12. By M. S. Handler, United Press Staff Correspondent.—The Stockholm Aftonbladet reported the "biggest state of alarm" in East Prussia with Nazi authorities closing the frontiers and mining the approaches.

Russian cavalry and infantry pushed along a secondary road through the Pripet Marshes for an imminent attack on Pinsk and threatened the escape route of other German forces falling back along the Gomel-Pinsk railway from Lovcha, 21 miles northeast of Pinsk, under heavy attack by another Russian force.

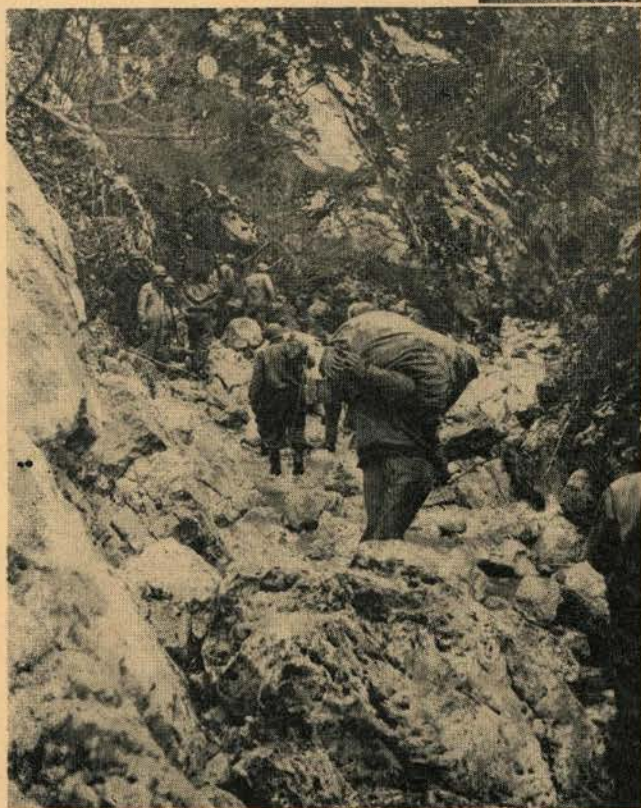
LONDON, July 14—The German High Command today acknowledged the loss of Pinsk, last big defense bastion of the Pripet Marshes, and the German Transocean News Agency reported that the Russians had broken into Grodno, main bastion on the approaches to East Prussia. The fall of Pinsk indicated Marshal Rokossovsky had completed the conquest of the swampland and was ready for a push 100 miles west against Brest-Litovsk on the road to Warsaw and Berlin.



Right: Photo shows a stretch of the main supply road of the VI Corps in the Capriati sector in southern Italy. Roads were churned to slush.

U. S. soldiers pack rations along a stream bed in the Demanio Area.

Signal Corps Photos



suitable equipment. North Africa, Sicily, and Italy were combed and a varied and peculiar assortment of pack equipment was obtained. There were a few Phillips packs, together with many different types of French and Italian pack saddles. With inexperienced pack personnel, poorly conditioned animals, and lack of uniformity of equipment, the divisions were constantly pressed to keep the pack trains functioning.

#### FORAGE

The matter of forage was a constant headache. It was entirely inadequate. Some grain of a very poor quality was picked up in North Africa and Italy, but there was no central source where hay could be obtained. It was necessary to cover all outlying districts in order to requisition forage in an attempt to fill the needs. Of course, grazing was resorted to whenever possible. Under ordinary conditions, forage was transported by truck. No attempt was or should be made to carry it by animal train.

#### FUTURE OPERATIONS

It is my personal opinion, aside from any appreciation of the value that American trained and equipped cavalry might have under conditions such as experienced in Italy, that each infantry division operating in mountainous or rugged terrain should have available a train of 500 mules. These should be divided into ordinary pack trains of approximately 50 animals each. There will be considerable losses among them, not only from enemy fire but from exhaustion, so there should be some method of replacement for animals. Also, in order to reduce wastage, there should be a veterinary set-up of some kind. Possibly, a Veterinary Platoon, as an organic part of the pack train, should be included in the Table of Organization.

rain. In some cases pack artillery was used, but there was never enough of it to rely on to any great extent.

There may have been some American mules in southern Italy, but I do not remember seeing them. The only ones that I saw were the little Italian mules, which can carry only a comparatively light load. Despite their small size and the fact that in many instances time did not permit proper conditioning, these animals proved to be *most valuable*. Of course, the number available was entirely insufficient.

#### PERSONNEL

In southern Italy the Allied command had considerable difficulty in finding enlisted personnel who understood animals and could take care of them. It does not take very long to teach a man to pack, but very few people have the background and experience necessary for the proper care of animals. On one occasion, I asked for some men of this type from the United States and requested that they be flown over.

#### EQUIPMENT

Another difficulty was the securing of sufficient and



# A TD Battalion at

*As told by Captain P. C. Meachem\**

*to Lieutenant L. R. Barnhill*

"THIS is it," came the warning over the battered field phone in the cave-like dugout of the tank destroyer reconnaissance company command post. It was 0500 hours on the icy cold morning of 15 February.

The terse message signaled the opening of the third and fiercest German armored attack upon the Allied positions on the Anzio beachhead established 22 January. It was also the last offensive threat by the Germans, before the Allies shattered the steel ring about the beachhead in late May and surged northward to engulf Rome.

For weeks the Germans had been stepping up the tempo of their artillery fire on the beachhead. Increased activity of German armor had been observed north of the Allied lines. Other information had confirmed reports that the enemy was preparing for a major "show."

Within seconds after the first warning flash, reports from OP's were pouring into the tank destroyer reconnaissance command post. Men in the OP's were giving the location of advancing tanks and troops and calling for artillery fire. The attack was underway.

For three days the action thundered in and around the Carroceta sector. For three days the tank destroyer battalion held fast, bearing the brunt of the armored thrust. After the inevitable smoke and dust of battle had cleared and the last German tank had withdrawn, the tank destroyer battalion racked up official credit for smashing 25 Jerry tanks and stopping dead the most determined of all the Panzer efforts to crush the beachhead forces. It was not a one-sided fight. The tank destroyers lost, too—in guns and men—but not to the same wasteful extent as the Germans.

## ARRIVAL AT ANZIO

When the tank destroyer battalion landed at Anzio at 0200 hours on 28 January, six days after the initial landing of Allied troops—the beach was reassuringly quiet. The battalion rolled off LST's and moved into an assigned bivouac area just as if it were on a field problem in the States. Everyone was careful, however, to maintain at least 100 yards' dispersion between vehicles. It was known from experience what havoc German bombers could wreak among bunched vehicles.

Even before all of the vehicles were de-waterproofed and camouflaged, the reconnaissance company was committed to road reconnaissance.

Just before the battalion left Naples all half-tracks

had been replaced with M8's and M20's, and at Anzio the men were using them in combat for the first time. It was soon learned from actual tests on the Anzio terrain that with tire chains the newly acquired wheeled vehicles could traverse just as difficult routes as could the half-tracks. This did not mean much on Anzio. Even the full-tracks were confined for the most part to highways, because of the solid network of drainage canals slicing across the beachhead sector.

For two days two platoons of the reconnaissance company were on continuous road reconnaissance. One platoon ran out all of the roads extending left of the main highway which ran through the beachhead from Anzio to Carroceta, and the other platoon did the same on the right. Notes were made on class of roads, blown bridges, fords, possible points for by-passes, and weight limits of existing bridges. This information was placed on the battalion situation map and disseminated throughout the battalion. It also was passed on to the 1st Armored Division.

## DIGGING IN

Because of the high water table on the low, flat area, the matter of digging in posed a new problem for tank destroyer units, accustomed to digging as deep as they wished on the rocky mountain slopes south of Cassino without reaching water. At Anzio the crews struck water within two and three feet of the surface, so burrowing tactics had to be revised. Regular caves were built to house two or four men. Up-ended three-inch ammunition boxes filled with sand provided solid walls. Timbers and boards gathered from shell-wrecked buildings in Anzio provided roof supports. On top of these the men placed canvas and a layer of dirt. This provided a shelter that protected the crews from everything except a direct hit.

The reconnaissance company CP was arranged in a similar fashion. The CP tent was placed in a hole two or three feet deep, depending upon the water level. A row of up-ended, three-inch ammunition boxes filled with sand was placed around the tent. Another row of ammo boxes, laid on their sides, was placed on top of the up-ended boxes. This brought the protective wall to the height of the CP tent. A camouflage net was then thrown over both the tent and the wall of boxes.

Light was provided by a sealed beam automobile headlight connected to a 12-volt battery, cannibalized from a wrecked vehicle. A member of the maintenance section kept the battery charged.

\*Commander, Reconnaissance Company, Tank Destroyer Battalion on the Anzio beachhead, Italy.



# Anzio



Signal Corps Photo

*Above:* Tank destroyers, unloaded from an LST in the Anzio harbor, pass ruins on the way to assembly point.

*Left:* Entrance to a foxhole at Anzio. Note flat coverless terrain. Destroyer in background is covered by camouflage net. After the first few days, all destroyers dug in.



Direct wire communication ran from the reconnaissance CP to battalion headquarters. Radio communications in the CP was provided through 608's on two M20's dug in on each side of the CP tent. One of the radios was in continuous operation.

Everything on the beachhead was dug in, even the M8's and M20's. The men dug the self-propelled guns down to the fenders and then used sandbags to build

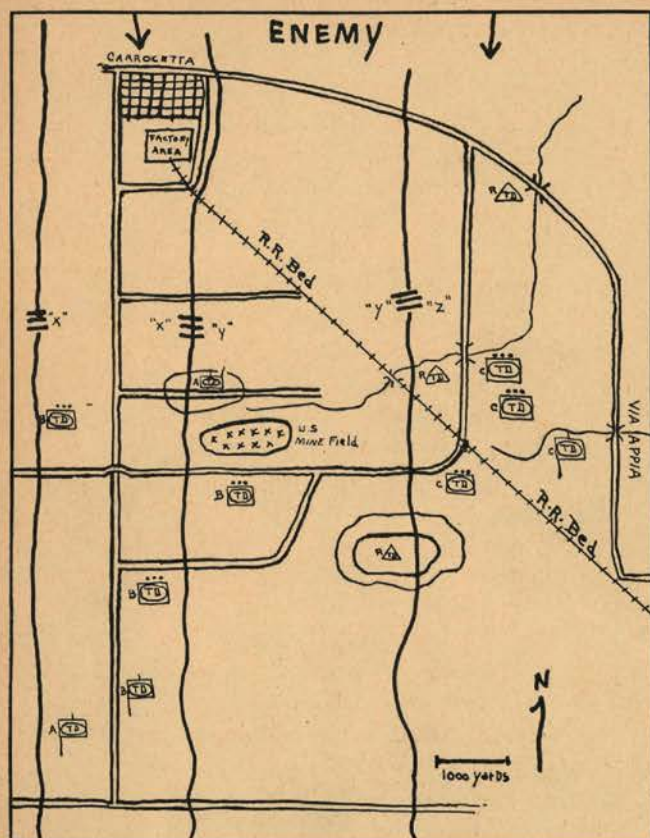
revetments up level with the tops of the vehicles. A hole was dug under the vehicle for a two-man shelter. Entrance was gained through a tunnel extending under the rear of the vehicle.

That was the setup during the first quiet days on Anzio. In the rear there were even a couple of pyramidal tents heated by Sibley stoves. Those two tents were great morale boosters. Men coming off night patrols changed into dry clothes there and ate some warm food before turning in. It was cold, wet, and miserable during most of the time spent on the beachhead, and any possible comfort was a luxury.

## DEFENSIVE POSITIONS

Soon after the TD battalion arrived on the beachhead, two of the gun companies and two of the reconnaissance platoons were committed to defensive positions. The other gun company and reconnaissance platoon were held in reserve. During this period there was set up a rotation system, which used reserve units as a source of replacements for the men in the front lines. It was found that men could stay in the front





lines for about four days before they began to lose their peak combat efficiency. Then they needed a rest.

The mission of the reconnaissance platoons was to establish listening posts as close to the front lines as possible. This quickly developed into having a series of OP's right in the front lines.

A 610 radio provided communications. Hourly reports were made unless an emergency arose. If headquarters had to contact an OP between hours, a messenger was sent forward. All OP's were situated so as to cover important lines of communications such as crossroads, blown-out bridges, and likely approaches.

At first the gun companies used stone houses for cover. They either knocked out the rear walls and pulled the M10 tank destroyers right into the buildings or placed them in position behind the houses so they could pull out and take enemy tanks under fire.

Around the 10th of February the Germans began a systematic destruction by artillery fire of houses around the perimeter. This forced the destroyers to abandon the buildings and to seek what defilade they could find in the flat open terrain. The pioneer platoon was put to work helping to dig in the 32-ton destroyers. Various positions were dug for each gun.

#### ENEMY ARTILLERY BOMBS

During this phase the whole battalion had a good opportunity to study German artillery technique. First the Germans would register with air bursts. Usually, these were too high to do any harm. Then they would

follow through with ground bursts. It might be minutes later or hours, but sooner or later Jerry would be dropping ground bursts on areas over which he had registered with air bursts. The Krauts mixed mortar fire with the artillery rounds to make the showing of increased interest.

On one occasion, three mortar shells exploded in quick succession in one of the buildings used for an OP. The rounds whistled in through a window and exploded in the room next to the OP room. Each explosion knocked the man on duty to the floor. He had just time to pick himself up when the next round slapped him down again. After the last round he made a quick check of his physical condition and found that by some miracle he had suffered, in addition to a bruised dignity, only minor scratches from flying pieces of masonry. After that the OP was moved to the first floor.

About that time, the Germans also stepped up their night harassing fire. It consisted mostly of single planes flying over to drop strings of incendiary and antipersonnel bombs by the light of flares. The Germans aimed at supply dumps, but troops were crowded so close together on the tight little beachhead that each bomb sounded to each soldier as if it had his name on it. All that anyone could do was to sit tight and sweat it out.

One string of bombs punched out a neat row of craters in the soil between the reconnaissance company and the TD battalion CP. One of the explosions tore away the top of the company CP tent, as neatly as if it had been cut by a huge knife, and flipped one of the men sleeping in the tent out of his cot. He was dazed but otherwise unhurt.

#### TD RECONNAISSANCE OP's

The reconnaissance company had three OP's established at that time—two within the area of the German attack. One was at a crossroad 3500 yards directly east of Carroceta and right on the outer edge of the beachhead perimeter. The second was at a road junction 2500 yards southeast of Carroceta.

Company C destroyers were in position on an 1800

A tank destroyer fires from a dug-in position near Mignano, Italy. At Anzio maneuver was limited, dug-in positions essential. 3-inch guns used regular artillery sights.







Italian houses on the beachhead's perimeter were used for OP's. During the first days they were used as shelter for vehicles, but this cover was found inadequate, abandoned.

yard front beside a highway curve 4000 yards southeast of Carroceta with a good field of fire along two roads leading toward the German lines. Like the beachhead forces, the Germans would have to stick pretty much to the roads in making any move with armor.

Company A was in position along a dead-end road 2500 yards directly south of Carroceta with an excellent field of fire covering the main highway between Anzio and Carroceta.

One platoon of Company B was just left of the main Anzio-Carroceta highway, 3000 yards south of Carroceta. The other two platoons were held in reserve back with the 1st Armored Division.

That was the situation at the time of the attack. The whole beachhead force was constantly on the alert for a German move. Everybody sensed that something was brewing, but no one knew when it would break.

#### GERMAN ATTACK

Then came that brief warning on the morning of the 15th. Everything happened at once.

German tanks came rolling out of the north at daylight. They milled around in the factory district near Carroceta and came down the main roads toward the beachhead lines. The company OP's had to draw back early in the fighting. The M8's and M20's were pulled back along the Mussolini canal on the right and placed in defilade, where they could put up a last-stand fight if the Germans broke through.

Company C took the German tanks under fire at 3500 yards as they came down out of some woods east of Carroceta. Company A was firing at about half that range at tanks in the factory district left of Company C. Company B destroyers blasted away at tanks attempting to punch down the Carroceta-Anzio highway.

The gun positions were good. They were the best that could be had under the circumstances. But because of

the mud, the destroyers could not move into alternate or supplementary positions. When the attack opened, they had to stay where they were dug in and slug it out.

In addition to the tank fire, artillery and mortar shells were pouring upon the whole beachhead. Allied tanks were outranged by German guns and were quickly knocked out. The noise of battle became an interminable din. Huge clouds of smoke and dust from shell bursts added to the confusion. Observation for both sides became increasingly difficult.

The Germans threw in wave after wave of infantry. It is hard to get the picture and difficult to describe, but as soon as one wave of Germans was stopped another came in to take its place. The foot troops came so close that destroyer crews fired on them with .50-caliber machine guns.

#### TD DEFENSE

Men of the reconnaissance company removed .30-caliber machine guns from their vehicles and carried them into the front lines, where they fought as infantry. One infantry squad, fighting in a house, took over one of these machine guns and continued fighting after their own gun was knocked out.

The tank destroyers pumped a continuous rain of high explosive shells into the wave of advancing German tanks. The bursts mowed down infantrymen who were advancing among the tanks. Even near-misses took their toll in men. Concussion often stopped the tanks long enough to give the TD gunners a still target, and that was good. Little use was made of APC shell during this action. A near miss with an APC shell does not hurt anybody, but it is different when those HE shells burst among the Krauts!

During that night the fighting died down. Supplies of gasoline, food, and ammunition were brought up, and weary crews grabbed a few hours of sleep. The 16th was much a repetition of the 15th, with the Germans inching forward a few hundred yards, but still unable to make a break-through. That night supplies were brought up again. Wounded were evacuated and replacements were received.

On the 17th the Germans pushed forward again. This time they overran the position occupied by Company A, but later they were driven back and the battalion recovered several of the disabled destroyers. Those beyond repair were left in their positions.

After the 17th the German tanks withdrew and the beachhead reverted to its old status of alert defensive positions. Within 72 hours after the end of the fighting the battalion had received new vehicles to replace all those lost in action. These were dug in and the troops held along that line until the 5th of March.

The battalion's losses, especially in Company A which bore the brunt of the attack at close range, were heavy, but they did not approach those of the Germans. The reconnaissance company lost two quarters when the Germans overran one of the OP's, but the bulk of the thin-skinned vehicles were saved.



# Tank Training at Anzio

by Master Sergeant



Signal Corps Photo

**P**ENNEDED in a small semicircle of lowlands and canals, Fifth Army tankmen on the Anzio beachhead in Italy met their adverse situation by stressing closer coöperation with infantry and artillery.

Much of the crowded beachhead front was a tankman's nightmare—soft fields and marshes criss-crossed by deep ditches, all surrounded by high ground from which the Germans enjoyed ideal observation.

"We had to forget any dreams of a great tank show of mass maneuvers and begin thinking in terms of small, flexible units—companies and platoons—operating in limited areas," said one unit commander.

Tankmen thus found themselves shoulder to shoulder with infantry and artillery. The next step was to lock arms, and they did just that—more effectively than at any time in Mediterranean campaigns.

## THE TANK-ARTILLERY TEAM

An excellent illustration of this trend is found in the training program inaugurated by a large tank unit during the four months on the beachhead. With the help of artillerymen, every officer and platoon sergeant in the tank outfit was made a qualified artillery observer. The tank students learned their new job under fire in artillery observation posts at the front, where they were instructed, two at a time, by artillery officers and experienced observers. Finally, each tank officer and sergeant observed alone for a three-hour period.

"The Germans really paid the bill for that course," commented one artilleryman. "The armored boys cut loose every time a Kraut stuck his head up."

As part of this program, two tank companies at a time, rotating through the unit, spent 10 days on indirect firing with artillery units. Each platoon functioned as

"A task force was organized on the ratio of approximately with tank destroyers and air observation post artillery a destroyers are in foreground, Sherman tanks in backgr

an artillery battery. Observation was by Piper Cub. Reports were made to the artillery switchboard and from there down to the tanks through their company headquarters, which set up its own fire direction center.

Aiming circles, panoramic sights from .50 caliber machine guns, and gunners' quadrants were requisitioned for this work.

Every night a tank company practiced harassing fire. Artillery compiled data during the day and had missions waiting for the tanks when they rolled up. On one occasion one tank company fired 10 missions, totaling 300 rounds, target to target, in 20 minutes.

## TANK-INFANTRY COMMUNICATIONS

In the matter of teaming up with infantry, tank officers on the Anzio beachhead talked of only one thing—communications.

"A man in a tank is half blind and half deaf," pointed out an armored force colonel. "The infantry can be his eyes and ears. We can help each other immeasurably, but we must know where the other fellow is at all times, and that means direct communication."

To emphasize this and other possibilities in a co-ordinated tank-infantry attack, one beachhead general ordered a field demonstration. Two platoons of tanks and two of infantry staged the show before 300 men and officers of both commands 3,000 yards behind the frontlines. Each tank commander and each infantry platoon leader were equipped with 536s—the standard "handy-talkie" portable radio.

The demonstration was in two phases intended to stress the vital differences—becoming increasingly

\*Fifth Army Field Correspondent.



Robert C. Geake\*

## The Tank-Artillery-Infantry Team, welded under fire at Anzio, paid dividends in battle.



a platoon of light tanks to every two platoons of infantry, attached." In the above scene on Anzio beachhead tank round, infantry mounted on both. "Handy-talkies" aided.

*Right:* Tanks and infantry capture German prisoners near Cisterna, the first major town taken after American troops finally broke through enemy beachhead defenses. German in the foreground is a sergeant. Note two U. S. infantrymen in the background, crouching from enemy machine gun fire.



Press Association

marked in the eyes of field commanders—between (1) a tank-supported infantry attack and (2) a tank assault, with infantry mopping up and consolidating.

As colored flags, representing enemy antitank guns and machine-gun nests, suddenly appeared in distant terrain, the tanks and infantry platoon leaders talked freely with each other, designated targets, and coordinated every move. A public address system broadcast their conversations to spectators while a lecturer commented on the attack.

### TANK-ARTILLERY-INFANTRY TEAM IN THE PAY-OFF

Increased cooperation between tanks and infantry and artillery went far beyond the training stage on the Allied Fifth Army's beachhead at Anzio. It paid off in battle.

One particular raid into enemy territory was a model of this type of action. A task force was organized on the ratio of approximately a platoon of light tanks to every two platoons of infantry, with tank destroyers and air observation post artillery attached. Officers from all commands met together for two days to plan a four-hour raid in minutest detail. When they "jumped off" every single man in the task force was thoroughly familiar with the pattern of the raid and his part in it.

Emphasis was on communications. In addition to his tank radio on company and task force channels, the

tank platoon leader communicated by the 536 "handy-talkie" direct to the commander of his company of infantry. This officer was never more than 15 yards from the lieutenant's tank, sometimes in it, and his artillery observer with a 59 battery pack radio was always with him. The tank platoon leader could thus control his own artillery, call up an infantry platoon to dig up mines or immediately come to the aid of doughboys who had radioed for help on a pillbox. The task force commander set up his CP at the jumping-off point.

The results speak for themselves. The raiders killed 10 Germans, wounded many others, captured 61 prisoners and brought back information and equipment. Not a man in the task force was scratched. As the raid ended, infantrymen outposted tank positions, while tankmen called in their artillery and then, withdrawing behind a perfect smoke screen, carried out the infantrymen on top of their tanks.

"It was communications and time all the way," explained a tank commander. "That is what we concentrated on in the limited area of the beachhead—direct, inter-platoon communication with infantry and time to plan and coordinate. There was nothing to worry about but the Krauts. That's the way it ought to be."





A British soldier looks at a captured German Goliath or "doodlebug" found recently in a dugout in the Normandy beach area of France. First used on the Anzio Beachhead, this type of weapon, carrying a heavy explosive charge and operated by remote control, is not retrievable.



This radio-controlled "tank," called by the Germans the B4, is an explosives carrier. Above picture was taken looking down on the tank from the rear. This was recovered with great difficulty, under enemy fire. Unlike the "doodlebug," it can be recovered after demolition is dropped.

British Official Photos

# The German Goliath a

*by Major James H. Zuello*

**T**WO German "secret weapons," the Goliath (*Minenhund*) and the German radio-controlled B4 tank, which were put into use in the Italian theater, were both stopped by artillery or mines before reaching our forward positions.

## THE GOLIATH

The Goliath, nicknamed the "doodle bug" by American soldiers, is a demolition-carrying tracked vehicle which looks like a miniature tank. In Italy the Goliaths got stuck in the mud and on hills, and sometimes exploded before reaching our lines, wounding German troops. The Goliath was also vulnerable to small-arms fire. Neither radio nor cable control made it effective.

The Goliath was first committed against our positions on the Anzio beachhead in February. Fourteen were knocked out by artillery, and none reached our positions.

The Goliath is five feet four inches long, two feet ten and a half inches wide, and one foot eight inches high. Two electric motors (earlier models had gasoline engines) move the midget at four to six miles an hour. The track is of light steel, with a 4-bogie suspension and a front driving sprocket. It has .31 inch of armor.

The motors are mounted one on each side and each drives one track. Directly behind each motor is a wet-cell storage battery which supplies the current. The motors are controlled by electrical impulses sent through a three-strand cable which unwinds from a drum at the rear. Direction is controlled by braking one track or the other. When the Goliath reaches its objective, the operator at the stationary control box explodes it. It cannot be moved in reverse, and is easily stopped in mud, on inclines, and in ditches or shell craters.

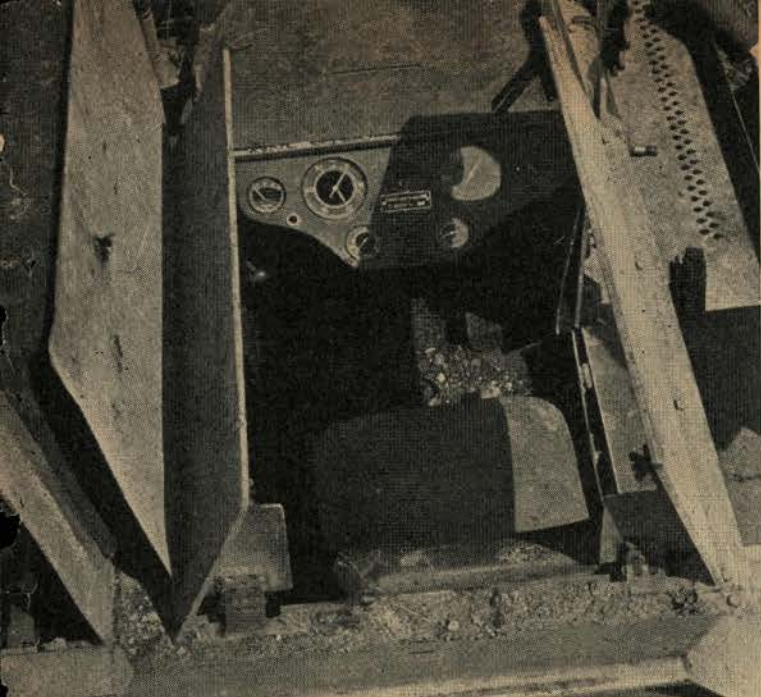
The length of the cable, and therefore the radius of action, is about 550 yards. The control box can be operated from a foxhole or from a tank, assault gun, or other vehicle.

The demolition compartment, built to carry 100 to 150 pounds of explosive, is somewhat forward of center and not in front as in the older model. Directly behind this compartment is a detonator compartment. A dry-cell battery in the stationary control unit is used.

## THE B4

A B4 radio-controlled, demolition-carrying tank was stopped by a British mine and towed in by British troops near our beachhead positions in April. It weighed





The driving seat of a German B4 is shown from above. When the driver is in his seat, the top hatch cannot be closed, and the driver's head and upper half of his chest are protected only by the front flap, which is 5/16ths of an inch thick. German soldiers call the B4 a "death trap."

## nd B4 Tanks

about four tons and carried an 800-pound demolition charge on its front sloping plate. Upon reaching its target—a roadblock, pillbox, wire entanglement—the explosive is dropped, the tank moved off, and the explosive then detonated.

The B4 has a speed of nearly thirty miles an hour and runs on a 7¾-inch track, with five bogies, a front sprocket, and a rear idler. It has about ¾ inch of armor in front and sides.

The hull is divided into three main compartments for the engine, the radio equipment and a driver's compartment.

The engine compartment, in the rear half of the hull, contains a 6-cylinder gasoline engine, the radiator, fan, two gas tanks, and a hydraulic mechanism for controlling the tank when it is radio-operated.

The radio equipment compartment is in the front left side of the hull. It houses a radio receiver and relays for the operation of the engine control. A small box on the left of the apparatus, which can be removed by taking out six screws, contains a five-valve superheterodyne receiver tuned to a fixed frequency, and crystal controlled. This seems to have been made easily detachable so that other receivers tuned to different frequencies may be substituted.

In addition to the radio equipment, the compartment contains the transmission which appears to have only

## German Fock-Wulf 190

A PRIME feature of the FW-190 is the wide use of electric controls. There is no mixture control. This is taken care of automatically. The familiar hydraulic pressure gauge is missing; it has no hydraulic system; the wheels and flaps are operated electrically. It is one of the few airplanes which uses electric control operating mechanisms to a large extent.

The FW-190 is powered by a BMW (Bavarian Motor Works) engine of the 14-cylinder, 2-row radial type, rated at approximately 1,600 horsepower.

The plane weighs approximately 10,000 pounds and has a wing span of 34½ feet. It resembles the AAF P-47 in flight.

Carrying two wing-tanks, the FW-190 has a long range. Standard practice of the Nazis calls for two wing-tanks with a bomb carried on a rack beneath the fuselage.

Cooling of the radial engine is aided by a power-driven rotary fan geared to the propeller hub. This aids in forcing air back over the cylinder fins.

Two shell-firing cannon are built into the wing roots and are electrically synchronized to fire through the propeller arc. In contrast, the regular fighter model of the FW-190 carries four cannon and two 719 machine guns.

The FW-190 was originally intended for use as a fighter. Its modification by the Germans has entailed numerous structural changes. This modified version under test by the Matériel Command was probably built in 1943. It is model 190-A4U8, the number indicates its designation for fighter-bomber, and the U8 means modification number 8.

It has been described as somewhat of a counterpart of the AAF's P-39s, P-40s and A-36s, and a plane that must not be underrated.

two forward speeds and one reverse. The cover of this compartment is made of sheet metal, but has screens for ventilation. There are two aerials, one mounted in center of the front hull plate and the other on the front part of the left fender.

The B4 is used to clear paths through barbed wire and destroy roadblocks and pillboxes. The operator drives it as far toward the target as he can. Then he switches the vehicle over to remote control and leaves by a side door. A stationary control unit, carried by the driver or in a nearby tank, assault gun or other vehicle, then directs the B4 in zigzag fashion to its objective. There the explosive is dropped and the tank is moved off to a safe distance before a time fuze sets off the demolition.

The vehicle, unlike the Goliath, is recoverable. But if there is danger of capture, the operator can set off a self-destroying device in the tank.

The driver of the B4 has a dangerous job. German soldiers call it the "death trap" or "living coffin."



# The German Robot Bomb

HITLER'S newest "secret weapon," the robot "plane," is a self-propelled bomb, launched from specially constructed ramps with the aid of jet propulsion. The Germans describe it as having a "rocket propelled gear" and claim that it is launched from "underground emplacements which are indestructible for all practical purposes."

The first enemy robot attacks were directed against southern England during the week following the Allied invasion of France. The British Air Ministry states that the Germans planned to launch the robot attacks much sooner but were thrown considerably off schedule by RAF bombings of the German experimental station at Peenemunde in Prussia as early as August of 1943. Other German factories making special weapons, notably those at Friederichshafen, have been repeatedly attacked and serious damage and casualties caused.

Discharge points in northern France have been bombed consistently since December. The U. S. 9th Air Force has revealed that Marauder and Havoc bombers have flown more than 7000 sorties and dropped almost 11,000 tons of high explosives on the launching installations of the jet-propelled projectiles in Pas de Calais since last November.

The robot plane has a fuselage 21 feet 10 inches long with a maximum width of 2 feet 4½ inches and a wing span of 16 feet. Its speed, estimated by observers, was given as 350 miles per hour and its demolition carrying capacity as equivalent to a 2000 pound block

buster. The Germans later announced the speed as 375 miles per hour and said that each robot carried 2240 pounds of explosives.

Although the range determination of the robot is set prior to launching, there is no control during flight. Its use, therefore, is restricted to area targets within a limited range and probably in the general direction indicated by the launching ramp.

Defense against robot attacks has been confined largely to antiaircraft activity and fighter pilot attacks.

In commenting before Parliament, Prime Minister Churchill declared, "The flying bomb is a weapon literally and essentially indiscriminate in its nature, purpose and effect."

One pilot described his experience as follows:

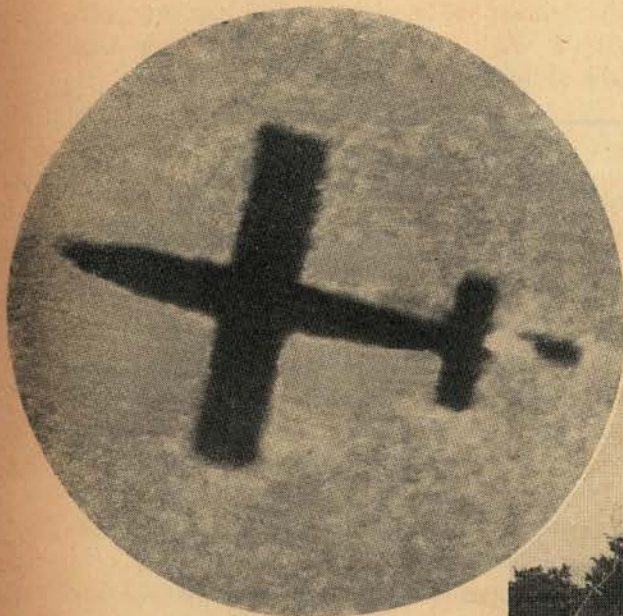
"The robot was a sort of freakish-looking thing. There wasn't any propeller and its tail looked funny because of that jet thing sitting right on top of the fuselage with fire coming out of it. It has square wing tips and looks something like a miniature Mustang with tapering leading and trailing edges.

"I closed in on him from below—I like that spot because there is a big area to hit. On the fourth burst he caught fire, and big blue flames burst out. He just snapped over and hit the ground in a big field. There was a house in the field and it blew off the roof, smashed all windows and killed a lot of ducks. Of course he made a pretty big crater, too.

"A little later the same night I was out over the Channel when I saw a jet flame moving fast. I caught him about 10 miles inland. He turned into the biggest ball of flame you ever saw and exploded. I was at top of a climb but he bounced me even so. . . ."

As a military weapon the robot is still in a crude stage—with possibilities of future developments that stagger the imagination. The idea of sending machinery to war without manpower may be as revolutionary in the tactics of warfare as the introduction of gun powder or the intervention of air power.

Signal Corps Photo



Press Association

A German robot bomb dives toward the earth with flame streaming from its propulsion unit (mounted above and behind tail), after it crossed the southern English coast headed inland.

This installation, captured by U. S. troops on approach to Cherbourg, is believed to be launching ramp for robots.





# General Hawkins' Notes

## The Scope of Employment of Armored Forces-- Tactics and Conduct

**T**ANKS must be associated closely with infantry and artillery or cavalry and artillery. The Russians, for the sake of brevity, call these teams infantry-tank teams and cavalry-tank teams. The Russian teams, of course, include artillery, engineers, signal troops, antitank units, etc.

Since the United States and England will have no cavalry in coming European operations, they will have no cavalry-tank teams. The scope of employment of Allied armored forces in France, therefore, will necessarily be smaller than that of the Russians on the Eastern Front, for the Russians use both teams.

The Russian cavalry-tank teams have, whenever possible, been followed, or backed up, by motorized or marching infantry, or both. But the cavalry-tank teams have been able to operate farther away from their supporting troops than the infantry-tank teams can go prudently. Increased cross-country mobility and independence of action enable cavalry-tank teams to make great turning movements and to fight delaying actions with more security, speed and effect.

*Without cavalry in Western Europe, reconnaissance in force cannot be carried out so successfully or so safely; security for infantry formations cannot be provided so conveniently and so immediately; and powerful cavalry links between the less mobile infantry-artillery teams and the more mobile armored forces will be impossible to establish. The influence of difficult terrain and bad weather will be of far greater importance.*

Motorized infantry does not replace cavalry. In Russia, the cavalry-tank teams have replaced the motorized infantry-tank teams for far-flung or independent operations. The U. S. armored division is an infantry-tank team. Armored infantry has replaced motorized infantry in the armored division because of armored carriers, which have considerable cross-country mobility. But these armored carriers also have their limitations. Like the self-propelled artillery, they often break down on difficult ground. They need much repair. Good roads in the theater of military operations become more and more rare. The failure of the infantry organic element in an armored force to keep up with the tanks has often been disastrous.

The infantry-tank-artillery-airplane team, as represented by the U. S. armored division (providing that the tactical air force supplies the air units), is a powerful and useful organization for attack. But it must be

kept within supporting distance of infantry divisions. It must not be used improperly.

The Russians rarely send an armored force to attack without using a detachment of air force, subject to the orders of the ground commander, for both reconnaissance and support. But the methods of support, of communication, of recognition, of change in targets after the planes are in the air, and much else are all prearranged and practiced between the ground commanders and the air commanders beforehand. This procedure is not for any given attack but is a general arrangement with the planes that are to cooperate during a whole operation.

### MISSIONS

The missions for armored divisions are various and important. The chief missions are as follows:

1. Counterattacks, not initial attacks.
2. Exploitation of a break-through.
3. Pursuit of a beaten enemy.

Every tank engagement should be opened by use of artillery and antitank units. The tanks attack afterward. Tanks should not be sent to attack superior numbers of enemy tanks. Rather, the enemy tanks should be lured into traps quickly formed to deceive them. This is usually done by confronting the enemy tanks with light forces which fake a retreat so as to draw the pursuing enemy tanks into an ambush of artillery and antitank units.

The tanks should usually attack the flanks of enemy armored units after the antitank units and artillery have had a chance to cripple the enemy machines with their fire, begun as soon as the enemy is within range and continued throughout the action.

No head-on tank attacks against enemy tanks should be permitted, although in the thick of battle tank vs. tank combat will inevitably occur in small spots of the battlefield.

An armored force pushing forward to attack should be followed as fast as possible by infantry divisions.

If, after an advance to the attack has been started, the security elements warn of an enemy trap, the tank advance should not be continued stubbornly, but instead an attempt should be made to outmaneuver the enemy. By sending forward small well deployed forces that then retire and fake retreat, it may be possible to induce the enemy to attack, and when he does, to strike



him from ambush. Or, again, it may be possible to change direction of the attack and surprise the enemy's flank. These situations are very liable to occur during the exploitation of a break-through or in the process of pursuit.

Since the enemy defensive positions will be prepared in great depth, an armored force which exploits a break-through may often find itself surrounded and attacked by a force of all arms. The armored divisions, therefore, must know how to assume a position for all around defense where they can hold until relieved by some action of other forces.

Stratagems to trap the enemy tanks should be practiced so that they can be referred to in orders by brief terms, understood by all. Stratagems require celerity of action and movement. They cannot be planned and laid hours beforehand, and it must be remembered that the enemy will attempt to use the same stratagems.

Although much of the activity of an armored force will be in combat with the enemy armored forces, the prime objective of such a force is the hostile infantry. If the hostile infantry can be defeated the enemy's whole army will be defeated. Often, however, in an effort to reach the enemy infantry the attacking tanks will be confronted by intervening enemy tanks. Tank battles, therefore, are inevitable. The broad principle on which operations should be based is not to seek battle with enemy tanks, but to be able to throw them out of the way in order to seek the enemy infantry. Modern tank-destroyers should be of great assistance in doing this.

Enough tank-destroyers, in organized antitank units, should be able to protect not only the armored forces but also the infantry and artillery forces left to fend for themselves. Thus, while the infantry divisions, or task forces are operating in force, the armored forces can be launched against enemy flanks, thrown into break-throughs, or used in pursuits, without constant apprehension that the supporting infantry may be badly mauled by enemy tanks during the temporary absence of the principal armored units.

In other words, instead of chasing around after enemy tanks, the tank force should go about its business of attacking the heart of the enemy and let the enemy tanks do the chasing around. This principle, of course, must be flexible and must be applied with the proper caution. The necessity for constant and all round security reconnaissance is apparent.

#### RECONNAISSANCE

The chief use of an armored division's reconnaissance squadron will be to form covering forces in the front, moving by bounds, and strong combat patrols on the flanks and rear. This requires much training. Security thus becomes the important mission of the reconnaissance squadron. Other reconnaissance is best performed by task forces engaged in reconnaissance in force.

The next most important duty of the reconnaissance squadron is to reconnoiter the ground over which the division is expected to advance. Forces should not be committed blindly into situations where the ground may offer surprises or unforeseen difficulties. The covering force principle should enable the commander to avoid this.

There are two kinds of reconnaissance that are indispensable. They are *security* reconnaissance and *information* reconnaissance. It is impossible to state which is the more important. Not only the armored forces, but all task forces, must have all around protection at all times from surprises by the enemy or by the terrain.

Information reconnaissance, so called for want of a better term, or sometimes called exploratory reconnaissance, is generally more distant than security reconnaissance and is done in three ways. They are (1) reconnaissance in force by task forces, said by the Russians to be the most reliable and efficient means; (2) infiltrating patrols; and (3) airplane reconnaissance using observers and photography.

Modern photography from airplanes has become perhaps the most important means of information reconnaissance. It depicts the nature of the ground, the cover for advancing riflemen and other troops, the defensive installations of the enemy, and often the presence of marching or stationary troops. This kind of information is extremely important for armored forces before they are committed to the accidents of the ground or the prepared surprises by the enemy. Airplane reconnaissance, however, must be supplemented constantly by ground reconnaissance of all kinds. Thus, the armored forces are going to be called upon for reconnaissance in large measure and for which armed vehicles are not always suitable. In the absence of cavalry the armored forces will have to accept this rôle and do the best they can.

#### THE COMMANDER'S POSITION AND USE OF RESERVES

It is not easy to prescribe the use of reserves. It does no good to say that reserves must not be used too early in the action or too late. It can be stated usefully that the commander must not forget his reserves or fail to make the most of them. Many commanders have forgotten their reserves or have been so timid about committing them that they never used them at all, or only when forced to do so by defeat or threatening disaster.

The position of the commander determines the proper use of his reserves. He cannot decide when or where to use them if he is back at a command post merely receiving and passing on information by telephone. The commander of an armored force should be well forward with his troops, certainly not behind his reserves. He must be where he can personally talk to his subordinate commanders from time to time. He can often influence the action of one or another of his groups by his personal inspiration and leadership. If he is a good commander, his subordinate leaders are glad to see him appear. They know that he has not come to find fault



or criticize but to help and inspire. By visiting subordinate leaders at various points the commander can see for himself what is happening and will be in position to change or improve the situation. He can use his reserves with much more certainty and skill.

Reserves are not generally to be used for the purpose of reinforcing a weakened unit, but rather for striking at the critical moment at the sensitive point in the enemy's disposition. A weakened unit is helped much more by this tactical employment of reserves than by sending reinforcements. However, the commander must take one or the other of these courses. If a subordinate command is large enough to have a reserve of its own and has used them and needs to replace them, the commander may send units from his general reserve for that purpose. That is, if he thinks he can spare them from the general reserve that he intends to use at the critical moment. If the situation is such that he does not intend to use his reserve as a whole, he would better apportion it to his subordinate commands.

When a reserve is sent to attack, it must be preceded and protected by a covering force and combat patrols just as if it were a front line unit going forward to attack.

Communication with a commander who is forward, where he ought to be, can be easily arranged by means of radio. He does not have to remain near a telephone station. Higher commanders can reach him by going forward to where he has been located by radio inquiry, or by simply talking to him through radio.

The old spectacle of World War I, when a regimental commander remained back at the command post to hear all about the battle by telephone but saw nothing of either the battle or the ground in front of his troops, is now over—as it should have been then.

Sending infantry to advance under fire over flat

coverless ground, which neither the commander nor his staff, nor other agents have seen beforehand, is little less than criminal stupidity. Yet in World War I this was done generally while the commander sat in a dug-out several miles in rear of his fighting lines and pretended to exercise command by pushing electrical buttons or shouting into a telephone. This amusing and absurd custom was developed from long periods of trench warfare, but it should never have been tolerated. Yet, a commander, who left his so-called command post and went forward to see his troops in action, was severely criticized by higher commanders who, in their turn, sat in command posts and expected to talk at any time by telephone with subordinate commanders who knew no more of the actual combat situation than did the higher ones. Corps and army commanders will have to remain somewhat in rear of their commands but, from divisions down, all commanders should be personally as far forward as their reserves. Their telephone stations can be kept in rear.

The present armored division has 3 battalions of modern tanks, 1 company of light tanks, 3 battalions of armored infantry, 3 battalions of artillery, a mechanized cavalry reconnaissance squadron, engineers, signal and medical troops, headquarters and service companies, and trains.

It must have attached thereto some units of tank destroyers, and probably a battalion or two of tanks and infantry for the division reserve.

How to handle all of these units is a problem for the division commander. I have ideas on this subject, but our armored force commanders have had experience in handling these elements in training, and some of them in battle. I would not presume therefore to offer any suggestions except those mentioned above.

## MODERN RECONNAISSANCE—the most popular Cavalry book since *Cavalry Combat*.

The insistent demands by men in training and on the battlefield for a single volume which would comprise the important information thus far secured on the subject has given birth to the new and comprehensive book, *Modern Reconnaissance*, published by THE CAVALRY JOURNAL June 1st.

The Table of Contents of this book includes articles on training for reconnaissance units, information on the problems met in various war theaters, and stories of the practical value of re-

connaissance in actual warfare by men who participated in the action described.

The format has been planned with an eye to the needs of men "travelling light." Excellent maps for study in connection with the articles are included as well as an abundance of illustrations, yet the book has been kept to a convenient size to pack easily, or fit into a uniform pocket.

(See inside front cover for Table of Contents.)

Order blank—Page 79.



## Editorial Comment

## Worthy of Emulation

Once again the Cossacks are on the "prod." Such a statement is not intended to infer that the use of Soviet

cavalry has been intermittent. An article, "Vital Rôle of Soviet Cavalry" which appears in this issue (page 14), gives a timely résumé of the continued exploits





and brilliant achievements of the Russian Cossacks throughout the many campaigns on the Eastern Front.

Daily communiqués as well as reports from American correspondents, tell of the deep thrusts into Nazi rear installations and of wide flanking movements which, by encircling strong Nazi positions and rail centers, have enabled the Russians to destroy or capture large forces of the German army.

"*Die Kossacken Kommen!*" is no mere dramatic or colorful phrase coined by war correspondents. German prisoners confirm the fury of the sudden assaults and the fear and desperation generated in the ranks of German infantry.

The Soviet war strategists have long been employing cavalry and tank units in coordinated action and Nazi writers—civilian and military—admit the seriousness of facing this combination in combat. (See article, "Cavalry in This War," by Lt. Colonel Benary, German Army, Page 52.)

One of the leading exponents of this successful tactical combination is Marshal Rokossovsky, present commander of the Byelorussian Front. A specialist in cavalry attacks during the defense of Moscow and, by the combined use of these arms, was later responsible for the annihilation of the Nazi Sixth Army at Stalin-grad.

During the present unprecedented successes in the northern drive toward Germany, the Soviets are using their cavalry in greater numbers than ever. Divisions and corps, acting both alone and in cooperation with tanks, are spearheading the advance along the entire front. Rokossovsky's employment of large forces of cavalry and tanks in the surge of the Soviet armies toward Poland and East Prussia is strong and sufficient proof of the efficacy of the tremendous striking power of the tank-cavalry-air combination, under the leadership of commanders who know how properly to employ and coordinate these highly mobile arms.

✓ ✓ ✓

#### Unit Citation, 2d Squadron, 5th Cavalry

Battle honors have been awarded in the name of the President to the 2d Squadron, 5th Cavalry Regiment, of the 1st Cavalry Division, for extraordinary heroism on Los Negros Island, Admiralty Group.

The unit's citation follows:

"The 2d Squadron, 5th Cavalry, is cited for extraordinary heroism in overcoming unusually difficult and hazardous conditions in battle. On February 29, 1944, this unit, landing on Los Negros Island, Admiralty Group, New Guinea, which was held by a determined, entrenched enemy in greatly superior numerical strength, quickly destroyed the immediate enemy defense, established its beachhead, and occupied the enemy airstrip within a few hours.

"The forcefulness and aggressiveness of its assault overwhelmed the enemy initially, and the brave spirit

of the personnel of the squadron permitted the early seizure of a secure hold on the enemy territory. In subsequent operations for three days and three nights, the 2d Squadron valiantly extended the controlled area by day and initiated the work prescribed for its mission under enemy fire, and by night stood by its defenses and repulsed determined and continuous infiltrating and harassing groups of the enemy, and on the second and third nights repulsed concerted counterattacks by the enemy in such force that annihilation of the squadron might easily have resulted except for the grim determination with which the squadron maintained its defenses."

✓ ✓ ✓

#### Not Bad!

The Army War College Library has recently started publishing a list of selected articles of military interest culled from the recognized army and navy publications as well as civilian periodicals such as *Saturday Evening Post*, *Time*, *Life*, *Collier's*, and *New Republic*. The material is classified under subject headings. It has been noted with considerable interest that in the first edition of this list, *Selected Periodical Articles* (May, 1944), *THE CAVALRY JOURNAL* has been given nearly twice as many listings as any other military or civilian magazines. It had a total of 62 entries. The next most quoted publication was a military weekly with 34 listings. Following that was another semiofficial journal with 26; next, a popular commercial weekly with 25.

✓ ✓ ✓

#### Overseas Edition!

Beginning with the July-August issue, *THE CAVALRY JOURNAL* is printing a special overseas edition for all subscribers in the armed forces serving outside the continental limits of the United States. This edition will contain all of the material (reduced to a 5" x 8" size) that appears in the regular domestic edition. It is half the weight, has a higher priority for shipping space, is delivered to overseas theaters several weeks earlier than the regular edition, and has more assurance of reaching extreme forward areas.

Send in your correct overseas address as soon as you know it! Your special overseas edition of *THE CAVALRY JOURNAL* will follow you promptly!

✓ ✓ ✓

#### Errata

It is regretted that the following errors in identification of matériel were made in captions of pictures in the May-June issue of the *JOURNAL*:

In "Tanks in Sicily," the vehicles pictured on Pages 7 and 8 are M-7 "Priests" organic weapons of armored artillery.

In "Employment of Tank Destroyers," the illustration on Page 62 appears to be an M-7 mount with 105mm howitzer.



# Survival in the Philip

*by Major Arthur K. Whitehead*

**EDITOR'S NOTE:** In the May-June issue of *The Cavalry Journal*, Major Whitehead described his experiences during the early days of the Jap attack on the Philippines. As a lieutenant with Troop "A", 26th Cavalry (P.S.), he witnessed the bombings of Fort Stotsenburg and Clark Field and marched north with the regiment to meet the Japs landing at Linguyan Gulf. On the afternoon of December 22d the regiment reached the outskirts of Damortis and immediately went into action from positions in the surrounding hills.

After a futile attempt to stem the Jap tide, pouring in from the ships and barges jamming the harbor, the outnumbered and outflanked Scouts were forced to withdraw toward a new position across the river.

At about 2200 Jap tanks and infantry broke through Troop "E" which formed the rear guard. Troop "A", momentarily dismounted, was thrown into confusion. While Major Whitehead was mounting, his horse bolted and he was dragged for some distance and knocked unconscious.

"Later," he concludes in his May-June account, "when I came to, the firing had stopped, forms could be seen moving down the road from the direction of the enemy, and there were no cavalymen around. I jumped a fence and got into a bamboo thicket by the side of the road."

AFTER getting off the road about fifty yards into a bamboo thicket I dropped down on the ground, quite well exhausted and still dizzy. Firing had stopped altogether. From the sound of tanks and guttural shoutings in an unfamiliar tongue, it was apparent that Japs were on the road at the place where Troop "A" had been surprised. What was the next move? The river where the regiment had watered horses late in the afternoon should not be more than a mile to the east. It was logical to believe that, after destroying the bridge, the 26th Cavalry would take up a position east of the river. I decided to get farther off the road, then work toward the river in the hope of finding a crossing and eventually getting around the right flank of the position that I assumed that the 26th might have taken.

The terrain was hilly, covered with underbrush and occasional clumps of trees. It seemed likely that Jap patrols would be in the area. Just before Troop "A" had pulled out of its last position, observation posts on the right flank had reported sounds of equipment and Jap voices nearby.

The pitch darkness made it necessary to feel for each step. The going was slow, and after each short distance it was well to stop and listen for a minute or two. During this time, the sound of a sudden burst of machine-gun fire came from the road; a pause, and then another burst. I wondered if the Japs were doing away with prisoners they had caught.

Before long a red glare filled the sky ahead; and it soon became evident that it was from a fire. As I came over the crest of a hill, I saw that about 300 yards away

the bridge across the Apangat River (which the regiment had crossed earlier in the day) was burning in the center. From the glare of the fire, I could see several low-built tanks parked on the road and Japs on the bridge examining it. Shots were being fired from the river bank on both sides of the road from the Jap side, but no firing was coming from the opposite bank. Before long the Japs hurried back from the bridge. Then two of them climbed into the leading tank and, driving onto the bridge, started through the fire. As they reached the center of the bridge I heard the sound of cracking timbers and then saw the tank ease over on its side and crash into the water.

To give the Japs a safe clearance, I started north parallel to the river with the idea of crossing it farther up. After walking for half an hour, I turned east toward the river, and soon reached a barbed wire fence bordering a road four or five feet down an embankment. About to climb the fence, I heard the sound of guttural jabbering nearby, and crouching low, I watched a Jap patrol walk by. It stopped a few yards past me. A few words were said, then all was quiet. The scuffling of the Japs' feet could be heard as they changed weight from one foot to the other. One Jap, probably leaning against the embankment of the road, loosed a small landslide; it sounded like a mountain falling.

Carefully feeling each spot before putting my weight on it, I crawled a hundred or so yards away from the river. At one time during this crawling, something moved in the bushes not far away. As the noise came closer, there was little doubt in my mind that it was a Jap. After a minute or two of sweating, I saw a pig walk into a clearing a few feet away. I then walked a short distance farther away from the river, turned north once more, and again travelled parallel to the river. Toward morning I crawled underneath a bush to rest—thinking it would be impossible to live until daylight without a drink of water.

Waking at daylight, I crawled to a nearby hill for a look around. It still seemed possible that Jap patrols should be in the vicinity. To the west was Lingayan Gulf, and in the same place as the day before there was the concentration of Jap ships. To the southeast I could see the road leading to Rosario. No firing could be heard anywhere.

Not long after I reached that hill, three B-17 U.S. bombers came flying low out of the south, and passing over the Jap ships, dropped their bombs and continued



# pines

*Cavalry*

December 22, 1941

March 1, 1942



Photo, Courtesy National Geographic Society

Major Arthur K. Whitehead, pictured at right, is the first cavalryman to have brought home an account of experiences in the Philippines. He says, "It was a bamboo thicket such as the one shown here that I jumped into after getting off the road December 22d."



north. They were fired on by Jap antiaircraft from the shore.

Leaving the hill, I walked two or three hundred yards down to a stream, where at last it was possible to have a drink and a wash. There I cached my gas mask and broken flashlight. My helmet had been lost the night before.

Now for something to eat; it had been quite a while. I walked down the stream, and before long came to a clearing with a nipa shack on it. From the shade of some trees on the edge of the clearing, I saw two Scouts walk out of the house, and after watching them for a minute to be sure that they were not Japs dressed in American uniforms, I whistled to them, and they came over to where I was sitting.

The Scouts were from Troop "E" of the 26th, and their story was much the same as mine. Troop "E" had been the rear guard of the regiment the night before, and they said that the Jap tanks had come right up to their position and stopped; that one of the men of the troop, believing the tanks to be American, had ridden

up, knocked on a tank, and signalled the crew to open their turret. The Japs, recognizing an enemy, had immediately started firing. The pitch darkness on the road the night before had been deepened by the mountains and tall trees in the vicinity. Troop "A", before it had taken position on the right flank of Troop "E" had been warned that at a certain time a company of 17 American tanks would pass through its position en route to the rear. Later, as they passed, members of Troop "A" had counted the tanks by their noise. Troop "E" must have been warned likewise and should have counted the same tanks as they passed. However, with the darkness making it impossible to see, it is possible that Troop "E" had miscounted or else the number of American tanks as relayed to them had been in error. Also, I do not believe that at that time many of us realized that we were fighting a determined enemy—already present in considerable force.

The Scouts from Troop "E" joined me, and we began to look for food. The countryside around was completely deserted of civilians. We searched through nipa



houses in the area for nearly an hour before finding enough rice and eggs for a meal. Before long our stomachs were full—it was surprising how well this food went down. What was left of the cooked rice was wrapped in banana leaves and carried along.

Through field glasses we could see Jap armored cars and tanks moving east on the road leading to Rosario. Armored cars were also bringing cyclist troops from the west to the flat country. After unloading, these cyclists would start peddling east in the direction taken by the tanks, and the armored cars would go back for more men.

By the middle of the morning of December 23d no firing had been heard, which meant that the American line had fallen back a good distance below Rosario. However, there still seemed to be a chance of getting back to the regiment. We started east, but at about 1500 found that it was necessary to hide until dark, because of the open country in sight of the road which had to be crossed.

Before dark we moved east again and during the afternoon were joined by two more Scouts whose story was about the same as ours. At about 0200 of the 24th, we came to a paved highway. Up and down the road the Japs had armored cars parked about every half-mile or so with men patrolling between them. Occasionally the Japs would fire into the darkness at some noise or movement. We learned that there had been fighting in that area the day before, but it was hard to account for the Japs' present actions. The natives in the area seemed stunned; they could not realize why the Americans had allowed the Japs to enter the Philippines. Every group of natives we passed asked the same question: "Are

American soldiers coming from the States to help us?"

Hiking back from the road we got deep into a forest and tried to get some rest. Having come a good distance into the mountains during the night, we found that the change in elevation and temperature made it impossible to sleep without a blanket—which no one in the party had.

That morning (December 24th) more Scouts joined us. They had been able to pick up some rice and before long we had breakfast. The Japs were still on the road a mile and a half to the east. That made it necessary to go north far enough to get around this road. By noon we believed that we had gone far enough and turned east. At this time a Philippine Army officer and four men joined the party, which now totaled 21. Of the 21 men, three had been wounded on the 22d but not badly. No one had rifles; the scouts had pistols.

After eating, we started east again, and by nightfall we were high in the mountains with plans changed to join the Baguio garrison. That night we ate a good meal of rice, bananas and coconuts that had been given us by natives during the afternoon.

The next morning, Christmas, we started up the mountains in the direction of Baguio, and at about 1400 came to the first human habitation—an Igorot settlement. These natives live in small villages scattered here and there through the mountains on any land level enough to build terraces for growing their rice. The village was completely deserted, but after nearly an hour some of the Scouts who spoke the Igorot dialect located some of the inhabitants, who had fled in fear that we were Japs, and persuaded them to come back and cook us food. Before long a pig was killed and rice



"This Igorot village is very much like the one where we ate our hearty Christmas dinner." Rice terraces can be seen on the hill in background.

Photo, Courtesy Commonwealth of the Philippines.



Road to Baguio, Luzon. "Going up to and away from Baguio, December 25th-28th, we hiked through much country where this picture certainly could have been taken."



Photo by Charles Martin, Courtesy National Geographic Society.

cooking. By 1700 Christmas dinner was on the floor, and we were devouring it with our hands. Except for guards, everyone in the party was asleep before dark.

The following day, with a guide, the party hiked over Sto. Tomas Mountain and reached the rest station about 1600. At one time during the day the trail had brought us to a peak which overlooked Lingayan Gulf and from there we were able to count 54 Jap ships anchored around Damortis. From the rest station we telephoned Baguio for a truck and learned that the Baguio garrison had left two days before. There were still no Japs there, however, and a truck was sent to meet us at the end of the Sto. Tomas road.

It was nearly dark when we arrived in Baguio, which showed little effect from the war except for a general tenseness in the air. Baguio had been declared an open city and, according to reports, the city council already had contacted the Japs who were expected at any time. The only bombing in the vicinity had been on Camp John Hay. There we noticed a few bomb craters on the road and lawn below the mess hall, but saw no evidence that buildings had been hit.

The commissary still had a good amount of canned food, cigarettes and beer. As much of this as we could carry was piled on the truck. The plan now was to go to Itogan, a mining town ten or fifteen miles from Baguio, then through the mountains to the Agno River valley, thence down into the central Luzon plain and come out at a point about 75 miles southeast of Damortis, where it was hoped that there still might be a chance of re-joining the Americans—if they were not being driven back too fast.

In Baguio some American civilians offered us aid and

advice. The three wounded men were taken to the hospital; one had to stay for an operation to remove the bullets from his arm. At about 2100, as the party was ready to leave for Itogan, a truck with 20 Filipinos drove up. They had been part of a group of 500 trainees on their way to Camp Murphy near Manila for induction and training. At the foot of the Kennon Road going down from Baguio two days previous to this time, their party had been intercepted by the Japs. Some had been killed, the rest sent back to their homes. Most of these men were bare-footed, had no hats, and were dressed in rags; however, they had ammunition and rifles to spare in the bottom of their truck, and so they joined our party.

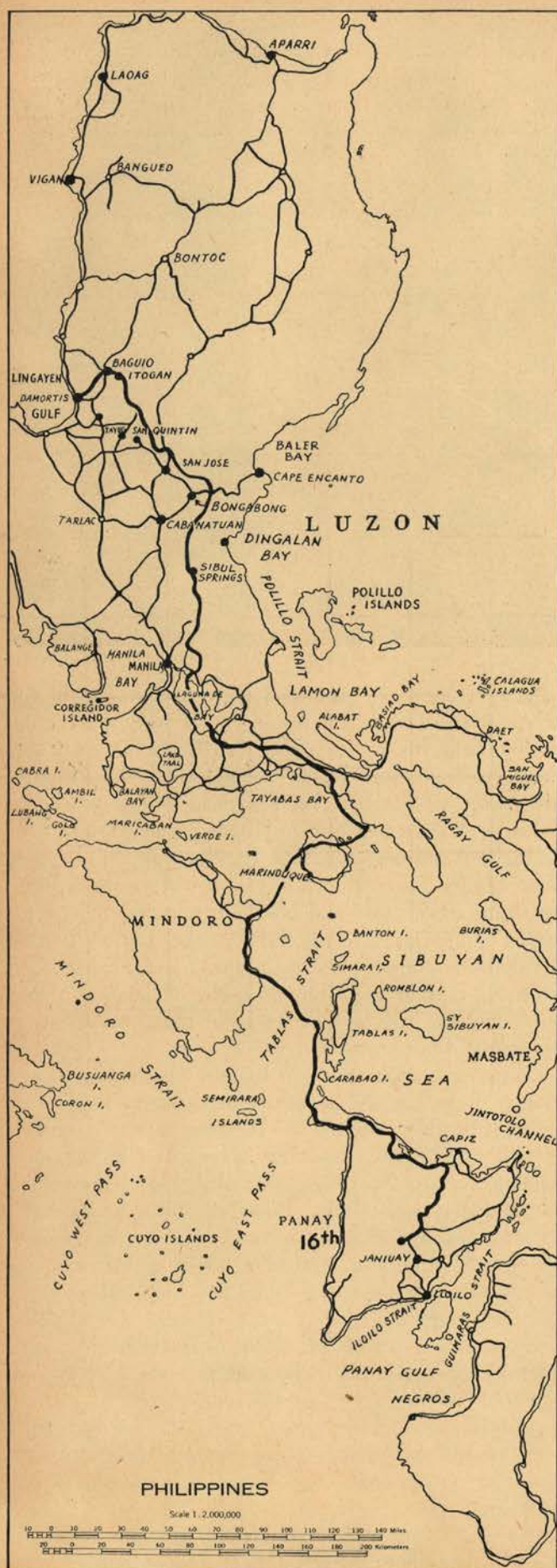
An hour later we were in Itogan, which showed evidence of the hurried departure of the Baguio garrison. A considerable amount of equipment and supplies, which they had been unable to carry through the mountains to Imugan, had been discarded there. The mayor of the town cooked rice. The beer brought from the commissary was traded for two sacks of rice, which, along with the canned food brought down, was distributed among the men. Rifles and ammunition were also distributed.

From Itogan it was necessary to travel by foot, and by midnight we had left the road and were sleeping on the trail leading to the Agno River.

On the morning of the 27th, the party was organized into squads and platoons and the new men given instruction in the rifle. By afternoon we were on our way again.

By the morning of the 28th of December, those of us who had come up from the valley to Baguio were





physically exhausted but to stop a day for rest might have meant taxing the slim chance that we hoped we had of overtaking friendly troops before they were driven too far to the south, so we continued travelling and that night camped about 6 miles north of Tayug, Pangasinan, which could be seen burning in the distance. Two scouts, sent to Tayug to get information, reported that the 26th Cavalry had been there a few days before and that the Japs had passed through only the previous day but were now already far to the south. The buildings burning were Chinese stores set afire by the Japs.

The next day we by-passed Tayug by going through the mountains to the east and camped that night east of San Quintin.

The morning of the 30th the party finished its last food. Groups were sent out in search of more, but one by one they returned through the day without any luck. When the last group looking for food came back with none, it was decided that the party should break up into small groups and try to work into Bataan. From the way the situation appeared in the north, if a stand were to be made anywhere, it would have to be in the Bataan Peninsula, as called for by the old plan of defense.

A Scout, two Igorots and myself started south. The first night we met an American officer out of the 26th who also had been separated from the regiment the night of December 22d and was still trying to find some unit to join. Two days later another American officer from the 91st P. A. Division joined us. His outfit had been scattered in the battle of Pozorrubio, Pangasinan.

Travelling mostly at night, the six of us started working our way south. Down the east side of the Luzon plain the highway ran close to the mountains through which we were making our way, and many times from a distance we saw column after column of Jap tanks and motorized infantry moving south. At whatever house we stopped, regardless of the hour, the owner would cook food for us. We found then and many times later that one of the finest traits of the Filipino is his hospitality. Sometimes when passing along, a native would run out from his house and give us a chicken or some eggs, or bananas or the like. The natives always asked when the "aid" was coming; when and where would the American forces land?

On the other hand, (as in all of the other countries occupied by the Axis powers) there was a certain element who had become fifth columnists for the Japs. Stories were heard of both Americans and Filipinos who were betrayed by these traitors.

In the vicinity of San Jose, Nueva Ecija two American engineers from Baguio joined us. There was no reliable news as to where the fighting was going on in Luzon or anything that was happening outside of the Philippines. In the back districts through which we had

Route taken by Major Whitehead from Luzon to Panay.





Photo, Courtesy Commonwealth of the Philippines

"In central Luzon we passed through many towns similar to the one shown here. Towns were often avoided."

to travel, such a thing as a radio was unknown, and often the natives did not even speak English. On the 2d or 3d of January, 1942, a Filipino told us that Manila had fallen. We did not believe him. A week later we found that he had told the truth. While travelling southward day after day, we picked up rumors here and there until we slowly realized that all of the remaining American forces had been withdrawn into Bataan and Corregidor.

Often at night large fires could be seen in barrios along the way. In reply to our questions, the natives invariably gave the same answer—the Japs were burning their dead. Sometimes as many as 30 truckloads of dead in a day were reported to us as being brought north to be burned. A small amount of the ashes of these mass cremations were put in small boxes and sent home to the relatives in Japan.

One American of our party dropped out near Sibul Springs, Bulacan. The rest of us believed that there might be some chance of getting onto Corregidor if we could get down close to the Manila area.

On the 20th of January we arrived in Montalban, Rizal, about 40 kilometers east of Manila. Our trip from Baguio had taken nearly a month. In a car, and using the highway, it would not have taken a full day.

In the vicinity of Montalban there were 10 to 15 Americans—soldiers, sailors, engineers, and businessmen. Some of them had already learned that their families had been interned by the Japs in Manila. None of us knew what the next move should be, or what was best to do. Several Filipinos, sent out on different routes to find a way to Corregidor, were never seen or heard of again.

The guns from the Bataan Peninsula could be heard night and day, yet there was not a chance of getting there. The Japs were everywhere—in the towns and on highways. Even that early in the war, it was not prudent to stay in one place very long.

From the radio we heard that there were American forces still intact on the Island of Cebu, south of Luzon. Three of us decided to try to get there.

The hike down from northern Luzon, along with the diet of rice and haphazard sleeping, had been exhausting, but after a 10 day rest we were ready to move again. The night of January 30th we left our camp in the hills north of Montalban and started south toward the Tayabas coast. There was a full moon, which made night travelling easier. The natives continued to feed us and guide us wherever we stopped. Hearing that there was a bakery in the town of Antipolo, Rizal, we went there to get some biscuits. (More than anything else we craved bread, which was almost impossible to get.) While sitting in the bakery two truckloads of Jap soldiers came into the town. The natives hid us and got us out after dark.

On the north shore of the Laguna de Bay we had a treat. A prominent citizen there had us for dinner, and his hospitality included gifts of bread, American cigarettes, and a good drink. American cigarettes at that time were selling for \$1.00 to \$2.00 a package.



Photo, Courtesy Commonwealth of the Philippines

"Much country of this type is found in southern Luzon—from the Laguna de Bay to the south Tayabas coast." It was on the Tayabas coast that Major Whitehead and his companions were discovered by the Japs. Only he escaped.

From Laguna de Bay we took an outrigger south across the bay and landed in the town of Pila in Laguna Province. From there we hiked to Nagcarlan, Laguna, and across the mountains southeast to Tayabas, Tayabas.

On the 9th of February we were in a small barrio of Antimonan, Tayabas. We had just finished lunch when, at about 1400, the natives around yelled that Jap soldiers were approaching. We had been told when we entered the barrio that there were pro-Jap Filipinos and Jap soldiers around, but there had been so many such warnings without anything coming of them that we had given little weight to this one.

When the natives started running and yelling one of my companions, who was pretty sick from fever, and I were sitting inside a shack, the other American was out-



side watching. After yelling into the shack for us to get going he disappeared. The American with fever had his rifle lying beside him, and all that he had to do was pick it up and run. My rifle was in the far corner of the shack, and by the time that I had gotten it and was outside, my two companions were both out of sight.

Earlier, before eating, I had taken a walk and as a matter of habit had looked around for a place to duck into in case of a surprise. To the north I had noticed a thick forest. Outside the shack the Filipinos were running, yelling, and pointing back of them. I grabbed my pack and took off. Before I had gone many steps the firing started. I recognized the now familiar high-pitched crack of the Japs' .25 calibers, but as usual they were not shooting too well. I dropped my pack and before long was in the cover of the forest. It was an hour before I stopped to rest. Having travelled a good part of the way in stream beds, I felt fairly confident that the Japs could not follow me.

Shortly after the first shots were fired in my direction, I heard the firing of 10 or 12 rifles which continued for about five minutes. I wondered at the time if the Japs were shooting the natives.

My two American companions and I had a previous understanding that if ever we were scattered we would assemble at the next place on our route. Not knowing a loyal native from a disloyal one, I decided not to inquire for the whereabouts of the other two, but to continue on to the next barrio alone.

With the help of a compass, I started south at dark being careful to keep off the trails. Getting tired of breaking through the forest, toward morning I got on a trail, and before many minutes nearly ran into a patrol. The Japs were not very alert, which was the only reason that I was able to get off the trail and into some bushes. At daylight I came to a nipa shack and asked for breakfast, then spent the day hiding in a banana grove. About 1600 I started south again, and this time kept as much as possible in the undergrowth of the forest.

At dusk I came to a nipa shack and stopped in search of food. I had not seen anyone all day and had no idea what the Japs were doing. Recognizing me as an American, the owner of the house became quite nervous and motioned me to follow him to a nearby bamboo thicket. He could not speak English and my use of the Tagalog dialect was not good, but he got the idea across that there were Japs around, and for me to stay hidden, and he would bring something to eat. I did not know whether to trust him or not. This was one time that the chances of getting out did not look very good.

Soon the man returned with some rice and another Filipino who spoke English. This man told me that some 50 odd Japs had been sent into this area that morning and had been searching all day for an American. He said that the day before a patrol of Japs had surrounded two Americans in a barrio to the north, had killed one and wounded and captured the other, and that a third one had gotten away. During the scrap two Japs had been

killed and one wounded. This news of my friends was startling, as all afternoon I had expected to run into them.

Then came a gift from heaven—undoubtedly in answer to the many prayers that I had been sending up in the last 24 hours. The Filipino told me that about a kilometer away down in a lagoon was a banca, and that he knew two men who would paddle me across to the island of Marinduque where there were no Japs. I did not believe it, but pretended that I did, and we started. Feeling our way down a pitch-black trail, the Filipinos talked in whispers and grunted every time I set a stone rolling. In half an hour we were beside the lagoon and they showed me the banca made out of a log about 15 feet long and two feet wide. Then they hid me beside the trail while they went after the boatmen.

Before long the boatmen arrived, and we started to haggle about the price of the ride. Under the circumstances I was not difficult to deal with and by 2200 we were in the banca gliding down the lagoon toward the sea. The boatmen were on their knees—one at each end of the banca. They neither talked nor smoked, and they were careful to see that their paddles made no noise against the sides. With their eyes watching the shores incessantly, they glided the banca through the darkness. The trees on the banks cut out what little starlight there was. The only light was the phosphorus in the water stirred up by the paddles; the only noise was the trickle of the water off the paddles.

We glided out of the lagoon into the sea. The tension was off and I fell asleep. At dawn, when we headed into shore, I was surprised to find that we were still along the coast of Luzon. It was necessary for us to follow the Bondoc Peninsula south until we got to a position which gave us a short hop across to the island. On the beach we roasted bananas and ate them with sugar cake. Then, still keeping close to shore, we started south again.

Shortly after dawn on February 12th we landed on Marinduque Island. It was hard to believe that there was any place where there were no Japs. The town of Santa Cruz was as quiet and peaceful as any such town had been before the war. A few casual questions were asked about Luzon and the Japs, but no one seemed seriously concerned about it. Everyone was sure that the American "aid" would be in the Philippines before the Japs got as far as this island. My walk from the beach caused quite a crowd to gather. In the first place, I had a two months' growth of beard which always aroused considerable curiosity among the natives who do not have beards. In addition, the sight presented was something worth seeing. There was an American officer, barefooted, and wearing a pair of boatman's trousers that came up to his knees, a pink silk chemise, and a straw hat three sizes too small perched on the top of his head.

One of the citizens of the town entertained me and served hot coffee and an egg sandwich prepared to my



specifications—which consisted of a half a dozen eggs between a loaf of bread. After that I was given a bottle of beer, some Filipino cigarettes and a pair of shoes.

In the afternoon a Philippine constabulary officer arrived in town. The feeling of the constabulary commander about the Japs was different from that of the people. He had about 40 soldiers to protect the whole island and how to do it when the time came was a matter of serious concern to him. And since he was unable to contact his commanding officer, who was on another island, he consequently had no money with which to feed or pay his men.

I spent five days on Marinduque during which time I obtained a new outfit of clothing. The garrison had a radio, but it was impossible to contact any other island where American commands were reported.

It had been reported that inter-island boats were stopping at different towns on the east coast of the island of Mindoro and picking up supplies to be taken to Corregidor. I decided to try to catch one of these boats, and about 0100 of February 17th sailed on a small *batil* (a type of native sailing boat) for Pinamilayan Mindoro. In the middle of the morning we beached, and I went to the Philippine constabulary headquarters to stay. They had no information on boats going to Corregidor but did say that there were Americans on the island of Panay.

The constabulary was in much the same state as those on the previous island. The commander did have a definite plan, however, for falling back into the hills when the Japs landed, and from there he intended to carry on guerrilla warfare until help arrived.

After three days at the constabulary I hopped on a truck going to the town of Bangabong about 30 miles to the south. From there I caught a sailboat going to Panay Island and arrived there the afternoon of February 22nd.

As the boat neared the beach Filipinos on shore signaled us to lower our sails. Before long they were aboard inspecting us. They were the civilian home guard, and I found later that they were organized throughout the island, primarily to watch the coast.

The chief of police of the town took me into his custody with the suspicion that I was a German spy. From time to time around the islands Germans had been reported posing as Americans. Also, incidentally, German officers had been reported seen by the natives landing with the Japs on different parts of Luzon.

After persuading the chief of police that I was not a spy, I caught a ride the next morning to the headquarters of the 61st Philippine Army Division. American officers who had been sent as instructors to Philippine Army units in August, 1941, were then in command of those units. This was the first organized unit with Americans in it that I had seen for two months. It was a great treat just to talk with them. Also, they still had a few luxuries such as cigarettes and canned food and were still eating bread and drinking coffee.



Photo, Courtesy National Geographic Society

"This is a typical outrigger, similar to the one in which I sailed from Bongabong, Mindoro, to Panay, February 21st and 22d, 1942." At that time no Japs had landed on Panay.

The first week on Panay I spent in Iloilo City—getting a few necessities and gaining a little weight. It was hard to believe that I could really ride in an automobile and walk around the city without having to wonder if there were Japs around the next corner.

At the end of the week I went to the town of Janiway in central Iloilo Province, and reported to the headquarters of the 63d Philippine Infantry Regiment, with which I was to serve as S-3.

During the first days of the war everyone had been hopeful that the Americans would get through to the Philippines, but by that time—the first of March—almost everyone felt that it was only a matter of time before the Japs took over completely.

The presence of these soldiers throughout the southern islands, however, denied to the Japs the use of the islands from the outbreak of the war until about the middle of April, 1942. Till the very last these islands supplied Corregidor and Bataan with food.

**EDITOR:** Major Whitehead's account of his experience as an officer with the Philippine Army on Panay—Mar. 1-May 25, 1942—will appear in the September-October issue of *The Cavalry Journal*.





Photo, courtesy, *Marine Corps Gazette*

"From the point of view of patrolling, all jungle swamps are undesirable. . . . Water depths vary from a few inches to well over a man's head and submerged roots make tripping a persistent probability."

The author, Assistant G-2, Corps Headquarters, "Somewhere in New Guinea," participated in jungle operations with the Australians as well as in the recent Hollandia landings.



# Eyes, Ears and Nose

## In Jungle Patrolling

IN order to appreciate the unique importance of eyes, ears and nose in jungle patrolling, as compared to other types of patrolling, it is necessary first to appreciate the relevant terrain problems presented by the jungle, and second to know the Jap's pertinent strengths and weaknesses.

### TERRAIN PROBLEMS

Tropical jungle, in the broad sense, includes rain forests, swamps and patches of kunai grass. Rain forests are normally found anywhere in jungle areas from the flat coastal plains to mountainous areas up to about 5,000 feet. Over 5,000 feet, rain forest usually turns into moss forest—a moss enshrouded tomb of rocks, trees, and minor vegetation, barren of all wild life. Since most of our operations against the Japanese have been in limited coastal areas, moss forests have played an insignificant rôle. The sole exception was a portion of the Owen Stanley Campaign in 1942.

The vegetation of rain forests varies in thickness from densely tangled roots, vines and scrub to more or less open forest. In areas of thick vegetation, it is often impossible for a man or a small patrol to move off the native tracks (assuming there are some) without cutting their way with a machette. Troop movements in such areas are, of course, completely trackbound. In the more open areas, movement off tracks is, in varying degrees, easier.

All rain forests are characterized by thick overhead cover which makes for a dark, dank, dripping interior. Tracks are always muddy.

Kunai patches of varying sizes are found scattered throughout rain forests. Kunai grass often grows to over twelve feet; however, the average height is probably somewhere between three and five feet. Visibility is dependent on the height of the grass, while movement, generally speaking, is relatively easy.

Swamps are common on costal plains and are particularly bad near rivers. From the point of view of patrolling, all jungle swamps are undesirable. Their dense vegetation negates visibility and makes movement difficult. Further, water depths vary from a few inches to well over a man's head, and submerged roots, etc., make tripping a persistent probability. Lastly, ravenous swarms of insects and a formidable assortment of crocodiles and snakes add emphasis to the undesirability of swamps.

If any one characteristic of jungle terrain may be

selected as dominant from the point of view of patrolling, thickness of vegetation would probably be named.

Thickness of vegetation frequently cuts down all visibility to a matter of feet which means that movement on tracks is subject to ambushes or mutually unplanned face-to-face contacts. Any movement off the tracks is tediously slow and in constant danger of loss of control and/or direction. Further, this element of vegetative density has been in the past both a direct and indirect factor in preventing the collection of accurate material for mapping purposes. Today, the result is that any and all available maps are "fairly accurate" at best, with current aerial photos limited in usefulness because of the thick overhead cover found in all but kunai grass.

### JAP STRENGTHS

And now for the Jap's pertinent strengths and weaknesses.

The Jap has long recognized the importance of patrolling in jungle warfare, and has made very much a point of stressing it in his training. In every operation to date, he has capitalized on this training. It follows, that his counterpatrolling is also excellent.

Another Japanese asset is his patience and excellent fire discipline. Stories of individual Japs standing chin-deep in swamp-slime, patiently watching for many hours in order to select an important individual (such as a unit commander) at which to snipe, are legendary. Also legendary is the Japs' skill and application of camouflage and fire discipline in concealing the actual strength in given areas.

Still another Jap strength is his utilization of natives. Natives, of course, know the jungle as our American Indians knew the forests of the "American wilderness." The average natives are dirty irresponsible savages, but on patrol they are invaluable. They can track a shadow, pass through impassable terrain and invariably see the invisible.

We also use natives in our training and operations. In Papua, because most of them spoke only their native dialect and pidgin English, the Americans and Aus-

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*by Major Robert M. White, II*

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trilians had an advantage over the Jap, who with the exception of a few English speaking individuals, had to converse with natives in sign language. In Dutch New Guinea the natives speak Malayan, so the Allies and Japs probably break about even.

Unfortunately, or fortunately, natives are not very well informed about such worldly matters as totalitarianism vs. democracy, the Four Freedoms, or the Greater East Asia. Their only interest in the strange yellow and/or white invaders of their jungles, is the rice and tobacco paid for services rendered. As a whole they have no loyalty as we know it. However, the point to be remembered is that while their loyalty is not iron-clad, their value in patrol work is pure gold.

The next pertinent Jap strength is his knowledge of our weaknesses. He dotes on our national habit of cigarette smoking and also on our loud talking when we think "there is not a Nip in miles" (famous last words).

It is difficult to classify specifically this next point as a strength or weakness but, whichever it is, it is paramount in jungle operations. Above all else, the Nip can be expected to do the unexpected. Time after time, he has gone to great expense in lives and matériel, to attempt the obviously impossible or to gain some hopelessly meager end. Briefly, when patrolling against him, be ready for anything. It will probably happen.

#### JAP WEAKNESSES

One definite Jap weakness is his aversion to hand-to-hand fighting. Despite his much touted prowess with the bayonet and skill at jujitsu, the fact remains that he does not like to tackle white men who average more weight, height and reach. It is true that a bunch of Nips can get together and work themselves into a hysterical pitch of patriotic fervor and, amid the screaming of Banzais, charge into the maw of our machine guns or even overrun our forward positions. But patrol work does not usually lend itself to the necessary revival meetings for these spiritual shots in the arm. (Admittedly, there are exceptions to the above weakness, and because they are exceptions they receive a maximum of publicity.)

Another Jap weakness is his inability to absorb surprise. For some reason, probably his innate lack of emotional balance, the Nip goes completely berserk when caught with his guard down. Squealing like pigs and scattering like quail is usually their SOP for the unexpected attack. Just to keep the books straight, however, it should be pointed out that if he gets a respite, he will quickly reorganize and start thinking and doing something about saving face.

Last of this general list of Japanese weaknesses is the fact that he does not like jungle operations any better than we do. All too often accounts have painted a picture of the typical Jap GI relishing the eternal rain, the stench, the mud, the bugs and the heat that are the jungle.

With the above points about the Jap and the jungle in mind, we are now ready to illustrate the influence these points have on the importance of eyes, ears and nose in jungle patrolling.

#### EXAMPLE OF A TYPICAL JUNGLE PATROL

Let us assume a typical tactical situation and one of its typical patrol missions:

A beachhead has been established, and after the usual counterattacks, the enemy has withdrawn, at least temporarily.

As always, the task force commander wants more information regarding enemy activity and tracks leading to the beachhead perimeter.

The only available map is the usual aerial photomap with annotations made by a prospector who travelled through the area some five years ago.

Our particular patrol is given the mission of reconnoitering track No. 4 to track junction No. 4-6 and reporting within 48 hours: (1) enemy strength, composition and disposition on the track, and (2) general track information (such as time travelled over various sections, condition of bridges and/or stream crossings, steepness of grades, etc.).

The patrol will consist of one noncommissioned officer and seven men. It will be assumed that native scouts are otherwise occupied and will not accompany our patrol. Incidentally, the Jap favors using four or five men on patrol missions such as the above; however, our experience is that all conditions being equal, the fire power of eight men is practical insurance in case of unavoidable contact.

In briefing our patrol leader, it has been pointed out that track No. 4 is the only known track covering the general route and will have to be used on the return trip. The track is reported to be tortuous, and since our photomap and annotations agree that it starts out through a swamp, crosses a patched kunai area and enters a thick rain forest, it seems logical to expect all the handicaps of a tortuous track at least through the swamp and rain forest.

After being briefed, a process during which the patrol leader received such routine details as time of departure, etc., our patrol leader calls together his men, inspects them for physical condition, gives them the mission, the uniform and equipment to be worn, the amount of ammunition and rations to be carried, and tells them to reassemble at an exact time (usually about five minutes before the time of departure).

On reassembling, the patrol leader again inspects his men, repeats the mission and makes sure that the chain of command is thoroughly understood. Different patrol leaders have various pet ideas or improvisations of which they usually remind their men at this time. A very practical example is the use of a less conspicuous signal for "enemy in sight" than the FM signal of up-raised rifle.



"A beachhead has been established and . . . as always, the task force commander wants more information regarding enemy activity and tracks leading to the beachhead perimeter." Photo shows landing at Cape Gloucester, New Britain, for second big invasion operation on the island.



Press Assn.

Leaving the outpost, the patrol enters the swamp in single-file formation, because the vegetation is too thick for the safer "wedge" or "diamond" formation. The track proves tortuous, so the interval between elements of the patrol is seldom more than a few yards. Obviously, any unexpected contact with the enemy on such a track will be more or less a face-to-face "six gun draw." Therefore, the No. 1 Point Man is the most efficient scout in the patrol and is armed with a tommy gun.

Even though the patrol is in single file formation, each man is assigned the same duties that he would have were a more open formation possible. For example, the No. 1 point man observes ground to the front, the No. 2 point man observes sniper to the front; the next two men (skipping the patrol leader who probably is concentrating on control and the terrain) observe ground and sniper, respectively, to the right; the next two men observe to the left, and so on throughout the squad with the tailing men observing ground and sniper to the rear. A "get-away" man, as such, is seldom designated until trouble develops. All too often the trouble will come from the rear in which case one of your point men may be the logical selection for a get-away mission.

The reason that it is possible for the Nip to let us get past him so that he can open fire on our backs, is, again, the denseness of the vegetation. "Observation" (EYES), such as ground or sniper to the right; means the close, thorough search for minute details such as newly barked root, newly bent grass or a broken twig, an unusual bend to a limb, a scuffed tree-trunk, etc. Actually to see a Jap hiding in thick vegetation would be a very rare experience, indeed.

As our patrol progresses, the going becomes harder.

The men are now wading in depths between their knees and waists; however, the track is well marked so there is little danger of getting lost. From time to time the point man halts the patrol for a "listening stop" (EARS). Wading through swamp, with its submerged roots and other obstacles, is noisy business, both for you and the enemy. Further, bird and insect noises or lack thereof may well indicate what lies ahead.

After about forty minutes, the patrol leader signals a break. The men are winded. There is no place to sit or lie down (one of many reasons that swamps are not used for troop movements of any size). The men lean against tree trunks and roots, always facing their assigned direction. One of the men is new on patrols. He lights a cigarette and starts griping about the insects. The patrol leader loses no time in making the man put out his cigarette, carefully dispose of the butt and the carelessly tossed match. In the stagnant or slow drifting air of swamps and rain forests, cigarette smoke may linger for hours. Any passing enemy patrol would be sure to note it (NOSE). Also, they might note the butt or match (EYES). As for talking, it interferes with listening (EARS).

Resuming its march, our patrol progresses slowly with careful observation and frequent listening stops. After about thirty minutes, the No. 1 point man halts the patrol and signals for the patrol leader to come forward. Ahead is the edge of the swamp and the first kunai patch.

The patrol leader looks over the situation and dispatches one scout to a nearby kunai knoll from which he can observe the terrain and track ahead. The patrol is then moved off the track and upon reaching dry ground some fifty yards from where the track enters the kunai (nothing would be gained by leaving footprints in ob-



vious places) (EYES), it goes into a diamond formation and takes cover.

While waiting for the scout to return, the men camouflage their helmets and gear with kunai. The patrol leader makes a note of time travelled and condition of the track in the swamp. Checking his map, he finds that this first kunai patch is about half a mile across and several thousand yards long. He decides to follow the track straight across it to the first copse.

The scout returns and reports that he saw no signs of the enemy, that the track looks dry and that the grass averages about four feet high. The scout further reports that it will be possible, because of the undulating ground, to approach within about 100 yards of the first copse without being observed from it.

Before moving out, the patrol leader assigns fresh men to the point, announces a maximum 50 yard in-

terval between elements and indicates their present position as a rendezvous area.

As the patrol approaches the first copse, it is halted and observation positions are selected and occupied. The copse looks innocent, so the scouts approach it under constant cover from a part of the patrol, while the remainder of the patrol continues observation to the rear and flanks. Observation (EYES) in kunai areas usually concentrates on such items as sudden flushing of birds, the bending of grass against the wind, and close scrutiny of areas in which the terrain has tactical possibilities.

The scouts enter the copse and on finding it clear, signal the patrol forward. Following the same routine of observation and reconnaissance of all suspicious areas, the patrol approaches the main rain forest shortly before sundown.

After the scouts have investigated the edge of the forest, the patrol takes up a position about fifty yards down-wind from where the track enters the forest. While the men are changing their camouflage from grass to tree or plant leaves and taking advantage of their down-wind position to enjoy a smoke, the patrol leader makes the necessary notes on time-traveled, condition of the track, etc.

Ten minutes later and with the best scout back in the No. 1 point position, the patrol resumes its march. The diamond formation is continued until vegetation necessitates closing in to a single-file formation. As the track becomes more tortuous the interval between elements is necessarily cut down.

Suddenly, the No. 1 point man halts the patrol and signals for the patrol leader to come forward. Ahead are footprints on the track. The patrol is advanced and goes into an all-around defensive position while the patrol leader and his best "tracker" inspect the footprints.

The prints are found to have been made within the past hour. Whoever made them came down the track and then turned back, deliberately smudging some of the footprints. Probably seven or eight men were in the group. Some of the prints look like American GI shoes. A careful search (EYES) is made in the weeds beside the track and a half smudged print of a shoe with a split toe is found. This print, of course, tells the whole story. The Jap likes our shoes. He probably had acquired some from our dead, came down the track and then as he back-tracked, deliberately smudged the Jap shoe prints.

There is no indication of hurry, so it is doubtful if the Nip turned back because he sighted our patrol. More probably, he was ready to bivouac for the night and is somewhere up ahead in the rain forest off the track. It is pretty much SOP for patrols in a thick rain forest at dusk, to confuse their tracks, then go into the bush for several hundred yards and get a good night's sleep knowing that they cannot be tracked down in the bush after dark.

"Kunai patches of varying sizes are found scattered throughout rain forests. Kunai grass often grows to over twelve feet; however the average height is somewhere between three and five feet." Rain forest is in background.

Press Assn.





"Thickness of vegetation frequently cuts down all visibility to a matter of feet which means that movement on tracks is subject to ambushes or mutually unplanned face-to-face contact." Here a patrol pushes through a New Britain jungle in pursuit of Japs. The patrol leader carries a hand grenade as well as a submachine gun.



Press Assn.

Our patrol leader glances at his watch and notes that he has about an hour and fifteen minutes of daylight left. The adjacent terrain is favorable, so he backtracks his patrol and, after making a false entrance on the up-wind side of the track, sets up a bivouac some three hundred yards down-wind from the track.

The leader then dispatches four men to spend the next forty minutes seeing if they can learn anything about the enemy patrol. They return just as darkness is falling, and report that they located the enemy patrol. It is bivouacked about two hundred yards up-wind from the track, our sub-patrol had smelled their cooking fire (NOSE). Our men could not get close enough to see how many they numbered, but from their talking, estimated about ten (EARS). The track up ahead bears to the right, skirts a hill and then enters a stream bed. . . .

This is a good place to discontinue our illustration of the practical application of eyes, ears and nose in jungle patrolling. Any further details would be mere variations in application except in case of special developments which are beyond the scope of this article.

#### NIGHT PATROLLING

A couple of points should be mentioned about night patrolling. While ears are important in night jungle work, they require careful training and must be used in conjunction with eyes.

To begin with, the jungle at night is never quiet. A "deathly stillness" would be unusual, suspiciously so. Normally, the jungle at night is a symphony of bird calls, humming insects, the croaking of frogs, cricket "scratchings," the startling crash of palm fronds, etc.

On patrol or outpost, a man must know this "symphony" and must be able to detect the faintest variation in it. But knowing the "symphony" is not enough for jungle night work. You must also know how to move through the jungle without causing more than a minimum of variation in night noises. Herein, night vision becomes important.

Probably the most important thing to remember about night vision is that it takes your eyes about a half-hour in darkness to reach a maximum efficiency. It must be borne in mind, however, that the slightest light (even the pale reflections of a radium watch dial) temporarily impairs night vision. Lastly, it is easier to see an object at night if you do not look directly at it but rather to one side of it.

All of these points are "minor details." Yet, in jungle patrolling, magnitude of minutiae asserts itself via eyes, ears and nose, in tipping the scale between success or failure.

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*"Patrols assume a greater importance in the jungle than elsewhere, and men sent out on such missions are examined beforehand to make certain that they are in top physical condition before assuming a hazardous mission."*

*"To add to the difficulties of jungle fighting, much of the terrain in which the patrols move is virtually uncharted, and maps are frequently of little use. The ground has to be fine-combed a little at a time so that no Jap machine-gun nest is passed undetected."—Report of an observer with the Americal Infantry Division, Bougainville Island, May 1944.*

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Sovfoto

Soviet cavalry moves cross-country, over rivers and swamps, through woods and appears suddenly in the enemy's rear or flank. Men are armed with tommy guns, automatic rifles and pistols. Cavalry led the rapid advance on Odessa.

### Kuban Cossacks\*

by Major V. Kirsanov

THE successful advance of the Red Army's main forces — especially infantry and artillery — upon Odessa and the Dnestr was greatly facilitated by the skilful maneuvering of the Kuban Cossacks. In spite of the spring thaws and rain-sodden roads and fields, they advanced hundreds of miles, carried broad and swollen rivers in their stride, and fought always in masterly style. Often after swimming a river they would appear suddenly in the enemy's rear, cut his lines of retreat and, charging the retreating columns, hew or trample down all who refused to surrender.

As a rule, when dislodged from their intermediate lines, the Germans and Romanians tried to form a column and resume their hasty retreat westward. But the Cossacks, following hard on their heels, gave them no chance to consolidate, but penetrated again into the rear, split up the enemy forces, and disrupted coordination between them.

The dashing attacks by cavalymen, in their black shaggy capes with their crimson hoods streaming behind them, struck terror into the heart of the enemy. And

always the enemy's attempts to break contact with the pursuing Cossacks failed. They appeared everywhere, and nothing was able to stop their impetuous onslaught.

### PURSUIT

When the enemy's defenses were first breached and he began to retreat, the Cossacks broke through into the open and sped forward. In spite of the impassable roads, there were days when they advanced as much as 30 miles.

On one occasion, Captain Eugene Kornilov's Cossacks, after executing an outflanking movement, dislodged the enemy from two large villages lying respectively to the left and right of an important highroad. The Germans took advantage of the gathering dusk to form a column and speed westward. Kornilov guessed the enemy's intention and proceeded along a parallel country road to cut him off.

At dawn the Cossacks swerved onto the highroad near the village in which a German garrison was stationed. They divided into two detachments which planned to attack simultaneously both the garrison, peacefully asleep in the village, and the column trying so hard to escape pursuit. One detachment of Kubans, charging into town at the gallop, appeared so unexpectedly that the officer on duty had no time in which

\*By cable to *The Cavalry Journal* from War Department, U.S.S.R., Moscow, May 24, 1944.



# THE ROAD TO ODESSA

to give the garrison an alarm, and most of the German soldiers and officers surrendered. Meanwhile, the other detachment just as boldly attacked the column still on the highway and worn out by the night's march. After a brief and vigorous fight two enemy battalions were demolished.

Continuing their advance, Kornilov's Cossacks by midday reached a town and railway station where a large enemy force was concentrated. Knowing the value of surprise, Kornilov decided to attack straight from the march. While the two-hour battle for the railway station was proceeding, another cavalry detachment burst into the town from the west. The Germans made a desperate stand and hurled panzers and self-propelled guns against the Cossacks. But it was too late. The Cossacks had the initiative. They split up the enemy's forces and destroyed them piecemeal.

Having rested their horses after this battle, Kornilov's Cossacks again sped forward, and emerged in different places on roads along which the enemy was still retreating. Again attacking enemy columns and transports, the Cossacks compelled the Germans to abandon arms, ammunition, and motor vehicles.

## A TANK-CAVALRY RAID

In their bold raids into the enemy's rear, the Kuban Cossacks often cooperated with tanks. One day scouts reported that at a certain railway station the enemy was loading tanks, ammunition, and equipment onto trains. Soviet tanks and cavalry set out together on a joint raid.

A few hours later, the tanks reached the station, opened fire on the trains and threw the Germans into complete confusion. At this juncture Lieutenant Anatoly Kozlov's cavalry squadron suddenly invaded the station and began hewing down Germans. Many of the German soldiers opened fire with tommy guns and machine guns from behind the trains. Thereupon the cavalrymen dismounted and, following behind the tanks, soon cleared the station and captured much rich booty.

## FROM THE DNEPR TO THE DNESTR

The march of the Kuban Cossacks from the Dnepr to the Dnestr abounded in instances of supreme courage and daring. They advanced day and night and often engaged the enemy straight from the march. Wielding their sabers, they often assaulted enemy strong points on foot; and they also attacked enemy under cover of their own tanks.

The Germans learned at a heavy price that Soviet cavalry is a formidable force and that the sudden appearance of Kuban Cossacks on the roads of war throws the enemy into complete consternation.

## General Pliyev's Cossack Guards\*

by Bayev

**D**URING the whole course of the war, cavalry probably never had to display such activity as during the Soviet advance through the Ukraine. As enemy

\*By cable to *The Cavalry Journal* from War Department, U.S.S.R., Moscow, May 6, 1944.

Lt. General A. Pliyev, commander of a unit of Cossacks from the Don steppes, earned an outstanding reputation in the Red Army for victories gained against the Germans on the road to Odessa. His rapid pursuit frustrated the enemy.



Sovfoto Radiophoto





Sovfoto Radiophoto

A Cossack unit on the march. Its tireless members can ride for many hours without rest and often go into battle straight from the march. Sudden appearance of cavalymen in enemy's rear or flank creates panic among enemy troops.

defenses crumbled everywhere, mobile forces were afforded broad scope for action. Cavalry forces under General Pliyev, Hero of the Soviet Union, particularly distinguished themselves in a number of widescale offensive operations.

When the enemy's defenses were broken and his troops began to withdraw, General Pliyev's Cossacks proved their worth and excellent training in their hot pursuit of the routed German Sixth Army. On the muddy spring roads, in coordination with other units, they dislodged Germans from intermediate positions, and inflicted heavy losses in men and arms.

#### ENCIRCLEMENT

During these battles, cavalry displayed model cooperation with infantry. When Soviet infantry units enveloped Germans in a half circle the Cossacks, dealing a stunning blow from north to south, split the enemy force in two. Despite the strength and numbers of the German force and despite the support of the Luftwaffe, isolated German divisions sustained heavy casualties and soon ceded their favorable positions.

Mounted troops fought with particular foresight and daring during the encirclement of Germans in the area of Bereznegovatoye. Retreating in columns, the enemy attempted to shake off the Soviet troops, but the Soviet units caught up with the Germans and forced them to take up positions for defense. Meanwhile, the horsemen under General Pliyev emerged in the rear of the Germans and, cutting off their retreat, completed the encirclement.

After that, the German command decided to break through the Cossack lines and, under cover of tanks and self-propelled guns on the east and northeast, moved its main force westward and southwestward. But in both directions, the Germans encountered deadly fire from guns and mortars, particularly from self-propelled guns. The enemy was stopped and undertook a number of desperate counterattacks but without avail. The German grouping could not get out from the ring however much it tried. Only some staff officers and small groups of soldiers managed to escape through steep ravines during the night, and they abandoned all of their armaments in doing so. The main force was annihilated.

German divisions established northeast of the village of Bashtanka met a similar fate. There the paths of retreat were also cut. The Germans, forming in columns, attempted to force a gap with mobile detachments. A fierce battle raged all night. Enemy mobile detachments and motorized forces made one final effort to force a passage to a railway in the general direction of Nikolayev. Enemy units were particularly active in an effort to break through to the village of Shevchenkivsky. This attempt, too, failed in the face of fire from Cossack guns, machine guns, and tommy guns.

While the Germans launched their counterattacks, several cavalry units moved up to the village of Shevchenkivsky unobserved and there established themselves. In the morning the German advance units were allowed to pass unharassed, and the main force columns following in their wake fell unaware into the trap.



Then began the extermination of the enemy with all means at hand. The Germans counterattacked in various directions but to no avail. Cossacks, supported by tanks and infantry, dealt flanking blows, then split the enemy and annihilated isolated groups. The commanders of two German regiments that had succeeded in forcing a passage westward, hurried to inform their command that they had escaped the ring, but in the approaches to Ingul they were attacked from the rear by Cossacks and annihilated.

#### PURSUIT

Soon after this incident the Cossacks again displayed their particular fighting qualities. In their main rôle of pursuit, they frustrated the enemy's attempt to establish himself in intermediate positions, particularly in water barriers, and forced the Germans to retreat to Odessa.

Interesting in this respect were the battles fought on March 31st. Carrying both artillery and mortars, General Pliyev's units galloped to Berezovka. The Germans called in their infantry, tank, and artillery reserves, which established themselves in strong points along the highway. Stubborn fighting developed, and the Germans, supported by air force undertook a number of counterattacks, but the Cossacks' increasing pressure dislodged the enemy before the end of the day. The Germans, falling back to Coppice, surrounded the railway embankment in a half circle and opened up a barrage of fire. Following this, one Soviet unit by-passed

Coppice and dealt a blow in the German flank. Stunned by this unexpected assault, the Germans left all of their guns and fled. During this fighting around Berezovka, the Germans sustained heavy losses in killed and prisoners.

Developing this success, the units of General Pliyev advanced approximately 20 miles in 24 hours and emerged on new German positions. Although the rugged terrain was favorable for the German defense, these positions had to be taken. The Cossacks devoted all of their efforts to bringing up artillery, ammunition, and fuel over poor, muddy roads. The German defenses were soon broken, and the Cossacks, fighting incessantly in rain and sleet, continued their advance to the southwestward. The plan was to emerge on the Dnestr, envelope the enemy on a wide front, and cut off the German troops in Odessa.

On one sector during this advance the Cossacks fought their way to the rear of the Germans and appeared on the river opposite a big village. The squadron under Captain Romanuka forced the river and massed in a ravine without being observed by the enemy. There the Cossacks dismounted and wriggled up to the village, which they discovered was occupied by the enemy. Romanuk's men opened fire, and fighting developed. Meanwhile, the whole unit of Cossacks forced the river and after making a circuit of the retreating enemy column, dealt a decisive blow from the rear. The raid was so sudden that not even the German staff had time to get away, and all officers were taken prisoner.

Cossack on the march halt to water horses. These mounted units often force a river to deal decisive blow to enemy's rear.



Sovfoto Radiophoto



# Cavalry in This War\*

IN recent weeks, the official German communiqués have repeatedly mentioned encounters with powerful formations of Soviet cavalry as well as successful operations by cavalry units of our own (German).

## CAVALRY IN WORLD ARMIES AFTER WORLD WAR I

After the First World War, in view of increasing motorization, debate was rife regarding the justification of the further employment of cavalry. England, except for a few squadrons of cavalry in her home army for parade purposes, had given up cavalry completely in favor of motorized troops. France was engaged in transforming her cavalry regiments into motorized units (dragons portés). Soviet Russia, who, in her revolutionary wars and her Polish campaign, had had good results with her mounted forces, clung to powerful cavalry formations. Poland and Romania followed her example.<sup>1</sup> Italy chose a middle course. Germany, by the treaty of peace which had left her relatively powerful cavalry forces (because they were allegedly harmless) but which had imposed close restrictions on its motorization, found herself with her hands tied.

After again obtaining her military freedom, Germany

organized the mounted units from the hundred-thousand-man army into cavalry regiments, as a foundation for the reconnaissance battalions that were to be created in case of mobilization, and these, combined together into a division, constituted a sort of army cavalry for employment on the eastern front. Nowhere did there exist any doubt that the days of mass attacks were past, that from now on it was the mission of the cavalry to get its weapons in a hurry over every sort of terrain and into action at the decisive spot.

## GERMAN CAVALRY IN WORLD WAR II

And so, in the present war, cavalry has in truth come up to the expectations that were entertained with regard to it in those places where—as in the nearly trackless expanses of the eastern theater of operations<sup>2</sup>—marshy and brush-covered terrain, sandy steppes, and snow-covered areas render the advance difficult for its sister arms, where rivers and streams constitute serious obstacles to these other arms yet can be crossed without bridges or ferries by the cavalry, by swimming or fording. *It was especially to the German cavalry division that we were indebted for the quick crossing of the Narev, the occupation of Holland, and the blockading of the fortified area of Paris on the west at the beginning of the war.*

*The reconnaissance battalions and the cavalry platoons of the infantry regiments, by close-range and combat reconnaissance, were able to a great degree to complete the picture that had been obtained of the enemy by means of air and motorized reconnaissance. Also a few minor attacks were successfully carried out by them all alone.*

Romanian and Italian cavalry units also have done outstanding work in the eastern theater of operations. Italian cavalry even carried out a major attack on Soviet infantry.

## SOVIET CAVALRY

The Soviets have made very heavy use of their cavalry, and made a great deal over it. The Swedish review, *Svensk-Ryttartidning*, published recently, in an interview with a Soviet cavalry officer, noteworthy details regarding its organization and methods of fighting. We read that "the cavalry of the Soviet Union has at its disposal, in addition to the usual light and heavy weapons, also its own tanks, planes, armored trains, artillery, and engineers. Its reserves are trained, even in premilitary courses for youths, in the peculiarities of the branch of service in which they are to be employed in the future.

<sup>2</sup>See "German Cavalry in Russia, 1941"—a short account of German cavalry protecting the flank of an armored corps from the Bug River to the Pripet Marshes, *THE CAVALRY JOURNAL*, May-June, 1943.

### EDITOR'S NOTES:

<sup>1</sup>Although Poland and Romania retained large cavalry forces, these troops were ill-equipped and trained only in cavalry tactics that were entirely inadequate for modern war. See *THE CAVALRY JOURNAL*, page 8, January-February, 1940—Polish cavalry armed with lances and minus supporting weapons; also, "The Tank-Cavalry Team," January-February, 1944, which describes the development of modern Soviet cavalry tactics based on the principles of the Cossack *lava* and American Civil War *raids*.

\*Reprinted by courtesy of *The Military Review*. Translated at the Command and General Staff School from a German article in *Münchener Neueste Nachrichten* 14 March 1944.

## Cavalry on Soviet Southern Front

**MOSCOW, July 19**—By M. S. Handler, United Press Staff Correspondent—*Marshal Ivan Konev's First Ukrainian Army, pouring through a 124-mile hole in Germany's southeastern defenses, outflanked the fortress of Lwow from the north and prepared to smash across the Bug River into the puppet Government General of Poland today in a new offensive aimed squarely at the Reich.*

*Marshal Konev, taking over the First Ukrainian Army, hurled his massed tanks, cavalry, artillery, and infantry against the outer defenses of Lwow four days ago on a 124-mile front.*

*German prisoners expressed amazement at the comparative ease with which the Soviets reached the "Prince Eugen Line" along the Bug.*



by *Lieutenant Colonel Benary,*  
*German Army, Retired*

They come mostly from the rural districts; hence have been used to horses from their childhood up.

"The horses of the Soviet cavalry may at times not possess a pleasing appearance, but they are inured to the inclemencies of the weather, possess great endurance, and are capable in every respect of fulfilling the task assigned to them. They are trained to remain standing where the riders place them. As soon as the rider has gone into position on the gallop and has separated himself from the horse by a leap over its head, his horse lies down in the protected position *behind* him (no longer, as formerly in the case of the Cossacks, in front of him as a sand bag and carbine rest). If the horses are to seek the shelter of cover farther to the rear, they are assembled loose back of the front and driven to the rear by a soldier who acts as a herdsman in the manner they have been accustomed to all their lives.

"The Soviet Field Regulations state with regard to the missions of the cavalry: 'The strategic cavalry is able to carry on the fight independently. It is thoroughly schooled to coöperate with infantry, tank, and air formations. Attack in any situation is the guiding principle of their action. On the flanks and in the rear of the enemy is where they should preferably be employed.'"

The Swedish review forgets that the Soviets have been able to employ their cavalry successfully only where terrain and weather were particularly favorable—where the cavalry plunged into areas in which the German points of resistance were widely separated. In those cases where they charged powerful formations, especially armored formations, they came out the losers.<sup>3</sup>

#### PRESENT INCREASE IN GERMAN CAVALRY

The combat strength of the cavalry at the disposal of the armies of Greater Germany, with which Cossack

<sup>3</sup>Facts belie the statements in this paragraph. Soviet cavalry has been successfully employed in large numbers from the mountains of the Caucasus to the plains of the Ukraine and more recently the approaches to the Baltic. The first outstanding defeat of a German force in this war was the rout of General von Kleyst's First Armored Tank Army by Soviet cavalry under Colonel General Cherevichenko at the first battle of Rostov, November 28, 1941. Other similar operations of Soviet cavalry since that time are too numerous to list here. See "Soviet Cavalry 1918-1943," *THE CAVALRY JOURNAL*, March-April, 1943. See editorial, same issue. See "Encirclement at Stalingrad," July-August, 1943; also "On the Road to Odessa" and "Vital Rôle of Soviet Cavalry," this issue.

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A German cavalry horse captured in Normandy is immediately utilized by American Rangers. Undisclosed numbers of German cavalymen and mounts were surprised by the sudden descent of paratroops. Germany has been increasing her cavalry as a result of her experiences on the Eastern Front. Russians report, however, the Germans lack tactical conception for proper handling of large cavalry units.

U. S. Signal Corps Photo

units have associated themselves, has been increased during the course of the present war. Their equipment with machine guns is about like that of the infantry regiment. In the National-Socialist Cavalry Corps, youths who are familiar with horses are being trained, and with the winning of the diploma the way is opened for them to enlist as volunteers in the cavalry. Future officers are trained at the Cavalry School. In the breeding of horses, efforts are being increased, on the basis of the lessons learned on the eastern front, to toughen the young animals.





# Breaking Through German R

by Major A. Bukirev, Red Army

WHEN retreating under the pressure of the Red Army, the Germans fight rearguard actions, accompanied by frequent counterattacks. At the same time they make every effort to strengthen their rear defense lines, at which they hope to stem the advance of the Soviet troops. To these lines they withdraw their main forces in order to prepare them to give decisive battle.

The Germans as a rule construct their rear defense lines beyond a river, or on a ridge of hills in front of a river. Such a line, if the enemy is allowed time to perfect it, may easily become a main defense line, behind which new rear lines are built. To break through a rear defense line demands considerable effort on the part of the attacking forces.

## INFORMATION AND RECONNAISSANCE

Long before the enemy's rear defense lines are reached, the attacking side must possess information regarding the character of the defense. Considerable knowledge may be gained from aerial photographs and from the examination of prisoners and deserters. This, however, is not enough. Recently, on one sector of the west bank of the Dnepr, a raid was organized into the enemy's rear. The tank troops which took part in the raid, besides inflicting heavy losses on the enemy, brought back valuable information regarding his defenses.

When the Soviet troops reached the River Boromlya they encountered stiff resistance at a prepared enemy defense line. This did not come as a surprise, but in order not to allow the enemy time to consolidate his position, and also with the purpose of reconnoitering his defenses, day and night reconnaissance was instituted. The reconnaissance parties included artillerymen. In addition, tank groups were detailed to conduct

reconnaissance in force with the purpose of ascertaining the disposition of the enemy's antitank guns. The Germans got the impression that the Soviet troops intended to attack their positions straight from the march, with the result that they disclosed their fire system and the location of their tank and antitank reserves.

From continual but brief attacks, reconnaissances and sorties, combined with constant air action, full information was obtained regarding the enemy's position and strength, and at the same time he was prevented from perfecting his defenses. Only after gathering all necessary data did the Soviet troops attempt to break through the enemy's rear defense line.

## FIRE POWER

Main reliance in effecting the breach was placed in the fire weapons. How carefully and thoroughly fire was planned and prepared determined how swiftly and to what depth the infantry and tanks would be able to penetrate into the enemy's defense positions.

When numerous targets have been reconnoitered, the attackers are liable to the temptation of attempting to neutralize all of them. In this, however, economy and restraint are advisable. It is impossible to neutralize absolutely every target. Fire must be so organized as to destroy the main link in the defenses, and the rest will collapse in due course. Fire should be concentrated on the main direction of attack. It must be borne in mind that scattered fire is like striking with the open hand, instead of the closed fist.

In the case of the break-through of the German's rear defense line on the River Boromlya, the artillery fire was organized as follows. In the direction of the main line of the contemplated attack artillery support groups were formed—each, one to two regiments strong. They

Sovfoto



This new armored reconnaissance car is a cross between the German Horch 7-wheeled car and the Russian Bronieford. A local inhabitant points out to the Red Army reconnaissance sergeant the route taken by Germans as they fled.



# Rear Defenses



Preslit

The Russian heavy mortars, M-38, 120mm, supplement the fire power concentrated for a breakthrough, support infantry.



Sovfoto

This self-propelled gun (probably a 107mm or 122mm) is mounted on a T-34 chassis. It is firing from behind the hill crest (or reverse slope) and is protected by infantry who have dismounted and lie on the ground around it.

were assigned to the infantry and tank regiments which were to effect the break-through. Other groups were formed for counterbattery fire. In addition, every divisional commander taking part in the main attack had an artillery reserve of his own, which was disposed where counterattacks by enemy tanks were most likely.

While in the period when the enemy's fire system was being ascertained, main reliance was placed on the vigorous action of small bodies of infantry and tanks, but when it came to the actual break-through, artillery became the chief factor. The weight of artillery fire made it possible to smash the adversary's defense lines with the least loss of lives and the least expenditure of time.

## CLOSE AND CONTINUED SUPPORT

After the first line of defense was breached, half of all the battalion, regimental and antitank guns were rushed forward to the line reached by the tanks and infantry. The other half, together with the 120mm mortars, supported the infantry with fire from position.

The guards mortars, which had taken part in the artillery preparation, were then assigned to the divisions operating in the line of the main drive. When the next defense line was seized, all the artillery was

rushed forward, and part of it placed on the flanks.

It should be remembered that the artillery had to force a river, mostly without regular ferrying matériel. Accordingly, even when the battalion guns were being transferred across the river, half of them at first remained in their former positions and maintained fire from there.

When breaking through a rear defense line, it would be futile to hope that all of the enemy's artillery can be silenced. This would require too much time and means. The important thing is to neutralize those batteries which the attacking forces are most likely to encounter when penetrating into the enemy's positions. The commander, therefore, must dispose his artillery accordingly.

In the case in point, the enemy's guns maintained heavy fire at the tanks and infantry, which had broken into his positions, but it was unable to prevent the widening of the breach. A Soviet regiment of destroyer guns moved forward to the edge of a wood and opened direct fire at the enemy's batteries. Subsequently, it moved forward close on the heels of the tanks and continued to take part in the advance. In particular, it facilitated the seizure of a large inhabited point.





Sovfoto

This new 45mm M-42 antitank gun is a longer version of older M-32 and M-37 with very powerful propellant charge. As a battalion weapon for direct infantry-cavalry support this gun replaced the 57mm M-41, which was too heavy to manhandle. The higher velocity of the new 45 makes it as effective as the 57, while it is light enough to manhandle. Such mobility is effective in a break-through.

## CONCLUSION

What, then, are the main conditions for the successful and swift break-through of enemy rear lines? (1) *The first essential is timely (beginning at the distant approaches) reconnaissance to ascertain the nature and peculiarities of the enemy's defenses.* (2) It is of the highest importance to maintain vigorous action by both ground and air forces to prevent the enemy strengthening his rear defenses. (3) No less important is massed artillery fire at the moment of the break-through. (4) Lastly, the artillery must be decentralized in proper time to enable it to accompany the attacking forces on wheels.

The break-through can be consolidated effectively only if the artillery does not lag behind the infantry. Much depends on the initiative of the artillery officers. A mortar regiment commanded by Major Kuznetsov ran out of motor fuel. To await until supplies arrived would entail a loss of valuable time. Kuznetsov swiftly switched his regiment from mechanical to horse draught. Then, when fuel came up, the lorries caught up with the mortars and again took them in tow.

As in all operations, the chief factor of success in breaking through rear defense lines is the time element. To prevent a rear (or intermediate) line from being turned into a main defense line, the attacking forces must be supplied properly with transport, fuel and ammunition, so that during the action itself not a minute is wasted.

# Correcting Artillery Fire from Tank\*

*by Senior Lieutenant G. Sidorov*

A SOVIET heavy gun battery was ordered to cover the advance of a mobile detachment consisting of motorized infantry, cavalry, and tanks. The enemy's main forces lay on the farther slope of the hill, only the crest of which could be seen from the Soviet position. Consequently, it was not possible to correct the fire in the usual way from an ordinary observation post, as the enemy's forces beyond the crest were invisible, so it was decided that the observation post in this battle be arranged in one of the tanks.

The commander of the tank detachment placed a tank and its crew at the disposal of the gun battery. Before going into action, the battery commander acquainted himself with the tanks optical sights and learned to use them while on the move. He then made another careful map of the terrain. Fire would have to be corrected by wireless, so he arranged a meeting between the artillery wireless operator and the tank's operator. They carefully checked their sets and came to an agreement concerning wave lengths and call signals.

Before the battle began the gun battery took up its

firing position, and the commander climbed into the tank and drove forward along with the advancing troops.

When the tanks reached the crest of the hill, the Germans opened heavy artillery fire. The whole battlefield was open to view as if it were in the palm of one's hand. A hostile millimeter battery was firing, so upon orders of the battery commander the tank commander stationed his machine at a spot suitable for observation. From there coördinates were taken of the German battery and the artillerymen were ordered to open fire. The battery wireless operator had no difficulty in understanding the command, and the guns opened fire instantaneously. Shells struck to one side of their target, so the gun crew was ordered to make a .75 turn, and this time shells hit their mark. The battery fired 36 rounds in quick succession. Nine enemy guns were destroyed, and the remainder ceased fire. Soviet infantry then dashed forward, and within a few minutes captured the enemy's positions.

In this battle, it was possible to maneuver the artillery fire far more quickly and effectively than when fire is corrected in the usual way from a stationary observation post.

\*By cable to THE CAVALRY JOURNAL from War Department U.S.S.R., Moscow.



# Tank Assault in Swampy Terrain\*

*by Major P. Slesarev, Red Army*

Soviet forces ordered to defend lines in the vicinity of an inhabited point found that the most advantageous area for tank maneuvers lay to the northwest, near a height. Because of swamplands discovered on both sides of the hill the main blow of the tank and infantry units was aimed straight at the height.

After three days of battle, the German lines were still not pierced. The Germans, expecting the frontal attack, had concentrated their main forces, including six "Ferdinands," in front of the hill and cut lanes on slopes toward the woods in order to facilitate their defensive operations. From the fire of the Ferdinands, it was clear that enemy resistance could not be broken by the frontal attacks.

Lt. Colonel Losik personally reconnoitered the German flank positions and discovered another passage through dried out swamps at the right of the village. The decision was made to launch the attack in this direction. After the minefields were rendered harmless, the tank regiment got underway at dawn on the fourth day of the battle. Then the tanks, accompanied by an infantry regiment, suddenly broke through the German lines, wiped out several companies of infantry and, after a rapid advance, approached the village from the northwest. Russian tankmen opened fire on the only road over which the enemy could retreat.

Realizing their perilous situation, the Germans hauled their reserves, consisting of seven Tiger tanks and an infantry battalion, into a counterattack. The Soviet tank crews destroyed two of the Tigers, and, by accurate fire, wiped out 150 Germans and forced the rest to flee for their lives. This bold move proved to be the turning point in the engagement. The enemy defense lines rapidly collapsed.

Under cover of night, the Germans fell back and moved across the bridge west of the village. Toward

morning, the withdrawal became a panic-stricken retreat, with many Germans trying to swim across the stream in their flight. In close pursuit, the Soviet tanks raised havoc among the demoralized enemy troops.

It is interesting to note that Lt. Colonel Losik did not lose a single tank throughout the battle—largely because the tanks delivered such a crushing blow where the enemy least expected it.

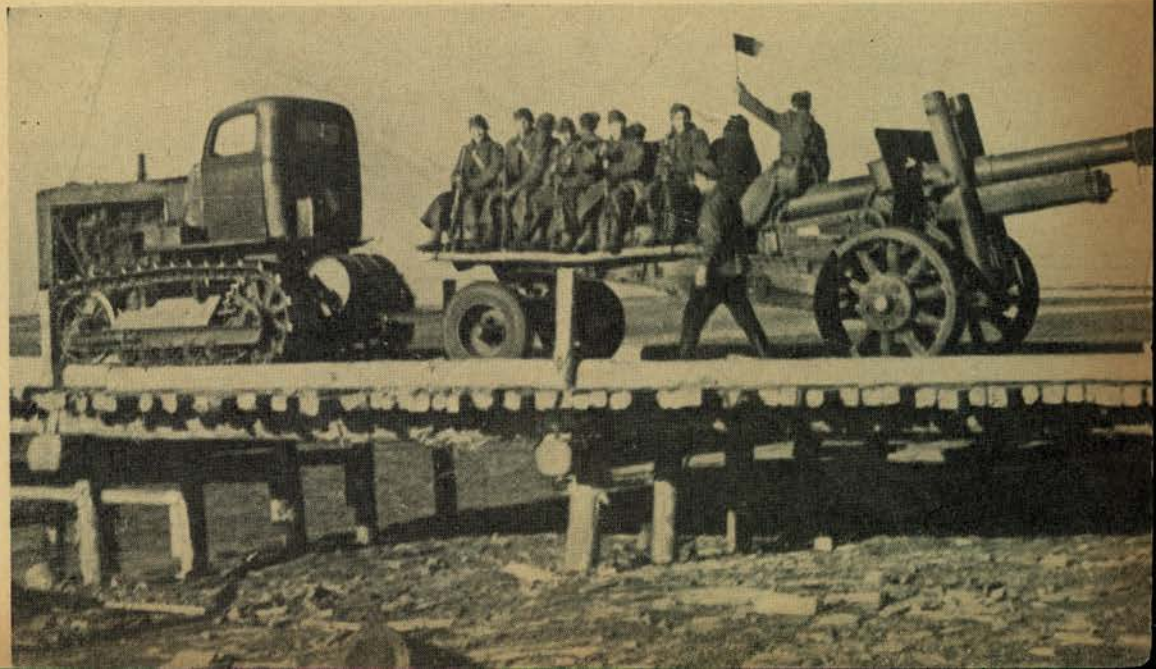
Another example of woods and swamps being utilized for a surprise tank offensive occurred when the Germans transformed the area around the village of Lyanpo into a formidable center of resistance. Situated beyond a wide swampy stream, the village could be entered only by a country road about one kilometer south, but the road was heavily guarded on both sides by concentrated artillery, trench mortars and tanks. Realizing that a tank charge on the road was bound to fall through, the Soviet commander ordered that the weakest link in the enemy defense be found.

A detachment of Soviet sappers began to build a bridge near the road to attract the attention of the Germans, while other sappers laid a log road across the peat bogs and stream east of the village. When this passage was ready, a group of Soviet tanks shammed an attack along the country road, while the main body of the tank columns moved across the swamp route.

Sighting the Soviet machines on the highway, the Germans brought their artillery from other sections and left their flanks unprotected. The Soviet command expected this move on the part of the enemy, so when the Soviet artillery engaged the German batteries in a dual, the Russian tank regiment crossed the stream and smashed through the enemy's flank and rear positions. Inside half an hour, the Germans were routed; and the Soviet tanks, pursuing remnants of enemy units, advanced more than twenty kilometers that day.

Russian trestle bridge, similar to one built for tanks in swampy terrain, is much used and preferred to ponton equipment because of the heavy weights carried. This gun is a heavy 152-mm M-39 gun-howitzer.

Sovfoto



\*By cable to The CAV-ALRY JOURNAL from War Department Press, U.S.S.R., Moscow.



# Interaction of Aircraft

ONE of the most complex aspects of the use of aircraft in battle is the organization of interaction with mobile groups of land forces. It is not surprising that commanders of all arms should sometimes criticize the operations of supporting aircraft on the grounds that they are "insufficiently clear." These same commanders have an incorrect attitude toward aviation and its potentialities. Their criticism springs from their own ideas and from failure to prepare thoroughly for coördinated action by all arms.

The organization of interaction is a complex business because, while the land forces are being sent into a break-through, the situation changes very rapidly, and extreme flexibility is needed in the leadership of air units. Tactics have to be arranged not in dispersal, but immediately over the field of battle.

## THE TEST

If at the first stage of an air attack the aircraft act as a whole mass against previously studied targets, then at the second stage—in support of the infantry and tanks in the depth of the defense ring—the necessity arises for artillery interaction on new targets which are obstructing a further advance. How quickly can these targets be destroyed? The value of the work of the air force depends on the answer.

At the second stage of an air attack the planes must appear over the field of battle at the call of the commanders of all arms or of the tank commanders, and also on the initiative of the commander of the air unit. In order that the call of the land forces' commander can be answered, a certain time is necessary both to prepare and to fly to the area of operations. It is inevitable that after the land forces' commander has put through his request he must wait for air support.

In the battles at Orel an air unit ensured the break-through of the "N" tank unit and its subsequent operations deep in the enemy defenses. The battles lasted a fortnight. In this operation the Stormoviks did their job well, and were highly praised by the commander of the land forces. An analysis of their operations shows that they understood how to organize interaction with the land forces. It is worth while describing in some detail how this was achieved.

## COMBINED EXERCISES BEFORE BATTLE

Long before the operations began, the tanks and Stormoviks carried out combined exercises. The commands of both units collaborated in studying problems of administration, identification and methods of summoning the planes to the required spot. Special attention was given to target-spotting. By means of radio, rocket and tracer, the tank crews signaled to the planes the objects hindering advance. The Stormoviks, on their part, undertook to lead the tanks to their targets.

*The joint work of "land" and "air" was firmly founded on radio communication between the staffs and between tanks and planes on the field of battle.* This contact, well established during the exercises, made it possible to guide the planes during flight—a fact which later proved of great, even decisive, importance.

A reliable system of tank recognition was evolved. At one time, recognition depended on the inscriptions and other markings on the body of the tank. During exercises it became quite clear that this method was inadequate. In battle, the markings become soiled, and the explosion of shells and dust often makes it impossible for pilots to see the marking at all from a height. For this reason reliance had to be placed mainly on radio and light signals.

At first the tank crews could not get used to the speed with which the planes operated. The peculiarities of the plane and the conditions under which the pilots worked had to be made clear to them. Some tank commanders at first had a tendency to call up the Stormoviks themselves—a proceeding which would inevitably have disorganized matters. It was arranged that all calls should go only through the command point. After this, the Stormoviks struck where they were most needed.

## INTER-COMMUNICATION

Before the battle, an air operational group was attached to the tank unit. Its special function was to see that both arms worked together without a hitch. It was headed by an experienced commander, Colonel Semyonov. He had at his disposal an operational worker, an assistant to the chief of communications, and a highly experienced radio operator. This composition proved entirely satisfactory.

The commander of the tank unit and his chief of staff set aside two radio stations for the use of the air representative. One of these stations connected the operational group with the air staff headquarters, which was a long distance away. It was also used for calling up the Stormoviks and fighters.

Through the other radio station, contact was maintained with the planes. Through it the pilots were given their bearings and cross-bearings as well as full information on the air situation around the targets. Air representatives were constantly present at the command point of the tank unit and at observation posts.

## TASKS OF THE STORMOVIKS

In the first phase of the battle, the enemy's first line of defense in the direction of the main blow was subjected to attack by the whole mass of planes. When the tanks had entered the breach, the Stormoviks switched over to ensuring their work.

The planes were called to the battlefield for pre-



# and Tanks

by Colonel M. Kotelnikov, Red Army

liminary softening of centers of resistance, and for extinguishing enemy firing points impeding the advance of the tanks.

Although the aerodromes were a considerable distance from the battlefield, the tankmen's requests were quickly met. Two or three groups of Stormoviks were always held ready for flight. It was impossible to rebase the Stormoviks nearer the front line, as there were no suitable landing fields in the battle area.

The effectiveness of the organization was amply proved in battle. On many occasions, planes had to be redirected while in the air. Often after the pilots were given a task and sent off in flight, the situation would change. If the tanks reached the target ahead of the Stormoviks, the planes had at once to be redirected and given a new task. This happened dozens of times, and in every case the redirection was successful. Not a single bomb or shell from the Stormoviks fell among the Soviet forces.

## COORDINATION

At one stage, a great tank battle developed. The maximum number of planes had to be sent to the area. After the targets had been softened from the air, the Soviet tanks inflicted great losses on the enemy and occupied a heavily fortified resistance point, which the Germans had intended to hold. On nearly every occasion the actions of the air units produced a change in the situation, and at certain critical moments the Stormoviks opened a road for the tanks and led them to the attack. The scrupulous training in target indication gave excellent returns. As soon as the Stormoviks appeared over the battlefield, they were given signals from the

ground by rockets, and by shots fired at the target from several directions by the tanks. This helped the pilots to find their targets quickly. The radio, as always, was an indispensable means of communication. Commands were given by radio not only from the observation post, but also by tank commanders actually on the battlefield.

Besides working directly on the battlefield, the Stormoviks hurled forestalling blows at the enemy reserves. For this purpose a constant reconnaissance was maintained in the interests of the tank unit. The Stormoviks were in a better position than the army and front intelligence to examine the enemy rear for the tanks in the direction of the drive.

On one occasion an enemy group of 100 machines was discovered pulling itself together. The Stormoviks struck from the air, and the tank commander strengthened his "fist" in good time. The enemy was unable to regain the initiative.

On another occasion, Stormoviks on reconnaissance noticed German troops withdrawing. The tank commander lost no time in making use of the favorable situation. He increased his pressure and prevented the Germans from consolidating on the next line of defense.

Throughout the operations, the flying personnel listened constantly to the voice of "the ground," and carried out its command to the letter.

Certainly, it would have been ideal to have had interaction in conditions of uninterrupted air attack on ground targets. But for this, a huge number of planes would have been needed, and even then it would not always have been worth while. The experience of the latest battles shows that even comparatively small forces can get results when they are used with skill.

Soviet attack planes are shown here annihilating a German tank column. Note smoke from tanks given direct hits.

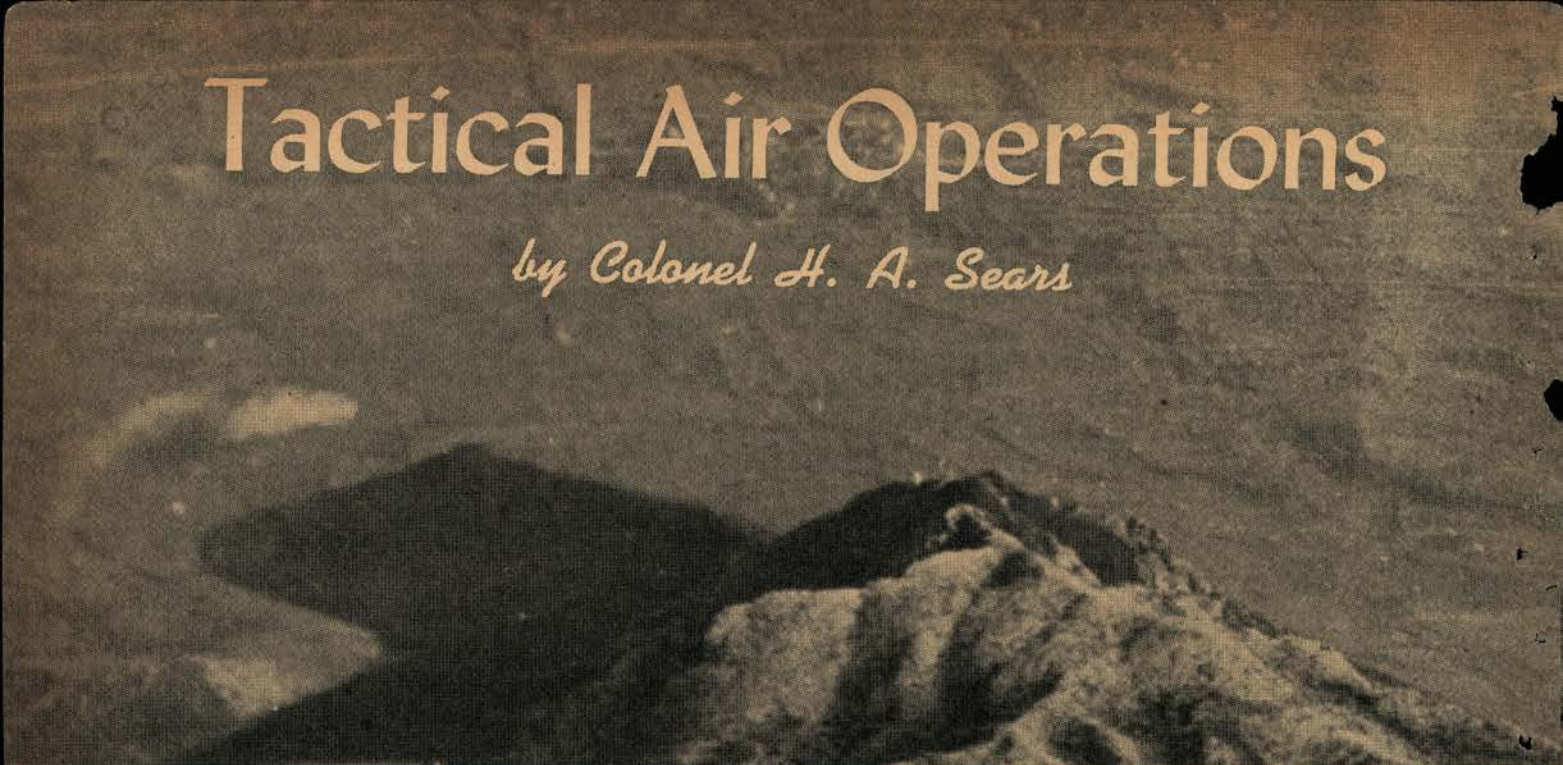
*Sovfoto*





# Tactical Air Operations

*by Colonel H. A. Sears*



AIR POWER has added a third dimension to the classic pattern of warfare as it has previously been known for centuries. Man's mastery of the air has added, therefore, also a third medium in which soldiers operate. Just as there are armored units on land, and battleships on the sea, so now there are fortresses in the air. And as with all other means operated on the two media of land and water, so these aerial ships in their medium have different characteristics and hence different capabilities and varying abilities.

The Navy has its giant battleships, smaller cruisers, more lightly gunned destroyers, and its lesser auxiliaries, so also does the Army Air Forces have its bombers, fighter-bombers, fighters and other lesser planes. Just as the various types of naval craft differ in appearance and employment, so also do the planes of the air force differ in silhouette and suitability of mission.

## ORGANIZATION OF ARMY AIR FORCE

As a result of the many types of planes that have been developed, it has become necessary for the Air Force to organize along functional lines; consequently, theater air forces are now divided into strategic and tactical air forces.

Let us look momentarily at the difference between these two air forces, both of which may be found operating in any theater of the war.

The strategic air force is specifically organized, equipped and trained to operate against vital targets beyond the ground combat zone. It is characterized by relatively fixed bases, limited mobility, and the ability to carry heavy loads of destructive agents for great distances.

The tactical air force is specifically organized, equipped and trained for joint operations with ground and/or naval forces, against the enemy armed forces within or moving into a ground combat zone. It is

characterized by mobility, a high degree of ground control of aircraft, and the ability to coordinate its operations closely with those of ground and/or naval forces. It is further characterized by capabilities for air defense and the responsibility for such defense, in the battle area.

## THE TACTICAL AIR FORCE

Tactical air operations may be defined broadly as the employment of air power in the surface battle. These operations are divided into three phases which may occur consecutively or concurrently. In order of normal priority, they are:

Phase I—Destruction of the enemy air force in the air and on the ground, in order to gain and maintain air superiority.

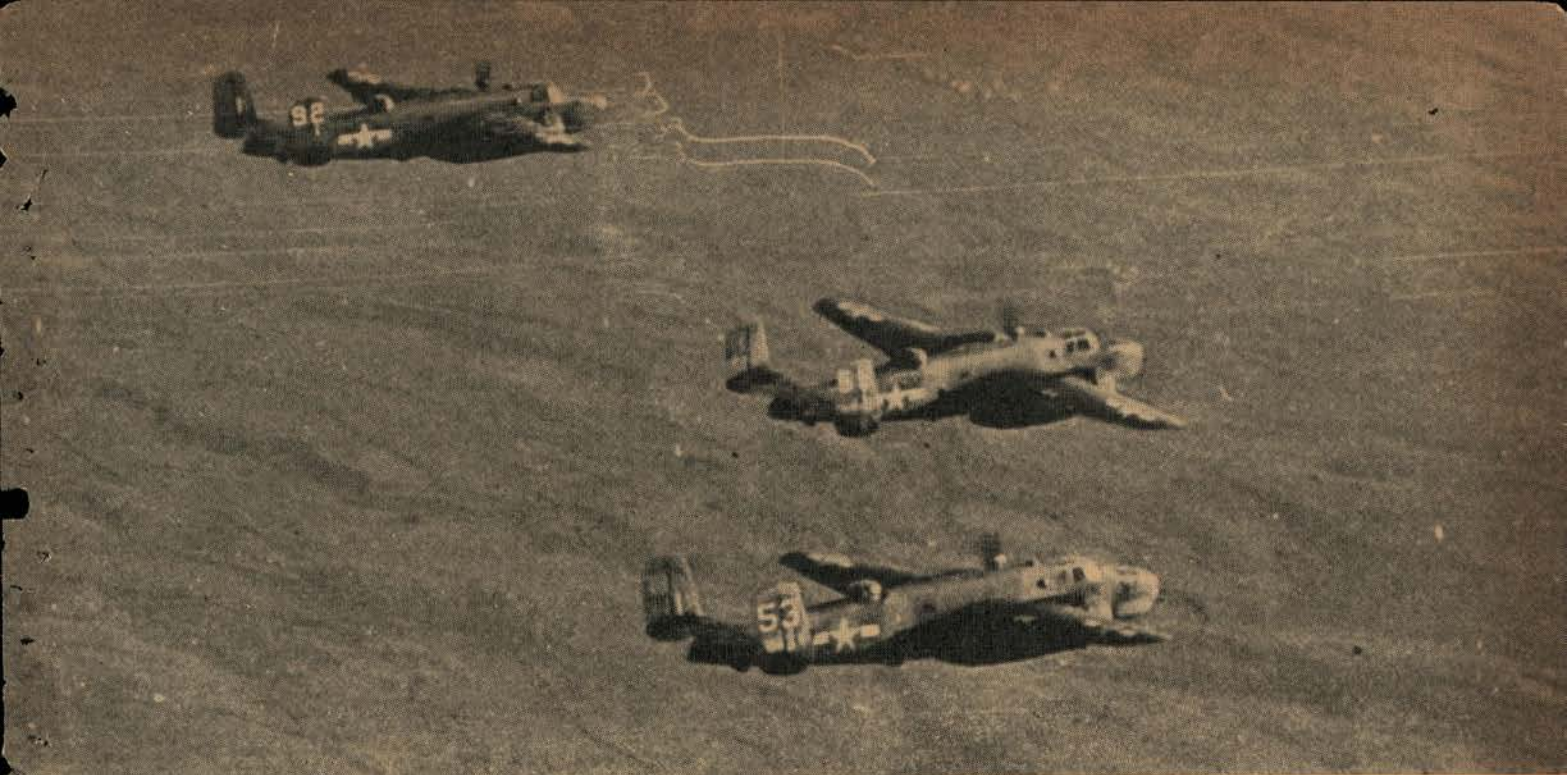
Phase II—Operations against enemy rear area objectives, including the disruption of communication lines, and the destruction of reserves and supplies, in order to isolate the battlefield.

Phase III—Attack on and destruction of enemy ground forces and other objectives, the destruction of which will immediately affect the progress of battle, in order to accomplish as a part of the air-ground team, the destruction of the enemy armed forces.

Originally, tactical aviation was confined within the narrow bounds of what was called "air support." Now the converse is true and *air support* is regarded only as one phase of tactical aviation. Tactical aviation, therefore, has been given a new and broader meaning. It can be described as that form of military aviation which is designed to win the battle of the air, prevent the movement of the enemy troops and supplies, and participate with the surface forces on the battlefield.

During the air support era, much ado about command was often heard. Many ground commanders to whom air support units were attached, assigned mis-





Official Photo U. S. Air Forces

**B-25 medium bombers fly in formation over mountainous country on way to bomb enemy gun positions near Cassino. Tactical Air operations in southern Italy entailed use of practically every type combat aircraft.**

sions and attempted to control air operations to the detriment of both. This question has been definitely settled—"The command of air and ground forces in a theater of operations will be vested in the superior commander charged with the actual conduct of operations in the theater, who will exercise command of air forces *through* the air force commander, and of the ground forces *through* the ground force commander."

Too many of us have been brought up to believe that all that we have to do to receive air support is to whistle for it and let the old biblical quotation govern—"Ask and ye shall receive." Such is not the case—"Them days is gone forever."

A tactical air force is usually built around a tactical air division. The former is a tactical, non-administrative unit, its headquarters being co-equal to that of a group of armies. The latter, the tactical air division, is both a tactical and administrative unit, divided into a forward and rear echelon with duties comparable to those of larger ground units. The flying units of these

tactical air divisions are composed of fighter aviation, tactical bombardment aviation, and photo reconnaissance aviation. In addition to normal service units, there are found control, communications and aircraft warning units, photo tech squadrons, antiaircraft artillery, light and heavy wire construction units, and radio intelligence units.

#### MISSION AND OPERATIONS OF TACTICAL AVIATION

The *Mission* of the tactical air force is to defeat or destroy by air action enemy air, land, and naval power within or moving into a theater of operations. This mission is carried out in three consecutive or concurrent phases, based on priorities:

I. Counter air force operations for the purpose of achieving air superiority.

II. Attack on the enemy rear area objectives for the purpose of isolating the battlefield.

III. Participation in joint air-ground operations to destroy the enemy military forces on the battlefield.

Official Photo U. S. Air Forces

A photographic reconnaissance pilot made this picture of a trainload of German tanks east of the town of Macerata, Italy, near the Adriatic coast. The tanks are Mark III's mounted with assault guns and were being hauled to reinforce the units facing the Eighth Army. The later bombing of these tanks assisted directly in isolating the battle area. A main target in Italy was the enemy-held transport system, vital for supplies.





Although the ground force's requests fall in priority III, this should not cause the ground elements to be downhearted, for the accomplishment of the first two objectives are bound to contribute materially to the success of the entire effort, as well as to that of the specific ground effort; whereas the successful accomplishment of a priority III mission alone would lead only to local success.

That does not mean that the ground force will never get air support. It does mean that *except when the honoring of the ground commander's air request will contribute to the success of the entire battle as differentiated from a local success, planes will not be diverted for it UNLESS:*

(a) Air superiority has been achieved and can continue to be maintained by our own air forces and that

(b) The battlefield has been isolated from re-supply and the introduction of reinforcements by the enemy.

If the ground commander's air request is honored, he should get ready to "saddle up old paint" and get going. He has made the first team, and when the smoke of battle clears, he will be news at home—"home town boy makes good."

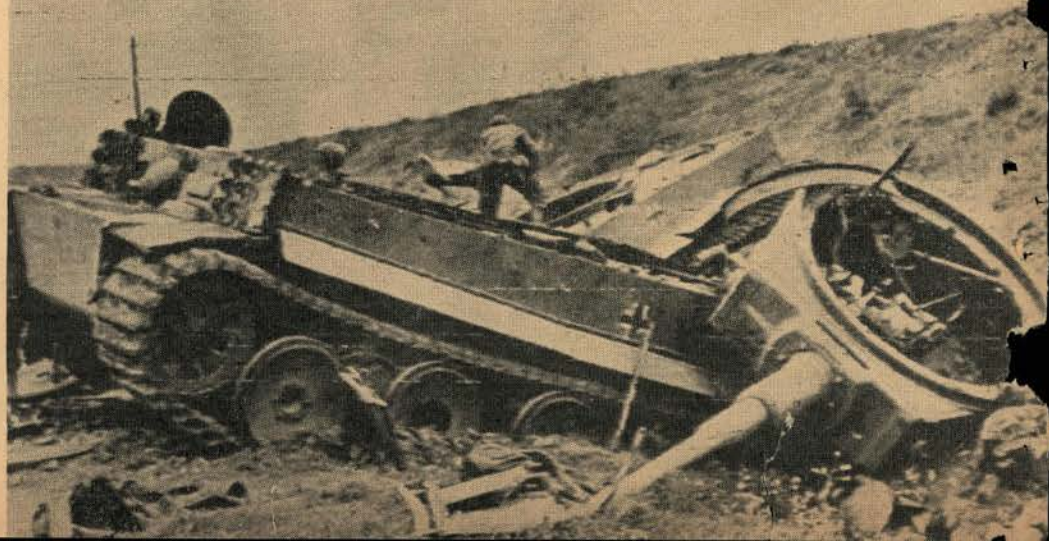
#### THE PHASE III MISSION

If the above two conditions exist, then due consideration can be given to the Phase III Mission, which is designed literally to drop bombs right in front of the ground troops, in accordance with previously laid plans, and on the request of the ground commander.



Above photo, taken by Colonel Peter C. Haines May 10, 1943, shows German planes destroyed on ground at Tunis by Tactical Air Force during the phase of neutralizing enemy air power prior to final drive on Tunis.

This giant Nazi Mark VI tank, complete with 88mm gun, was knocked out on the road to Tunis by the Tactical Air Force. On one single day—May 6, 1944—of the 2,146 sorties made, the great majority were bomber, fighter-bomber or strafing missions on a 6,000-yard front before the main effort of the ground forces.



It is a difficult phase to accomplish since: (1) targets are small, well dispersed and hard to locate; (2) bomb lines must be established to avoid bombing our own troops; and, (3) to be effective, *immediate* response must be given to the approved requests of ground commanders. Maximum effectiveness is generally achieved when not more than one hour elapses between the time a bombing mission is requested and the time that the planes arrive over the designated target.

This phase depends for success upon team work and cooperation, and no plan has yet been devised for its complete and satisfactory application. It is almost impossible to employ this phase in a fluid situation where bomb lines cannot be maintained. It is best employed on a stable front where pre-planned bombing attacks can soften up the enemy for a break-through by the ground forces.

To achieve the necessary teamwork and cooperation, air parties are sent down to corps and divisions, to keep ground commanders informed of the nature of the air effort, to exchange intelligence, to advise the ground commanders on the capabilities of aircraft, and to relay requests for bombing and reconnaissance missions. When it is desired to make a request for air support, communication with the air parties is obtained over normal command channels.

#### THE GROUND COMMANDER

If, as a unit commander, you make a request for an air mission, the first question that will be asked at your division headquarters will be "*If granted*, will this mission further the joint air-ground plan of the theater or task force commander?" (Hence you should ask that question of yourself prior to making the request.) If the answer to this question is, "yes," send in the request. If the answer is that it *might*, you should also send in the request. Bear in mind that you do not know at what priority point the I and II missions may be in the process of performance, or of successful comple-

Official Photo U. S. Air Forces



tion at that time. Neither will you know what the prognosis is for those I and II missions that may be on the books, and will have to continue, even though your mission is granted.

When your request reaches the superior headquarters, the question of "furthering the air-ground mission" will again be asked, and if the answer is again "yes," the air commander must approve the selection of target, while, at the same time, the ground force commander establishes the bomb line, and makes adequate arrangements to provide appropriate air headquarters with accurate information as to changes therein.

#### THE AIR COMMANDER

What sources of information are there that will assist the air commander in determining the adequacy of the target? There are five apparent at a glance:

1. Information from ground force reconnaissance agencies, transmitted through ground force channels.
2. Information from air parties stationed at ground force headquarters—(check and double check).
3. Photography and visual observation by reconnaissance aviation.
4. Information available from returning fighter and bombardment missions.
5. Maps, charts, and mosaics previously accomplished by reconnaissance aviation.

#### SUITABLE TARGETS

What specifically constitutes suitable targets? Suitable targets will vary in every case depending on terrain, enemy strength, lines of communication and other similar factors. One general rule holds: the more concentrated the target, the easier it is to attack effectively. The converse holds true also, for a concentrated target can be more easily defended by lesser anti-aircraft means (if available) than the same target, dispersed.

Targets that can be brought under effective artillery fire are not considered profitable targets for air attack. Since enemy dispersion will be greatest at the front, it follows that the majority of concentrated targets will be found in the rear of the enemy battle area. The following four types of hostile installations might then be taken as representative:

1. Concentrations of troops and vehicles, which can be surprised, and would have difficulty in dispersing.
2. Accurately located command posts and signal centers.
3. Gasoline, ammunition, and ration depots.
4. Exposed or vulnerable artillery positions.

In general, targets which can be damaged or destroyed by a near miss are desirable. It is interesting to note the proportion of near misses to the actual hits made in air demonstrations—and these without any counter measures of flak or fighters for the aircraft crews to contend with.

What factors now govern in selecting a target, if a multiplicity of requests for Phase III missions is re-



Official Photo U. S. Air Forces

Death comes tumbling from the clouds on German gunners struggling to prevent Allied troops from crossing the Volturno River in Italy. Bombs from a B-25 Mitchell of the Northwest African Air Force head for enemy gun positions. The winding Volturno River can be seen below.

ceived, and they all fulfil the conditions of suitability? These appear to be four.

1. Will the destruction or neutralization of the target selected further the accomplishment of the air-ground mission?
2. Can adequate ground fire be directed on the target to achieve destruction or neutralization?
3. Can the target be located *without search* by attacking aircraft combat crews?
4. Is the target vulnerable to the type of aircraft that can be made available on the mission?

Briefly is the target *findable, hitable, valuable* and *vulnerable*?

#### THE BOMB LINE

In the meantime, while the matter of suitability and the factors of selection are being weighed by the air commander, the ground commander is probably having his troubles selecting a bomb line. He must not only designate this line, but he must assume its maintenance and make adequate provision for its unmistakable identification.



For a successful understanding of the bomb line by both ground and air forces, identical gridded photographs would be the ideal and preferred means. These, however, will frequently not be available. It therefore becomes the duty of the ground commander who has designated the bomb line to provide accurate and timely information as to any changes made therein, and to transmit these changes through the available air party—always including such room to preserve his freedom of maneuver as he may desire ("Kentucky windage," probably, to the less trusting souls).

The obligations of the ground commander having been fulfilled in the matter, the tactical air commander then interprets the bomb line for his aircrews by describing it in terms of terrain features recognizable from the air. In doing this, however, he makes an allowance for a margin of error in the bombing (*true* Kentucky windage, no doubt).

Various aids for the identification of the bomb line may be employed such as:

1. Colored smoke.
2. Smoke barrage from mortars or artillery.
3. Panels.
4. Radio ground to air communication, where a skilled and experienced observer may "talk" the pilot or formation leader into the target.

While discussing the bomb line, an apt question naturally arises: "What does the reconnaissance out in front do?" And the answer is that forward reconnaissance *which groups itself* has been, and can expect to be bombed. The key to this situation lies in dispersion. It has already been stated that, in general, the more concentrated the target, the better type it is. If the air is told not to bomb three or less vehicles, and the forward reconnaissance elements keep the dispersion they have been taught, then there will be no unnecessary casualties as a result of either erroneous friendly bombings, or the erratic ministrations of an enemy.

### CALL MISSIONS

In any operation, circumstances may arise which provide little or no opportunity for pre-planning, and missions against unforeseen but suitable objectives may be assigned to bombardment units. Such targets must be attacked quickly, and their destruction, if achieved, must have an *immediate* affect upon the progress of the battle. These targets may be located:

1. As a result of air reconnaissance information secured through tactical air reconnaissance, or from the interviewing of returning combat aircraft crews.

2. By call from Ground Headquarters, when the necessity for the application of air power is immediate.

In order that such missions may be honored, some fighter-bombers or bombardment aircraft, with their crews briefed and bombs loaded, must be kept continuously on ground alert. The disadvantages of this type of operations are obvious:

1. Limited briefing and navigational planning on *specific* targets.
2. Continual *rotation* of combat crews on alert status.
3. Limited *suitability* of bomb loads for *all* types of targets.
4. Inability to effect reasonably large concentrations of aircraft, which necessitates *piece-meal* attacks instead of massed action.

These disadvantages do not preclude call missions against unforeseen objectives in special type operations, such as amphibious landings where call missions will facilitate dealing with unexpected enemy opposition during a critical period; or in a situation where the battle front has become so fluid that friendly and hostile forces are intermingled to such an extent that it is impossible to carry out tactical bombardment missions in the immediate area of the front; and when action beyond the battlefield will hinder or preclude the forward displacement of hostile artillery to assist the



At a South Pacific base behind the enemy lines, cringing Japs huddle in dugouts alongside dual-purpose 75mm anti-aircraft guns as a strafing North American B-25 flies a few feet overhead on a tactical mission.

Official Photo U. S. Air Forces



Civita Castellana R.R. B.  
28-1-44

Rail transportation, essential for moving troops and supplies, is the target of AAF B-26 Marauders as they harass enemy-held railroads in Italy. Picture is the bombing of a railroad bridge one mile north of Civita Castellana, over which Nazi forces defending Rome were moving matériel and men into the Rome area. Marauders, scoring direct hits on the bridge, created an additional bottleneck in the enemy supply lines—a part of "Operation Strangle."

enemy in bringing reserves into the immediate battle area.

#### CONCLUSION

An effort has been made here to give a brief picture of the air force of today, its two combat subdivisions—strategical and tactical—and the broad principles of operation of the tactical air force, with which ground forces will be most intimately concerned.

As to command, it must be remembered that it has always been considered a lifelong study to learn *how to command ground or ocean forces successfully on their two-dimensional media*. Why, therefore, should it not be conceded that on entering a three-dimensional zone of combat operations, command of forces operating in that third medium should be exercised by personnel schooled therein and familiar with the problems thereof?

As can be seen, the business of "air support" has branched out considerably from the ground commander's erstwhile concept, and there are very good reasons why the ground force, as a small group, cannot merely whistle and have the goods delivered C.O.D. It can be seen further that instead of being based on the rather infantile "gimme" principle, the honoring of air requests has been placed on the broader concept of mutual benefit, more aptly expressed in the coöperative proven principle of the Three Musketeers, "One for all, and all for one."

It must be remembered that "air support," as it was formerly known, is now non-existent in its previous form—where it was expected to achieve the miraculous by myriad, wasteful, piecemeal attacks. Instead, air support is today available, neatly packaged, under the registered trademark of "tactical aviation," ready to be

delivered f.o.b. to those points where it will do the most people the most good and contribute to the success of the entire battle rather than to a local success.

Experience has definitely and clearly established a close and permanent understanding between the soldier and the airman. The old distrust and indifference has disappeared, and in its place has come the closest possible integration of effort. No doubt, there is room for improvement in detail—there is bound to be—but broadly speaking, coöperation, both strategical and tactical, has been brought to near perfection. Soldiers and airmen work side by side laying their plans. In the field the commanders live together. Before battle, the soldier indicates the strong points that he expects to give him trouble, and the airman directs his squadrons against them.

If you are an infantryman, artilleryman, or a tanker, discuss with the airman his problems. If you are an airman, find out how little you actually know of ground problems. The doughboy and the airman, the artilleryman and the tanker, are all Americans, their uniforms differing only in the insignia that they wear.

## "Operation Strangle" in Italy

THE Tactical Air Force bore the brunt of the "Operation Strangle" in Italy designed to draw a noose around the Italian rail system. . . . Target of the operation was the entire enemy-held transport system through middle Italy—coastal shipping, rail and road.

By March 24 no through rail line led to Rome. The closest approach without transshipping was to within 125 miles of the city.

With the disruption of his rail lines, the enemy was forced to rely heavily upon transportation of men and supplies by motor vehicles and by vessel. Only a fraction of the tonnage needed to keep the German armies going—estimated at 3,000 tons daily—could be moved by water. Highway transportation thus became the enemy's mainstay. But night and day attacks on road traffic also bore fruit, with an average of about 40 enemy vehicles destroyed during each 24-hour period.

The increased dependence upon motor transport soon began to have the expected effect on Germany's fuel supplies, never too abundant. Most trucks in use were of Italian origin, and spare parts were hard to get because the factories at Turin and Milan had been destroyed by aerial attacks of the Strategic Air Force.

"Operation Strangle" picks its targets at points that place two extra burdens on the German—the breaks are made as far as possible from large cities at which he has repair depots, and are made at points that stretch his trucks to the utmost in transshipping.

On May 1 the German could still get through more than his daily needs of supplies on the Cassino and Anzio fronts. But his requirements were geared down for the lull in battle. As the time grew nearer for the battle that would burn up his reserves, air operation was intensified to keep those reserves from building up.



# British Aid On Three



A mountain battery of Indian troops march through the Shan hills of Burma.

British Official Photo

**I**N the wooded heights on the Allied side of Cassino mule transport has been found necessary in this mechanized war. From a distribution point christened Clapham Junction, Italy, a train of pack mules and jeeps with trailers departs every night for forward areas. The perilous route passes through "Inferno Valley" and "Mad Mile," and ends at "The Bowl," from which supplies are carried to their final destination on human backs. The Mad Mile is under unceasing enemy observation and constant shelling. Considering the risks, losses among mules have been surprisingly slight.

The present plan of operation enables all Cassino troops to receive daily rations, ammunition, mail, newspapers and comforts. The nightly group of officers accompanying the transport train may include the director of medical supplies, the Provost Marshal, whose police guide traffic, the director of transport from the Royal Army Service Corps, which unravels traffic blocks, or a chaplain thumbing a lift to be with his men.

Likewise through the jungles and mountains of Burma, the indefatigable army mule packs machine guns, radio units and supplies to British troops.



Pack mules played a big part in the Canadian advance through Sicily, particularly in some of the mountain regions which defied even the best motorized equipment. Here, a mule pack convoy of the Royal 22d Regiment is shown passing through Leonforte high up in the mountains, August, 1943.

Canadian Official Photo



# Pack Mules Army Fronts



Troops of the famed Burma Rifles, operating among the rugged mountains of the Shan Country of Burma, use mules to carry their machine guns, radio units, other equipment.

British Official Photos



A mule pack train, one of many which were used for transporting supplies in mountainous country of Sicily, is seen threading its way through the bomb-damaged streets of Adrano.

An Indian mule team is shown nearing the River Trigno in Italy, where extensive use was made of available mules for pack transport.





# Mechanized Cavalry On Reconnaissance

RECONNAISSANCE is the process of gathering information of the enemy and the terrain.

The movements of cavalry on reconnaissance will be directed toward obtaining the required information and will not be regulated by the movements of the force from which it is sent out. On protective duties the reverse is the case. Hence, the two duties of special reconnaissance and of protection should never be allotted to the same cavalry unit.

## REPORT IN TIME

A force is sent on reconnaissance because the commander requires information and he requires it as quickly as he can get it; it cannot come too fast. However good the plans and their execution for getting the information may be, *unless it is sent back in time it is worthless.*

It takes time to collect information because it is obtained by small patrols, each contributing its little quota to the whole picture. This information has to be sent back through the various echelons, and if there is delay in transmission, or no transmission, there is a consequent blank space in this picture. Hence, it is the duty of cavalry personnel of *all grades*, from the lowest to the highest, *to send back at once information obtained.* Too much time cannot be spent in hammering this fundamental principle home. Every cavalry exercise must be made the occasion for practice by all ranks in this matter.

It would, of course, be wrong for the commander of, say, a cavalry motor squadron to withhold information from his brigade commander until he had fully completed the information picture he was sent out to acquire. He must act to the brigade commander in this respect as he expects his troop commanders to act to him. The small scrap of information obtained by the scout of a patrol may prove to be the most important item that the brigade commander has been seeking. It must be remembered, too, that the value of information diminishes with its age.

## DISPERSION A NECESSARY EVIL

Reconnaissance by its very nature requires dispersion in the force making it. It is a necessary evil and should be reduced to the absolute necessary minimum required. Dispersion causes loss of control or at best makes control difficult. Loss or reduction of control reduces maneuverability and adds to the time required to get information back and orders forward. Consequently, in planning his reconnaissance, the squadron commander should first look at his task as a whole, then consider how he can break it up into phases. Each phase should gradually work and lead coherently and

logically to the final accomplishment of his mission. Having done so, he will break up the first phase into troop tasks, consisting of as many troops as he considers necessary.

## DIVISION OF TASK AMONG TROOPS

Where our cavalry commanders sometimes err is in giving too large tasks to the troop. This makes the troop commander's task very difficult and leads to a repetition of the error in the troop and a consequent increase of time required to complete the allotted task. In fixing the troop tasks, the squadron commander should ask himself:

(1) Is the terrain such that it can be searched very easily; e.g., can a good view be obtained from dominating features over open ground? If so, he can allot a larger area to a troop than he would give to another troop whose area lacked dominating features, was more populous and close.

(2) How many patrols will the troop commander have to use to search the area, and how long will it take to complete?

(3) Bearing in mind his mission and his knowledge of the situation as a whole, as disclosed to him by his brigade commander, how much time can he afford to spend on this phase? The length of time he will spend, will be that of the troop with the most difficult task.

(4) Is his knowledge of the situation such that he can with safety make only a cursory examination of the terrain in this phase and thus save time? This may happen in the very early stages of the reconnaissance when the commander *knows* that the enemy is yet at a distance but for his own security and satisfaction nevertheless decides to reconnoiter.

## SQUADRON ORDERS

He will then issue his orders giving any information of the enemy and his own forces that he has not already communicated to his troop commanders; give the squadron's task; fix the areas clearly to be reconnoitered by the troop or troops used; fix the successive bounds; determine the squadron rallying point on completion of the phase; describe by questions the tasks of each reconnoitering troop, the time he expects each troop to complete each bound, where casualties will be sent (wounded should be sent to V.A.D. posts in the locality), where reports will be sent and/or the squadron axis of signal communication, the time at which the present C.P. will close, and the next one open.

## TROOP ORDERS

The troop commander has to approach the execution of his task in much the same way as the squadron commander has done. He considers his mission, the terrain,



# Connaissance

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and the force at his disposal. His study of the terrain and road will show him how to divide up the task between the patrols that he has decided are required. He will issue his orders; give information of the enemy and his own troops; give the troop task; fix the successive troop bounds to the first squadron bound; and fix where the troop will rally; set the tasks for each patrol by means of clear questions to which they must supply clear answers; provide the patrols with any necessary D.R.'s; indicate how casualties will be treated; where reports will be sent; the location and movement of the squadron C.P. to provide against the troop commander becoming a casualty.

## THE JOB OF THE PATROL LEADER

The patrol leader will consider how he will tackle his task. He will, for example, have been asked by the troop commander to answer the questions: "Are there any enemy on Hill X?" "Is the road clear as far as 'Y'?" It will not do for him to rush his patrol at full speed towards those points, as so many of our cavalry units do. He will have to consider the terrain towards the first objective, use his map and, if lucky enough to be located at or near commanding ground that gives a view towards the objective, use his glasses to study the terrain.

The purpose of this study is to assist him to determine what terrain features he can use to assist his approach towards his objective. For example, he sees that about 800 yards along the road that he will travel, and just to the right of it, there is a hill from which he will probably be able to get a good view of the terrain towards Hill X. He decides that he will move his patrol to this feature first. He has another reason for going to this hill. Because it commands the road, it is possible that there may be some enemy on it who would be quite willing to lie doggo and let his patrol pass through in the hope of trapping bigger game; or, having let him through, prevent any of his D.R.'s or messengers from getting back with information. A further reason is that if he succeeds in getting to the hill he can use it to cover the next move of his patrol. Hence this study—to plan his moves or bounds toward Hill X. He should not fall into the all too common error of splitting up the patrol into a number of smaller ones. By doing so, he would lose control, put an unbearable strain on his means of communication, risk having each one snapped up by small enemy parties or having any one or more of them stopped by one or two men. Meanwhile, he would have robbed himself of the means of backing up any of them.

His next problem is the formation in which he will move his patrol. He must provide scouts in front, men to watch the terrain on each side of the road, and on his rear. He must decide, if he has L.A.'s or M.G.'s, where

he will place them in the formation, detail connecting files, decide who will go back with information if his force is ambushed and, finally, where he himself will travel.

Then and only then is he ready to issue his orders. He assembles his men, gives them all the information he has, tells them the patrol task and how it will be executed, lets them know where the troop commander can be found and the squadron C.P. and, if wounded, where to go for treatment, where he will be himself, and who will command the patrol if he becomes a casualty.

## FIRST CONTACT

Should the patrol encounter the enemy, the scouts will be backed up, supported by the fire of the L.A.'s and/or M.G.'s, and every effort will be directed to acquiring as much information of the enemy as possible. Should the enemy force be established as a small one and good meat for the patrol, it should promptly be attacked and dispatched or captured. Prisoners thus captured will frequently prove a most valuable source of information. Should the force prove too strong to be attacked successfully, the patrol leader should leave part of his patrol in position to observe the enemy, while with the remainder, he endeavors to get into positions from which as much information as possible can be obtained. In this he uses his L.A.'s and/or M.G.'s to cover the movements of his men.

As soon as contact is established with the enemy, the patrol leader should send back this information to his troop commander, and state precisely where contact is made and when, what is then known of the enemy, what the enemy is doing, and what action the patrol leader is taking.

## LOCATION OF COMMANDERS

It is obvious that cavalry commanders of all grades must keep well forward with their units. They are, first of all, leaders and not merely post offices. They must be forward to take the quick decisions which are an essential of cavalry tactics, to keep themselves posted on the situation and to save on communications.

This nevertheless presents a problem to the squadron and troop commanders. If the squadron commander sets up his C.P. well forward with one troop, it may be a poor location for serving another troop. How can he solve this problem? The ideal to aim at is to have it as far forward as possible and keep moving it to maintain this, while at the same time, he retains control over his squadron as a whole. He must be careful not to move voluntarily off the axis of signal communication given to him by his brigade commander without making sure *before* doing so that the latter is aware of this and the new axis. Should he be forced off it by enemy action, he must at once inform the brigade commander. The reason for this is obvious; if radio communication breaks down the brigade commander has no means of finding the squadron commander unless he is on a mutually known axis.



To go back to this squadron commander's problem: in most cases, it will be found that the solution lies in placing and moving the C.P. to keep as much control over the squadron as a whole and to keep in touch with the troops by personal visits to them. The squadron staff can be used to assist in this, but except in the most unusual circumstances, the squadron commander and his second in command should not be absent from the C.P. simultaneously. Long absences of the commander or staff officers are not to be encouraged. These principles apply to the troop commander also.

#### USE OF RESERVES AND ARMORED TROOPS

How is the squadron commander to use his reserve in reconnaissance if he has one? In the case of a motor squadron commander he should keep the armored troop in reserve. Whether or not he is also able to have a motor troop in reserve depends on his judgment of the situation. The armored troop is very vulnerable to mines and direct artillery fire, if it is not preceded by a motor troop. It should, therefore, be held in reserve to be used to back up and support by its fire the motor troop or troops requiring support. It should seldom be broken up into single car detachments. It should not engage in action as a number of static pill boxes. It has mobility, and it should use it. Its best mobility is on roads, and as much use as possible should be made of this. Frequently, it can get into practicable terrain off the road and where this is possible, use of cover and its mobility will increase its effect. One of the most common sights is to see the whole troop lined up and stopped behind the leading car on a road with only the first two able to take part in the action.

Sometimes the armored troop will have to act without motor troop cover, as when, for example, the motor troop in dismounted action, assisted by armored troops, has broken through the enemy, and the latter is rushed through to get in rear of the enemy. This should be a temporary phase; the motor troop or reserve troop should again be put in front as soon as possible. On other occasions there may be no alternative to using the armored troop alone as, for example, when all motor troops are otherwise employed and an enemy attack is developing on a flank, or when a suitable target for armored cars presents itself, such as troops on trucks. Then, by all means, use it, but let it be used vigorously and intelligently—making full use of its mobility and fire power.

There is no point in using armored cars statically in the open against artillery firing direct; the gun will always win in these circumstances. On the other hand, there are few roads in Ireland which have not a bend every two or three hundred yards and a fast moving car on such a road is not a sitting bird for artillery, nor is a car which moves up to a bend to engage its target and then quickly moves back around the bend. Artillery, firing indirect on to a road, has little chance of hitting a moving vehicle.

If the commander has a troop (cycle or motor) in reserve and has learned that the other troops are in contact with the enemy, he then must make a quick decision as to how he will employ it, if it is necessary to do so. It may be that he has to clear up the situation on one or other flank of the located enemy, and he should use the troop to do so. It may be that one troop has found a hole through the enemy screen. The troops in contact should be left in contact to observe and report on the enemy. The reserve should be pushed through the hole supported by the nearest troops in contact and, leap-frogging through that part of the troop which has succeeded in getting through, proceed to get the required information. Should only part of the reconnoitering troops be deployed in contact with the enemy, as much of the unengaged parts as possible should be ordered to follow through the gap and leave behind those deployed in contact with the enemy.

If the squadron commander knows that he will have to return through the gap, he will have to leave behind a sufficient force to hold it open for him. If at all possible, he should return by a different route after getting the information he needs. He may also need to hold the gap open in order to get his information back to the brigade commander. If so, he should arrange to have a relay to and from the troops at the gap so as to conserve his D.R.'s. Again it may be possible to get around a flank and behind the enemy's screen. The reserve is the force which can do this quickest.

#### CONCLUSION

It is well to remind oneself here of five things:

(1) The object of reconnaissance is to gain information and to convey that information to the proper quarter in time to be of value.

(2) The success of a reconnoitering force of whatever size depends principally on the leader and on the clarity of the orders he is given.

(3) When touch with the enemy is once gained, it should never be lost unless so ordered by higher authority.

(4) However accurate the information obtained by any unit may be, it will be of little value unless it arrives in time to be acted upon.

(5) It is a principle of cavalry leadership that the commander must not wait for chances to come to him. He must always be on the lookout to make them for himself.

The squadron or troop commander may feel overwhelmed by the amount of detail that he must know about reconnaissance and, in fact, about the other missions which he may be given. He will be overwhelmed if he does not make them second nature to him by constant practice. There is no teacher like experience. The more you know about the technique of your job, the more time you will be able to devote to thinking how to outwit the enemy.



# Reconnaissance Aids for Range Determination

by 1st Lieutenant Paul E. Koefod, Cavalry\*

MEN in the army know how difficult it is to estimate range by eye. Except at short distances, the method is uncertain. A soldier who can estimate range with reasonable accuracy is an exception. However, there is no need for total reliance upon the unaided eye. Each platoon has at least two instruments in common use which take the guesswork out of range determination.

The binocular is a highly useful but seldom fully exploited piece of reconnaissance equipment. Observers know many uses for it, but we of the new army too often seem prone to be satisfied merely to look through the instrument. As well as being an invaluable aid to the discovery of the enemy, the binocular is helpful in determining exactly how far the enemy is from an OP. The compass, also, has a variety of uses, although it is often considered as being no more than a direction finder. These instruments, used with the mil formula, singly or combined, enable the observer to locate distant points or objects quickly and accurately.

When using the binocular with the mil formula, the

length, width or height of familiar objects is the known factor. The angle, in mils, subtended by such known length, width or height is read in the binocular. With these two easily determined factors one can solve for range. If the compass is used, the known factor is a short base line arbitrarily established at the OP. The angle at the apex of the triangle, which is subtended by the short base, is easily computed by subtracting the sum of the base angles from 3,200 mils. The size of the angle subtended by the base line and the length of the base line being known, range can be determined readily.

Exact ranges along definite azimuths from established OP's to observed enemy concentrations or installations are invaluable to higher headquarters. Definite, accurate and quickly passed information eliminates guesswork and simplifies operations. The answer to "Where?" is vital.

Suppose that from an OP an enemy trooper is observed. With the binocular, both his head and feet can be seen. He is approximately two yards tall. His height subtends an angle of 2 mils, which angle is determined from the vertical mil scale in the lens of the binocular. Dividing his height by the number of mils, his height subtends (2 yd. ÷ 2 mils), the answer, 1, is secured. This figure reveals the enemy trooper to be 1,000 yards from the OP. (See Fig. 1.)

The mil formula is expressed thus:  $M R = 1,000 W$ . The angle in mils times the range in yards equals 1,000 times the width. Width is the length of the arc which subtends (is opposite to) the angle. W, length of the arc, is expressed in yards.

$M R = 1,000 W$ . By substituting, we have  $M = 2$ ,  $R = 1,000$ ,  $W = 2$ .

$$2 \times 1,000 = 1,000 \times 2.$$

2,000 = 2,000 Divide both sides of the equation by 2,000 and

$$1 = 1$$

When range is sought, the formula is expressed:

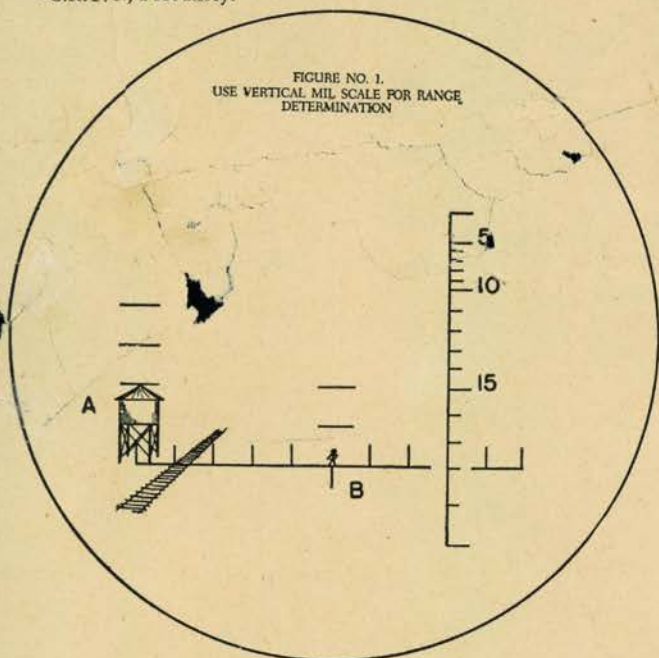
$$R = \frac{1,000 W}{M}$$

$$R = \frac{2,000}{2}$$

$$R = 1,000 \text{ (yards)}$$

Since the range is sought, and since the range is expressed in thousands of yards, work is simplified by cancelling thousands on both sides of the equation.

\*C.R.T.C., Fort Riley.

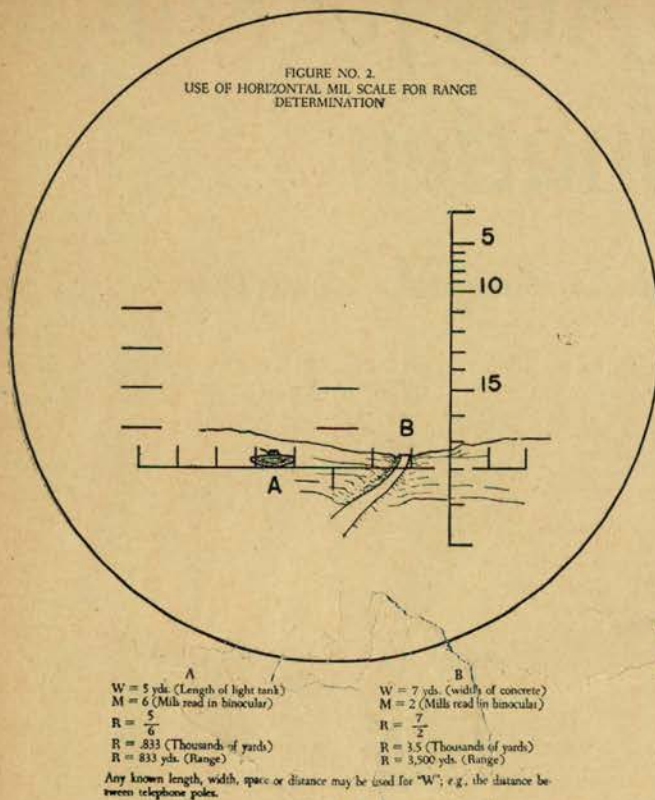


W = 15 yds. (Height of water tank)  
M = 10 (Mils read in binocular)  
R = 15  
R = 1.5 (Thousands of yards)  
R = 1,500 yds. (Range)

W = 2 yds. (Height of man)  
M = 2 (Mils read in binocular)  
R = 2  
R = 1 (Thousands of yards)  
R = 1,000 yds. (Range)

Any object the height of which is known may be used for "W"; e.g., the height of a telephone pole.





The result is:

$R = \frac{W}{M}$  (range expressed in the number of thousands of yards) equals W (width expressed in yards) divided by the number of mils that width subtends.

$$R = 2 \div 2$$

$R = 1$  The number of thousands of yards of range.

The formula,  $R = \frac{W}{M}$ , is similar to the original mil

formula in short form. Thousands have been removed from both sides of the equation to make arithmetic quicker and easier. Since units are now dealt with, the answer, R (range), will be expressed in units—the number of thousands of yards. To secure the range, multiply the number of thousands of yards (in the above case, 1) by 1,000. R in the above example equals  $1 \times 1,000$ : one thousand yards.

Take another problem. A railroad water tank is fifteen yards tall. Its height subtends an angle of ten mils as read in the vertical scale in the binocular. Range from the OP to the tank equals the height of the tank in yards divided by the number of mils that height subtends times 1,000.

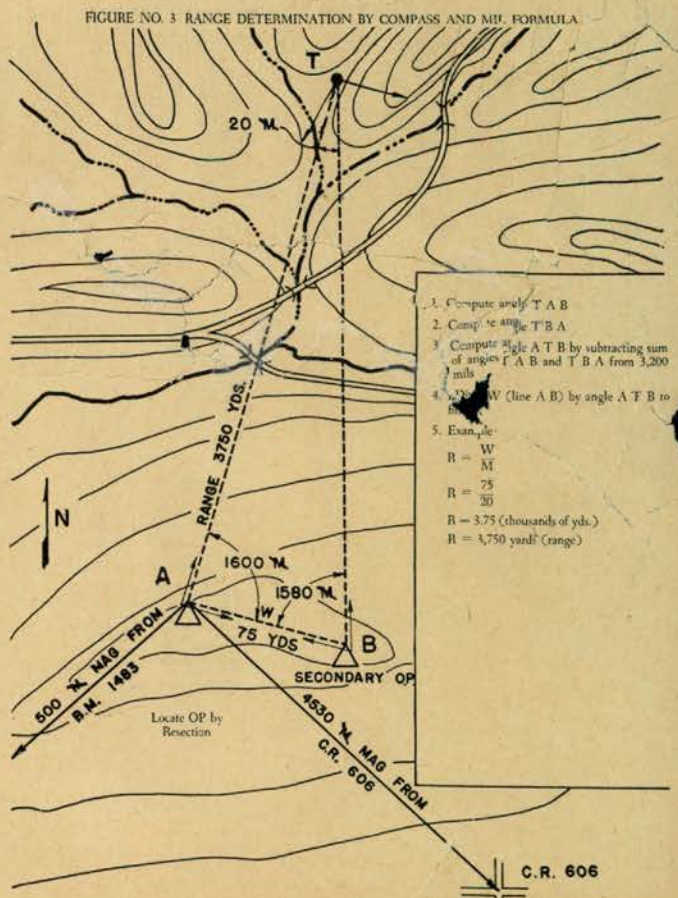
$$R = 15 \div 10 = 1.5 \times 1,000 = 1,500 \text{ yards.}$$

Range to points or objects can be as easily measured by using the horizontal mil scale in the binocular. Let us say a light tank is five yards long. Its length subtends a little more than five mils in the horizontal scale. By interpolating, the mils are determined to be six. Dividing 5 by 6, the figure .833 is obtained. Multiplied by 1,000 the figure .833 expresses a range of 833 yards. (See Fig. 2.)

A two-lane concrete highway is approximately seven yards wide. The range from an OP to the crest of a far hill can be determined by reading the angle in mils subtended by the width of the highway where it seems to disappear beyond the crest. Observing, the width of the highway is estimated to subtend 2 mils in the horizontal scale. Dividing 7 yards by 2, the range to the crest is determined to be 3.5 thousands of yards, or 3,500 yards. Range estimation by eye can be accomplished no more quickly. Neither is it so accurate. The mil scale and the mil formula take the guesswork out of range determination.

If one knows or can estimate the length, width or height of anything, his binoculars and the mil formula will give him a very close approximation of the range to that thing. A truck or tank or gun carriage is about two yards wide. What is the width of a column of infantry or horse in closed formation? The length of a light, medium and heavy machine gun? The length of a jeep, car and truck can be learned easily. A jeep is about three yards long. Dimensions of enemy vehicles are easy to obtain and to learn. Buildings of certain types vary little in height. Most box cars are twelve yards long and their height is easily determined. Memorization of a few easy widths, lengths and heights will provide the key to the range of almost any object or point.

The range to an object can be determined with the compass and mil formula, too. Instead of having the width at the target and the angle at the OP, the situ-





ation is reversed. An arbitrary width is established at the OP as the base of a triangle, and the angle at the target or objective (apex of the triangle) is determined. (See Fig. 3.)

Suppose one observes from an OP for higher headquarters. He first locates the OP by resection and sends the information of its location back so that headquarters knows exactly where the OP is. Observing with binoculars, an antitank gun is spotted. The azimuth to the gun is determined by compass. The azimuth to any suitable object to the right or left of and nearly at right angles to the line OP-AT gun is then read. The angle between the lines OP-gun and OP-object is computed by comparison of the two azimuths and written down. (To compute size of base angles, subtract smaller azimuth from larger azimuth. If their difference is greater than 3,200 mils, subtract that difference from 6,400 mils to determine the size of the angle.) A bayonet placed upright at the point where the compass was held for the first two readings will be an aiming point for the next reading. Any desired distance is paced off toward the object of which the azimuth was taken. At least 50 yards, but not more than 100 yards, are required. For easy arithmetic, the length of the base should be kept in even tens of yards. From the point arrived at, the observer determines the azimuth to the OP and the azimuth to the AT gun and, by comparing them, computes the size of the angle between the line of the base and the line of the gun. By adding the two angles and subtracting their sum from 3,200 mils, the observer arrives at the size of the angle at the gun. Since the distance paced off (in yards) subtends the angle at the gun, divide the distance in yards by the size of the angle in mils, and the number of thousands of yards from the OP to the gun is secured. A message can now be sent back to the effect that at a certain range on a designated azimuth from the OP an enemy antitank gun is located. (Location of an OP may be determined by compass and mil formula, using a single known point as a reference.)

If two compasses are available at the OP and if two observers are present, one observer can be sent with a compass to the secondary point. To determine the two base azimuths, each observer sights on the other's compass. While A sights to the gun, B sights to A's compass. When B sights to the gun, A sights to B's compass.

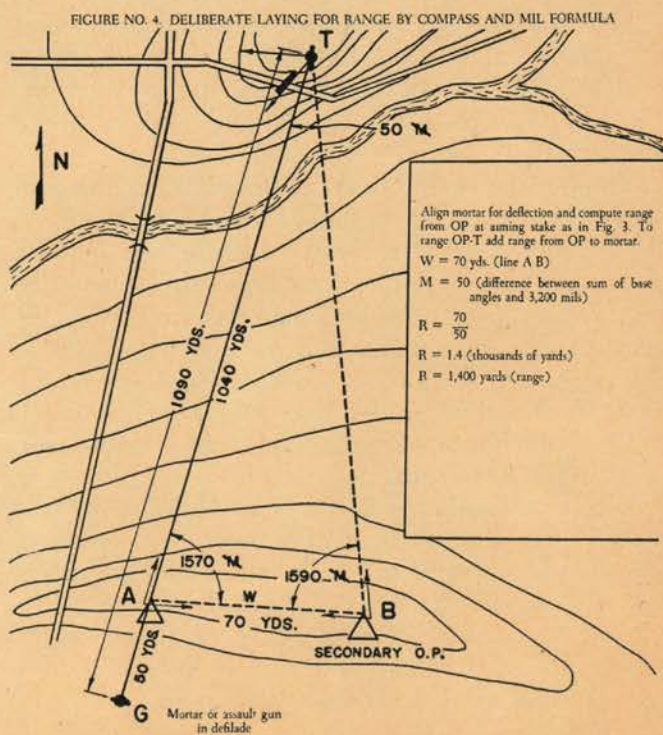
Range may be computed by compass and mil formula another way. Determine the azimuth of the OP to the observed object and establish a base at right angles to it. Pace or measure off any desired distance along the base line and establish a secondary OP. Determine the azimuth from the secondary OP to the observed object. The angle at the object can be computed by comparison of these two azimuths. This method is based upon the principle that, where parallel lines are bisected by a straight line, alternate interior angles are equal. The smaller azimuth differs from the larger azimuth by the

to the larger azimuth at either of the OP's. Smaller azimuth may be considered the bisector. Subtract the smaller azimuth from the larger azimuth. The difference (in mils) is the size of the angle subtended by the base line. If the difference between the azimuths is greater than 3,200 mils, subtract that difference from same number of mils that it differs from a line parallel 6,400 mils to determine the size of the angle. Solve for range by the mil formula by dividing the length of the base in yards by the size of the angle in mils.

Because of the need for interpolating between the 20 mil graduations on the compass, the range will not always be exact. However, the range so determined—if the observer is careful—is very much more nearly exact than if estimated. The author has determined range by compass and mil formula within four yards of the measured range. Inclusion of a sketch or description of the ground where the observed object is located will enable higher headquarters to plot the location of the piece within a few yards. Artillery fire could be laid on it with the first round or salvo. Friendly units could detour it or attack it successfully.

Range determination by the above means has further uses. A mortar or an assault gun can be laid for range by either of the above methods. With the range so determined, surprise fire can be laid on the target. Careful range computation will enable a crew to lay the first round within its effective bursting radius of the target and eliminates much sensing. If not in, the first round should be so close as to make but one adjustment necessary. (See Fig. 4.)

An enemy who realizes his position is being "sensed" by fire can pull out and escape that fire. Accurate sur-





prise fire gives him no such opportunity. Range determination by binocular and mil formula is a matter of seconds. Three minutes are sufficient to determine a range by compass and mil formula. A few additional minutes consumed in deliberate laying will save both time and ammunition wasted in sensing, and will speed destruction of the enemy.

Correct initial adjustment of fire must be stressed as

of greatest importance in a war of maneuver. Targets of opportunity not destroyed at once will vanish. Together with accuracy in the initial laying of weapons, range determination by these methods provides constant field checks which will increase proficiency in range estimation by eye. More than this, the methods suggested provide practical exercises which will increase proficiency in the use of the compass and binocular.

## Determining Initial Direction For Mortar Fire

*by 1st Lieutenant Paul E. Koefod, Cavalry\**

A MORTAR can be laid for initial direction quickly and accurately without the use of an alidade or similar device. Alignment by eye is a basic method of placing the aiming stake. This method relieves mortar crews of dependence upon gadgets which must be carried, and loss of which places them at a disadvantage. Precious time and ammunition are wasted by crews which cannot determine initial direction quickly and accurately without aids.

Knowledge of the employment of aids for determination of initial direction in unusual situations is important. Useful as they undoubtedly are, extra methods provided by aids are supplemental methods. Normally, the simplest method is the most efficient method. In keeping with simplicity, two basic methods are suggested. Neither requires aids for accurate placement of the aiming stake on the line, mortar-target. Both are easily taught, and both can be learned quickly by doing. The first method is called "foresighting" and the second is called "backsighting."

To place the aiming stakes by foresighting, the mortar corporal takes a position behind the mortar—on a slope, stump, truck, etc.—from which he can see both mortar and target. He directs laying of the tube on the line mortar-target, and sends a man forward to place the aiming stake. By sighting over the collimator sight to the target, the corporal can direct placement of the aiming stake exactly on the line sight-target. Foresighting is a simplification of the "sight case" method outlined in the mortar manual.

When the aiming stake is set by backsighting, the mortar corporal takes the aiming stake to a position in front of the mortar from which both mortar and target can be seen. He places himself as nearly as possible on the line mortar-target, aiming stake in hand. Facing the target, he squares himself with the line from himself to the target. The corporal may either stand or kneel.

After sighting the line from himself to the target carefully for a moment, he bends forward and closes his eyes. When in position to look back between his legs, he opens his eyes. The first object seen is on an extension of the line from the target to himself. He has, in effect, turned himself through an angle of 180°.

If inspection reveals the collimator sight to be one side or the other of the line backsighted, the corporal moves sideways in the direction the sight is from that line. Squaring himself with the line from his new position to the target, he sights that line and backsights again. If still not on the line sight-target, he moves sideways again and repeats the process of backsighting. With a few tries, and within a few seconds, the corporal can place the aiming stake between his knees or feet exactly on the line from the collimator sight to the target.

Careful, practical backsighting is as accurate as the alidade method. Second, the aiming stake can be placed accurately in less time by backsighting than it can by the alidade method. Third, backsighting requires no aids which, with other methods, must be carried. Backsighting can be done kneeling or standing, and a minimum of practice is required for proficiency. Backsighting provides a basic method adaptable to a wide variety of situations, and it eliminates dependence upon aids.

Backsighting has a further useful application. For range estimation over flat surfaces, such as fields or bodies of water, backsighting provides a truer, more realistic estimate of the range than can be gained by looking straight to the front. By looking back between the legs one gains perspective. Concentration on the range to the target is much simpler when the legs obscure all extraneous terrain from the picture. Much of the inaccuracy coupled with range estimation is due to lack of perspective. Backsighting provides a convenient—if somewhat grotesque—answer to the problem of perspective.

\*C.R.T.C., Ft. Riley, Kansas.



# Book Reviews

As a result of inquiries received in our Book Department, THE CAVALRY JOURNAL is starting a new service. Readers of the JOURNAL are invited to write to the Book Department and give subjects on which they would like lists of authoritative books. Lists containing recognized and new publications, with brief summaries of the text, will be sent at once. Lists of fiction will also be compiled. Books may be selected from these lists for immediate shipment, or at stated intervals.

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Books make ideal Christmas gifts. Orders placed through THE CAVALRY JOURNAL will be filled promptly and an appropriate Christmas card forwarded if desired. Orders for overseas shipment should be placed by September 15th if possible.

**HITLER'S GENERALS.** By W. E. Hart. Doubleday, Doran. \$2.75.

The present moment is most propitious for the publication of an outstanding book on Hitler's generals. It is most unfortunate that, in spite of Mr. Hart's obvious knowledge of Nazi politics, his book fails to present a complete and unprejudiced view of his subject. He tends to overemphasize the social distinctions between the "new" generals, and those of Junkers class. There is a too obvious effort to excuse the Junkers for defects common to both groups, while the wholesale condemnation of Rommel's ability appears at times to be unnecessarily biased.

Only four of the leaders discussed were still in key positions at the time the book appeared, and at least one of those has fallen from grace since the Allied landings in France.

**REVOLUTIONS IN RUSSIA.** By G. R. Treviranus. Harper & Brothers. \$3.00.

For many years books on Russia tended to fall largely into two classes—eulogies which overlook obvious faults in too great an enthusiasm for an ideal; and indictments which ignore the advances of the Soviet in abhorrence of a revolutionary idea. The last few years have brought more unbiased presentations than would have seemed possible 10 years ago. *Revolutions in Russia* is an outstanding example of an historical résumé and objective explanation of revolutionary politics and economics from the reforms of the 19th Century to 1917, the civil war, the NEP, the Five Year Plans, the purge and the prospects of the future.

The conclusions in the last few chapters will be questioned by many serious readers who will not agree that collectivized agriculture is "organized slavery." Opinions of this sort do not affect in any way the excellence of the main body of the book, which is undoubtedly an outstanding contribution to the literature about Russia.

**HE'S IN THE CAVALRY NOW.** By Brig. General Rufus S. Ramey. McBride. \$2.75.

General Ramey, formerly Commandant of The Cavalry School, Fort Riley, Kansas, has written a most informative, profusely illustrated, book describing the training of cavalry officers at Fort Riley, the various phases of warfare with which the cavalryman has to be familiar, and the use of cavalry units in the field.

The book closes with chapters on the use of a mechanized cavalry troop in Africa, a mechanized cavalry squadron in Tunisia, and a reconnaissance troop in Attu.

**AUSTRALIA AND THE PACIFIC.** By Members of the Australian Institute of International Affairs. Princeton University Press. \$2.50.

In his preface to this book, W. L. Holland, Research Secretary of the Institute of Pacific Relations, states, "Hitherto . . . there has been no up-to-date and representative Australian study published in North America to which serious readers could be referred for a picture of characteristic Australian points of view on the immense problems of wartime changes and postwar readjustments in the Pacific."

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**THE OFFICER'S GUIDE—1944 EDITION.** \$2.50.

**THE SOLDIER AND THE LAW.** By Lt. Col. John A. McComsey and Major Morris O. Edwards. \$2.00.

**ARMY FOOD AND MESSING—1944 EDITION.** \$2.50  
Military Service.

These three standard guides have been received in the new 1944 editions within the last month.

*The Officer's Guide* has had a complete overhauling. "Uniforms and Equipment" has been rewritten from stem to stern. "Pay and Allowances" has been reworked to advantage. "Personal Affairs of Officers" contains considerable new information; and another chapter, "Going Home," has been added.

*The Soldier and the Law* in its 1944 edition, with supplement on the outline of procedure for trials and court-martial and explanation of the articles of war, will be a welcome addition to the military library.

*Army Food and Messing* appears in its new fourth edition with valuable improvements in the text and many new photographs.



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By Lt. Col. Walter Sczudlo. Military Service. \$2.50.

The introduction states: "This book is a guide to performing military duties, to Army Regulations and similar directives, and a reference book for information on any administrative matter. It contains a selection of Army Regulations and other directives of a general administrative nature, grouped alphabetically by principal subjects, condensed, digested, and supported by detailed citations of source material."

No index or table of contents is included since the topics are arranged alphabetically and necessary cross-references supplied in the text.

Coördinating and clarifying a large quantity of information in an easily understood manner, this handbook will be invaluable, not only to officers, but to noncommissioned officers and men as well.

PACIFIC OCEAN HANDBOOK. By Eliot G. Mears.  
James Ladd Delkin, Pub. \$1.00, paper; \$2.00, cloth.

As a compact, well indexed, streamlined guide to the Pacific Ocean, this volume will be of considerable value. Its charts and maps are of an excellent caliber. The author seems to have amply fulfilled his aims to produce "an up-to-date Pacific almanac and geography for the navigator and traveller . . . and for our armed forces in this arena."

RUSSIA AND THE PEACE. By Sir Bernard Parés.  
Macmillan. \$2.50.

Familiarity with the Russian people and their habits of mind, bred of many years association with them, is a striking feature of this book. Sir Bernard Parés has endeavored to create in the reader an understanding of the inevitable influence that so powerful an ally must have on the peace. He has studied Russia since his first visit in 1898, watched it throw off Tsarism, and followed its advance under the present government. The book is a sincere effort to dissuade others from the "fear of the unknown" that may still exist toward the Soviet.

SIX WEEKS' WAR. MAY 10-JUNE 25, 1940. By Theodore Draper. The Viking Press. \$3.00.

Most of the books thus far written on the subject of the fall of France are the products of men endeavoring to explain the conditions incident to the tragedy—attempts either to justify or condemn.

Sgt. Draper, who for the past 10 years has been a newspaper writer on European affairs, has made a thorough investigation of his subject. As a result of this research he has produced a book which adds little new material to that already published, but coördinates the facts in a well rounded, analytical and comprehensive fashion, not found in previous volumes.

Ample notes, index and appendix put this book in the reference class, and it should retain its value for many years to come.



ARGENTINE DIARY. By Ray Josephs. Random House. \$2.75.

The New York Times Book Review Supplement says of *Argentine Diary*:

"This book gives a crystal-clear picture of the political situation that has developed in Buenos Aires. It will ring a sharp alarm in the minds of people who have thought that our Good-Neighbor policy had won South America to our way of thinking and that Franco had no influence beyond Gibraltar. Its lessons for the future are two: first, that the Fascist parade in South America marches 'to a tune played in Madrid, and the tune is called in Berlin'; second, that Nazism may not be expected to end with Germany's defeat, but can appear again and again in the plots of lesser imitators who will use its technique for their own ends."

REQUISITION IN FRANCE AND ITALY. By Maurice K. Wise. Columbia University Press. \$2.75.

An important corollary of the power of requisition by the state is the right of the individual to legal safeguards of his property and services. When the two essential parts of the institution of requisition threaten to become critically out of balance, the choice between requisition regulated along liberal lines, or vaster, less specialized powers, faces the nation.

Dr. Wise, in his history of requisition in France and Italy, shows the significance of the various phases through which requisition passed in these two countries prior to the present war. He points out the occasion for requisition, its objective and the exercise of its power. He has made a thorough research in order to show the laws enacted in an effort to substantiate the proper balance between the collective and private interests necessary if dictatorship is not to result from the use of requisitional powers.

The volume is well annotated and indexed. The information contained in it will undoubtedly be of interest and value to students of national economics and other groups dealing with requisition as a necessity of military government or as a result of other economic catastrophes.

MEET YOUR ALLIES IN WAR AND PEACE. Edited by Nicholas G. Balint. International University Press. Paper, \$1.00; Bound. \$1.50.

*Meet Your Allies* is an interesting collection of pictures and thumbnail sketches designed to give Americans a glimpse of their Allies in this war. It is a nicely presented little volume, but the information is almost too limited to be of value.

DICTIONARY OF SERVICE SLANG. By Park Kendall. M. S. Mills Co. \$1.00.

Listed in this little book are slang terms used by U. S. soldiers, sailors, Marines, Spars, WACs, Waves, Army and Navy Nurses; the Australians, New Zealanders; the Wrens and Waafs. While it might be considered amusing, this dictionary is not sufficiently complete to have any real value, and there are some really amusing books on the market that will last the reader a few hours longer.

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WEST POINT. By E. D. J. Waugh. Macmillan. \$2.50.

This story of the United States Military Academy begins with the history of the fortress in colonial days and follows through to the present training now given cadets. The book carries many interesting notes on the parts that West Point men have played in the U. S. Army during the nation's wars, and comments on the men now prominent in World War II.

It is most unfortunate that the general treatment of the book is too sentimental in nature to mark it as an outstanding history.

LONG-RANGE FLIGHT. By Colin Hugh McIntosh. McGraw-Hill. \$2.50.

The chief navigator of American Airlines has written a text for training pilots and navigators in the essential techniques of aircraft operations for long distance flight. He explains the principles of efficient engine operation, the use of airplane cruising charts, methods of cruising control, preflight planning, and controlled flight through use of the "howgozit" chart. Sample charts and graft are included.

THE REST OF YOUR LIFE. By Leo Cherne. Doubleday, Doran. \$2.75.

Mr. Cherne is a man of fact, and he deals with figures, not dreams. In this down-to-earth book on the postwar world he points out the difficulties to be faced, and reminds the reader that the quiescence of certain peacetime problems is merely temporary.

There is little mention of plastic kitchens and family gyroplanes. There are pages upon pages of intelligent discussion of economic and sociologic facts that will run our lives unless we learn to use them to steer the course of our own existence.

This book will not cure insomnia, but it does give ample warning that to substitute inertia for interest in national affairs is far more dangerous in peace than in war.

HOW JAPAN PLANS TO WIN. By Kinoaki Matsuo. Translated by Kilsoo K. Haan. Little, Brown & Co. \$2.50.

*The Three-Power Alliance and a United States-Japanese War* was first published in Tokyo in 1940—a kind of Japanese *Mein Kampf*. It was brought to this country by two Japanese army officers to be used for propaganda purposes amongst West Coast Japanese. Mr. Haan successfully secured an original copy from the officers without their knowledge, translated the text, and published it under the title *How Japan Plans To Win*.

Familiarity with this blueprint for Japanese victory is as essential to officers fighting Japan as is a knowledge of *Mein Kampf* to those in the European theater. The importance of both of these books has been sadly underestimated. Hitler made the statement that if plans were mad enough others would readily discount them as impractical, and they might be pursued to their completion without interference.

It is most unfortunate that this book, outlining so clearly the Japanese aims against the United States, should not have received more widespread publicity.



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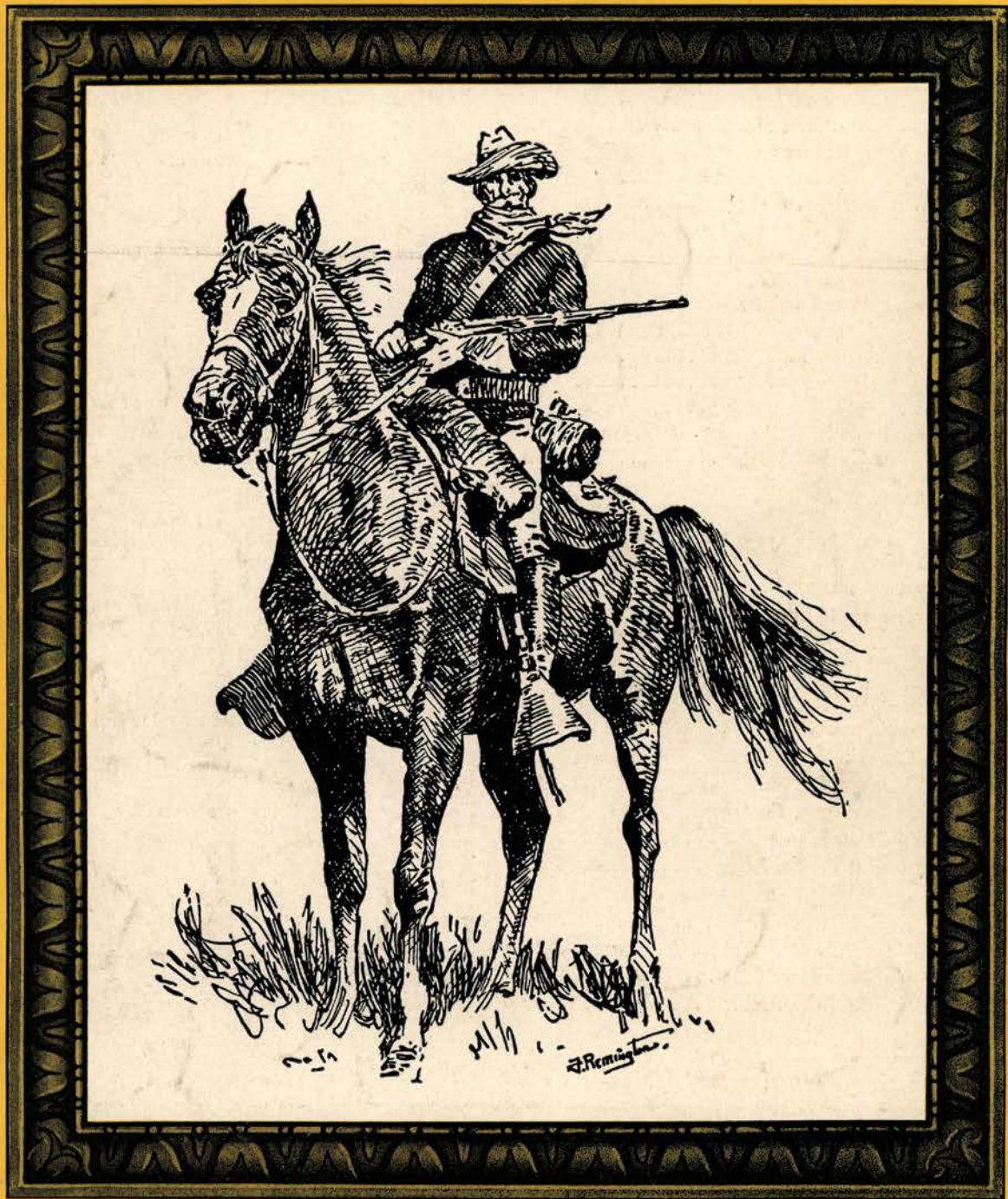
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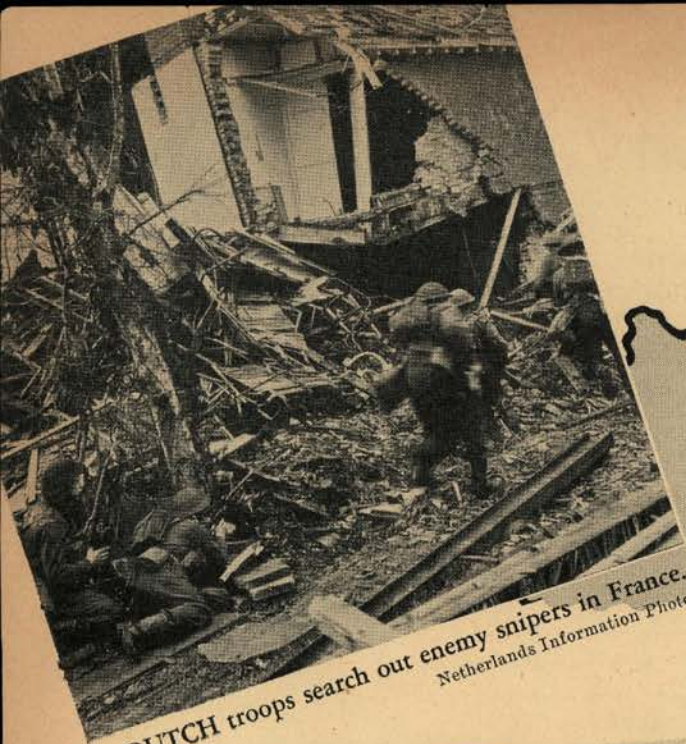
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DUTCH troops search out enemy snipers in France.  
Netherlands Information Photo



BRITISH artillerymen fire on Tilly-Sur-Seulles, France.  
British Official Photo



UNITED STATES tank destroyer troops advance on Fontainbleau.  
Signal Corps Photo



POLISH infantry hold heights in the snow-swept Appenines.  
British Official Photo

BELGIAN soldiers trained in England, now fight in France.  
Belgian Information Center



FRENCH PATRIOTS join Yanks in Southern France.  
Acm







FRENCH poilus, equipped with American tanks, parade through Paris.

U. S. Signal Corps Photo



RUSSIAN reconnaissance units reach East Prussian frontier.

Sovfoto

RUSSIAN cavalry advance on Lublin, Poland.

Sovfoto

"Clear the road to glory,  
Sound the rousing drum;  
Now to end the story,  
Tell the world we come!  
Victory advances, land and air and sea,  
Clear the road to glory till the whole  
of the world is free!"



GREEK paratroops board R.A.F. transport in Italy.

Air Ministry Official Photo



CANADIAN engineers celebrate opening of road in Normandy.

Press Association





# ARMOR IN BATTLE OF N

ANY military commentator who reads the contemporary military comment in the newspapers of the last war will emerge from that experience—as I myself have emerged—with the discovery that more often than not contemporary judgment is reversed by the verdict of history.

Is there then any immediate judgment that can be passed on the Battle of Normandy which may stand some chance of survival at the bar of history? I believe that there is one such judgment: The American employment of armor in this battle has registered an advance on the ideas of even the most fervent prewar exponents of the use of armor.

Destroyed and captured tanks of a German armored unit remain in one of the fields northwest of St. Lo. Track marks of the vehicles cover the fields, which are surrounded by the familiar hedgerows of Normandy. Narrow roads and hedgerows prohibited maneuver, and greatly limited armored warfare on the Normandy peninsula.

Press Association



## OVER-ALL PICTURE OF THE BATTLE

Whether or not by intention, the Normandy Battle conforms to an old pattern—a pattern successfully employed by General Montgomery in the Battle of El Alamein.

How was that decisive battle of the African war fought? At El Alamein, the Germans and Italians stood in dense formation on a 40-mile front between the sea and the desert, without a flank that could be turned. This portion of the desert, the Quattara Depression, was impassable for tanks. Through an elaborate deception in plan, General Montgomery set out to mislead the enemy about the time, place, and strength of the forthcoming attack. The Germans expected this attack to be delivered at the center of their line, and it was the intention of the German commander to allow British armor to pass through and then to counterattack from both flanks. The British put in the main attack in the north at a time when the German and Italian forces and half the German armor were pinned down in the south by divisionary operations.

What was the pattern of the Normandy Battle? In Normandy, the Allied forces had no room to maneuver, no enemy flank to turn; each flank of that 60-mile front rested on the sea. Again it was the basic plan to batter the enemy on a static line. Not until the Allied High Command was satisfied that the German forces in France were thoroughly committed on the Normandy front was the decision taken to assault and to break out. That decision was implemented on July 25.

During the course of this assault, the British and Canadians twice attacked at the eastern sector of the front. The first attack failed to achieve a break-through; the second succeeded in reaching its limited objectives. After this second attack, the British Guards Armored Division, which had taken part in it, was ordered to occupy the forward slope of captured ground in the neighborhood of Vaucelles, the factory area of Caen. During the following week they continued to occupy this slope in full view of the enemy.

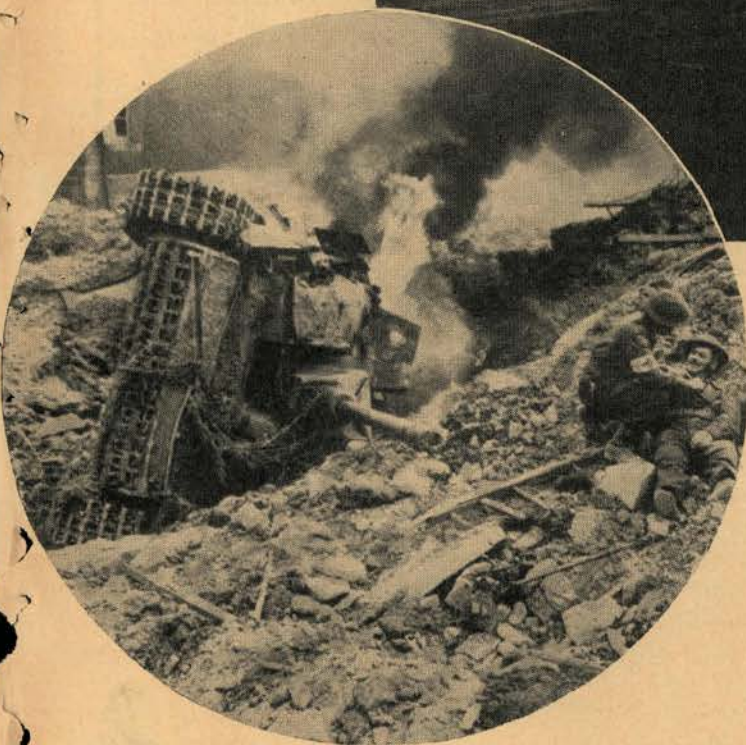
Together these attacks—and the threat of more to come—served to draw the bulk of the German armor to this sector and to hold it there. This concentration of German armor at Caen enabled the American forces to achieve their break-through at St. Lo on the western sector—an advance whose admirable dash and vigor was



# ORMANDY

*British Army*

Press Association Photos



A German tank burns on the side of a road in France, where it was pushed after having been knocked out by troops of the Canadian First Army during the push on Falaise. At right, wounded Canadian soldier gets first aid.

speedily supported by a renewed British advance in the center and a third Canadian attack in the east.

The Allied commander had now secured an enemy flank to turn. Unlimited room for a maneuver became available and at last the opportunity presented itself for the full exploitation of the Allied superiority of force.

## GERMAN DEFENSE

Before asking precisely how this superiority was exploited, it is necessary to look at this old battlefield. Why did the Allied superiority of force achieve so little on the left of the line during earlier attacks? The answer is quite simple: the British and Canadians were up against elaborate defensive preparations on a short

front held in great depth. Superficial obstacles to speedy advance were dug-in tanks and guns, concrete strong-points, villages booby-trapped from one end to the other, minefields covering the approaches to these villages—these minefields themselves being covered by skilfully concealed 88mm guns—and tripwires in every likely or unlikely hedge.

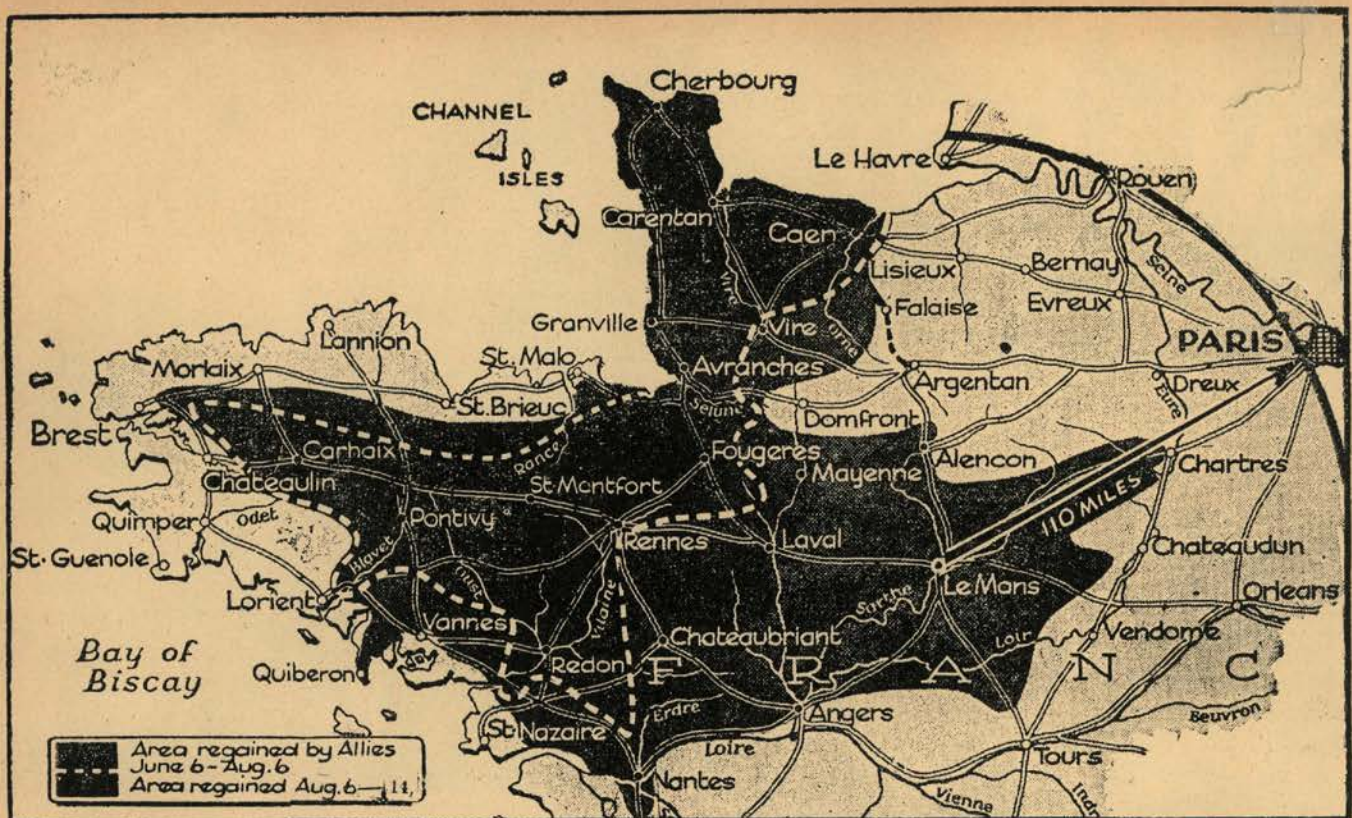
Such obstacles are referred to as superficial, because the real strength of the defensive preparations lay in the German organization for fighting a defensive battle. This system, organized on the basis of elastic and mobile defense in great depth, comprises first a lightly held forward zone, designed to withstand the first shock of attack from both ground and air; second, the main battle zone, in which the defensive battle is fought out; and stationed immediately behind it, the counterattack organization—mainly armor—which may or may not be called into action. Thus any Allied advance in its initial stages could at best represent only a break-in.

Even so, in view of the unprecedented Allied air support, why was the break-in itself no more than an inch-by-inch advance on the bloody road to Falaise? The ultimate answer is not that the hilly and closely wooded country south of Caen was admirably suited for fighting a defensive battle; it is rather that under these conditions of terrain, the superior speed and maneuverability of Allied tanks was unable to offset the superior fire power of the heavier German models.

It is probably a waste of breath to discuss whether







or not Allied tanks equal German models, because comparison must always be qualified by conditions. The fact remains that tank commanders are generally agreed that if a column of Shermans met a few Tigers in a hedged and narrow road (and the average road in Normandy is both hedged and narrow) there would be nothing to do but turn tail—if there were room to turn.

In any event, the function of an armored division is not rough and tumble fighting, but exploitation and pursuit. If armored divisions are properly to be regarded as the modern equivalent of the cavalry, cruiser tanks should not be called upon to open a necessary gap in the enemy front.

#### THE CAEN HINGE

Thus, for 70 days after D Day, the unspectacular rôle of pounding against the strongest defenses encountered in northern France fell to the British and Canadian armies. Once the Caen "hinge" was broken, it became their equally unspectacular task to exterminate by invading force and establish sufficient strength to proceed. If the commander fails to resist that temptation to attack prematurely but launches tank and infantry forces into a deeply defended zone without secure lines of communications and without flank protection, he will invite disaster.

This picture of the eastern sector of the Normandy front is one of a defensive belt some ten miles deep. Quite obviously in the German view it was a critical sector. If it was lost, not merely the road to Paris but the coast line north to the Seine was lost, and the German High Command must have been well aware that its only chance of keeping a stable line in the west was

to compress, and continue to compress, the now fully established Allied bridgehead.

Caen was the Stalingrad of the west: retreat would ultimately involve the ruin of the entire front. Nevertheless, it was the exploitation of the break-out battle, rather than the battle itself, that served to throw the German army off balance. It is safe to assume that the German High Command, even in its more imaginative moments, could not have contemplated such superb, and hitherto unequalled, demonstration of the modern use of armor.

#### GENERAL PATTON'S USE OF ARMOR

Before this war, the sublimated use of armor—that is to say, its use outside the rather pedestrian sphere of close infantry support—was to strike at the brain of the enemy command or, in more specific terms, strike at the enemy's actual headquarter locations. Such was the foundation of the famous "Plan of 1919" for the use of British armor in France in World War I. That plan was never put into operation nor is there an example of it to be found in World War II.

It cannot be said that the British armored drive on Tunis in the African Campaign struck at the brain of the enemy commander. Rather it was a battering ram designed to split and rive and rend the whole of the enemy front. Again, encircling battles in the western desert—both British and German—were fought on a comparatively small arc and never did succeed in their main object—that of trapping large enemy forces.

On the other hand, the armored thrusts in France by Lt. General Patton's American Third Army have been true enveloping movements, perfectly conforming to



the old cavalry tradition from the point of view of disrupting enemy communications and of isolating enemy concentrations. It is in the amplitude of their conception, in their depth, and their wide dispersion that these great wheeling thrusts have made military history. They have brilliantly demonstrated what can be achieved by such thrusts against a widely dispersed and insufficiently mobile enemy. They have extinguished at a blow Germany's far-from-mythical "Atlantic Wall." They have vindicated General Patton's own battle creed "Attack rapidly, ruthlessly, viciously, and without rest." They have achieved the apotheosis of armor.

#### GERMAN COUNTERATTACK

Dramatic successes in war are rarely obtained without risk—and that risk was duly taken by the American Third Army. The German attack in the Vire sector which started on August 6 was intended to take the form of an armored thrust aimed at splitting the Allied front by cutting through the bottleneck at Avranches. At least four German armored divisions were allocated to it. The outcome of the battle was still unresolved a week later—when American troops were already across the Loire and engaged in mopping-up Brittany.

The German decision to undertake this all-out attack can hardly be regarded as an unjustifiable gamble. Indeed, in the view of the German High Command, it must have offered the highly favorable prospect of reversing the whole course of the Battle of France, for had it succeeded, the American First Army could have been resoundingly defeated in a straight fight, and the

American Third Army would have found itself cut off in Brittany and utterly marooned in its thrust between the Loire and the Seine. The German High Command, however, reckoned without the tenacity and resilience of the American forces, the spell of fine weather, and the rocket-firing typhoons of the R.A.F.

It was on the morning of August 7 that the lifting of low clouds revealed a German concentration of armor near Mortain.\* During the following week of battle something more than the equivalent of armor of a German armored division at full strength—that is, over 200 tanks—was put out of action from the air, apart from the havoc wrought among transport vehicles. It is a measure of the menace of the situation that the German attack was maintained despite these losses.

#### CONCLUSION

The policy of a "direct smash" at Germany in order to speed up the decision in the far east is magnificently succeeding, and must be a cause for gratification that the respective contributions of the Allied nations in the Battle of Normandy should have been so thoroughly representative. The British and Canadian armies—a large proportion of which had fought in other theaters of war—were called upon to display those dogged fighting qualities in which they excelled in World War I; and the American armies, newly arrived on the battlefield, were presented with an opportunity to exhibit those qualities of vigor and enterprise so eminently characteristic of the American temperament.

\*See "Rocket Typhoons—Answer to Panzers," page 8.

An American tank races through La Chappelle on the heels of retreating Germans. On right is a wrecked German tank. After the break-through from Normandy, the speed of the Americans almost doubled the German blitz of 1940.

Press Association





# ROCKET TYPHOONS

**In the Battle of France, a new and startling anti-tank weapon destroyed German armor and made possible the sweeping victories of Allied arms.**

## What Are Typhoons?

*by Major Oliver Steward*

**R**OCKET typhoons are big for fighters. They have a wing span nearly 10 feet greater than that of the clipped-wing Spitfire but are small for their striking power. They can deliver an aimed and fully controlled blow at a greater range than other aircraft. They are the long arm of war, for they can reach out to otherwise inaccessible targets and hit them very hard.

Rocket-firing fighters translate the cavalry charge into mechanical terms. The typhoon, which has a 24-cylinder Sabre engine, has a top speed somewhere near 400 miles per hour, although it is slower when carrying rockets. After identifying its target it moves in to the attack in a dive. Perhaps it is more accurately likened to high speed artillery than to cavalry for it can outpace the fastest self-propelled gun and place a big charge on the target.

The rockets are on guide rails under each wing. The pilot sights much as he does for directing machine guns or cannon and fires the rockets electrically. Then the rockets leap from the guide rails and, stabilized by their tail fins, outpace the fast-moving aircraft and rush down on the target.

There is where the essentially aerial character of the rocket is seen, for although the warheads are large, there is none of the recoil of a comparable cannon.

They combine lightness with strength. The aircraft does not check the rocket's course as it does when 40mm cannon are fired. Instead of the missile leaving the aircraft at top speed and slowing down on the way, its speed is accelerated as it approaches the target. There is no kick and plenty of ha'pence in the rocket missile.

It is a pity that the official genius for using the wrong term has again been shown here and that the thing has been called a "rocket projectile." One thing it is not is a projectile. It is not thrown toward the target. It propels itself on its way.

### DEVELOPMENT OF PRESENT ROCKET TACTICS

During the North African campaign the belief developed that aircraft might be able to beat tanks if they could be given enough striking power.

The Hurricane 11-D was an attempt to provide this striking power. It carries two 44mm cannon, one under each wing, and a pair of machine guns. The original scheme was for the pilot to open fire with the machine guns, adjust his aim by their tracers and then turn on the cannon. Although a sound idea, its application met with practical difficulties. The kick of the cannon threw the aircraft off its course, and the only genuinely aimed shot was the first one. Again, it was found that 40mm cannon were suited to very few targets, with the consequence that Hurricanes tended to become too highly specialized and to be incapable of helping much in day-to-day fighting.

Yet .303 and .500 machine guns and 20mm cannon



*Above: A Rocket Projectile Typhoon takes off for a raid on the enemy. Eight Rockets are in grooves beneath the wings. Left: This German tank near Bretteville, southwest of Caen, was turned completely upside down as the result of attack by rocket-firing Typhoons, July, 1944. In addition to knocking out enemy tanks, Typhoons smashed German transport, supply columns, radio location installations from Brest to Belgian border; completely demoralized enemy communications.*



# Answer to German Panzers



failed to hurt enemy tanks. Their projectiles bounced off with a sound such as made by dropping a dustbin. A 44mm cannon, which is the size of a Bofors, was only just big enough. Bigger cannon were suggested and a special 75mm cannon is now being mounted in front on some American medium bombers.

But the fundamental objection remains that with any kind of a gun, the projecting apparatus is heavy, out of all proportion to the charge that reaches the target.

Rockets are not new. Captain Albert Ball flew an aircraft with *Le Prieur* rockets in the war of 1914-1918. They were intended for attacks on airships and balloons but were, in fact, used successfully once or twice against enemy aircraft. They were carried on either side of the fuselage between the biplane wings of the machines of that time and were fired electrically.

The new thing about the present use of rockets is that they are successful against a large variety of small, well-protected ground targets and ships. Destroyers are reported to have been sunk by them.

In the rocket, the ground-attack aircraft has found the weapon that suits it best. It is possible that dive-bombing may one day be entirely superseded by rocket attacks.

Early in the war the Russians telescoped dive-bombing and rocket attacks when they fitted their Stormoviks with rocket bombs. But it seems that a specialized rocket attack is more useful.

The greatest of many successes scored by the British rocket-firing Typhoons was the damage wrought among German tanks which were moving up to counterattack in the Avranches region. Allied rocketeers are now being called in whenever the target is both small and thick-skinned. They are, I think, the most important of the new tactical air weapons.

The future will probably see increases in the size of the rocket. Americans have reported being attacked by German fighters firing rockets with warheads of eight-inch diameters. At any rate, it is clear that the military development of some kinds of aircraft will be bound up with the development of this weapon.

## Typhoons in France

*by Wing Commander L. V. Fraser*

EVERY day that the Allied offensive bit through Normandy, the power of a new air weapon—which has been developed into a major arm in the last few months—was strikingly demonstrated. It is the rocket.

Rockets have sprung into prominence in the last stages of this European war much as tanks did in World War I. On all sides there is talk of rockets. Some time ago London's antiaircraft barrage developed batteries of rocket guns to protect the skies against the Luftwaffe. Russian Stormoviks sweep down against German tanks on the eastern front with some similar rocket device. The Germans for their part threaten London with the "V-2," which is thought to be some sort of rocket shell. The battles in Normandy witnessed the first big-scale use in Europe of rockets fired from aircraft.

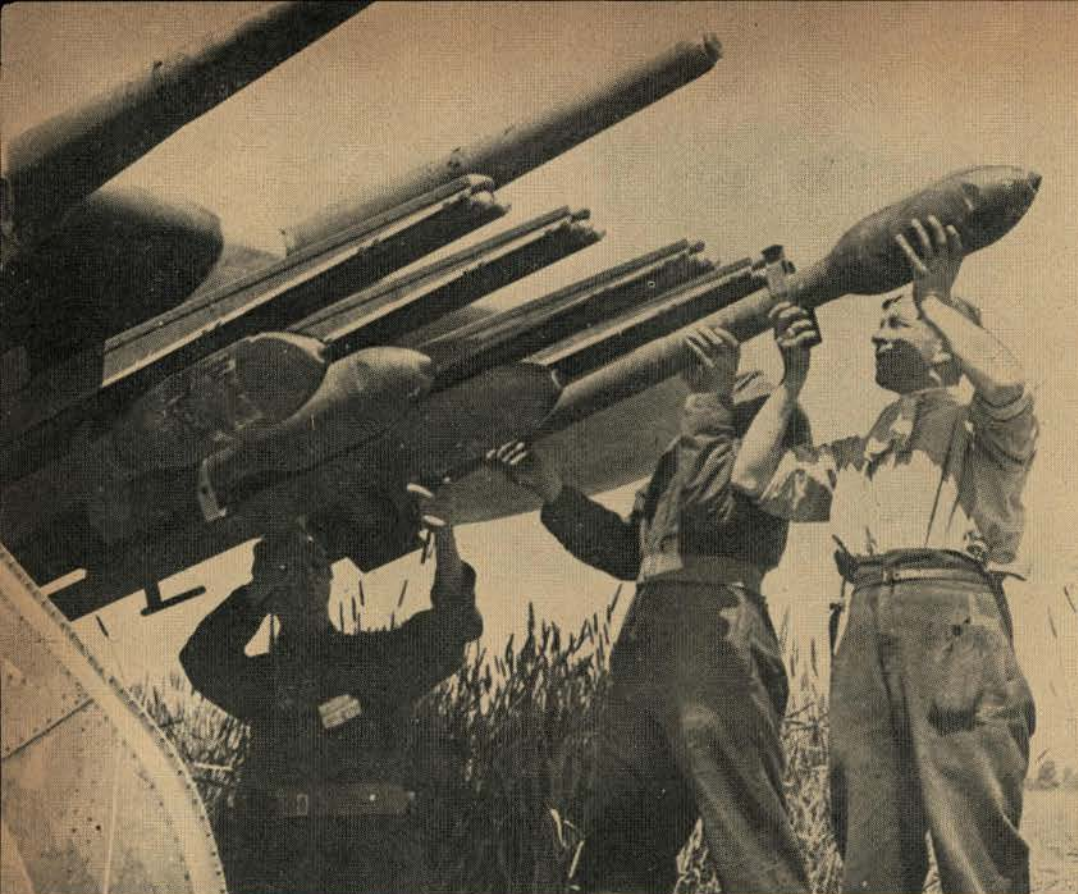
### NEUTRALIZING ENEMY RADIO

The Typhoons' first big assignment came a few hours after British and United States troops landed on French soil. They were required to put out of action every enemy radio station from Belgium to Brest; and their efforts were an outstanding success. Subsequent estimates claimed that 95 per cent of the radio chain had been silenced. The odd five per cent were jammed.

The entire German warning system was thrown into confusion. A string of silent radio stations along the coastal belt meant that enemy headquarters inland failed to receive adequate warning of the invasion. This factor, combined with a shattering attack on selected coastal batteries, was a direct means of saving thousands of Allied lives. It contributed in great measure to the unqualified success of the initial landings.

In order to fox the enemy, a large area had to be attacked. Heavy concentration upon one group of radio stations would have been plain indication of the point of attack. So the Typhoons swept a huge area, and the





British Official Photo

An R.A.F. ground crew loads a Typhoon with rocket projectiles on airstrip in France. Note rails for placing rockets. Rocket case consists of a shell is ignited by a small platinum tube filled with cordite which wire. The consequent flow of gas issuing from the tail propels the rocket and its warhead along the rails in the sighted direction. Four fins are fitted to the trailing end of the rocket for stabilization in flight. An aircraft can carry eight projectiles and has the advantage of being able to fire either two at a time or a salvo of all eight at one target.

principal purpose of the raid—to reduce the enemy's warning system to impotence—was achieved.

With the invasion in full swing and the radio stations silent, the "Rocketeers" turned their attention to keeping the Channel clear for the stream of Allied supplies coming to the beachheads. They were particularly successful off St. Heiler, Jersey, where Typhoons, escorted by Spitfires, scored direct hits on three mine-sweepers after diving low over the vessels. On the island of Jersey itself, other R.A.F. rocket-firing aircraft swept down on another radio station and its adjoining buildings.

#### DESTROYING TRANSPORTATION

As the invasion pushed inland, rocket-firing aircraft ranged ahead, seeking out and destroying any suitable target beyond the "bomb line"—the limit behind which Allied troops were operating.

All these aircraft are "free lance" and have a freedom of action unknown to formations detailed to bomb special targets. They may range where they will within a given area and single out any object worthy of attack. In this way, German reinforcements struggling to reach the battle areas over a tract of country shorn of its bridges and uninterrupted rail sectors, were obliged to face murderous fire.

Time and again during the Battle of France formations of rocket-firing Typhoons swept down on convoys, tanks and transport and staff cars moving north and northwest from depots of central France to the front line. Returning pilots told of the enemy's frenzied dashes for the woods, and of convoys of flaming trucks abandoned along the highways.

Trains waiting at stations were singled out for attack

and more of Germany's precious rolling-stock written off as R.A.F. machines dived down and aimed their projectiles at the target by the simple process of "pointing" their aircraft in the required direction. In order to assess the damage they had done, pilots had to peel off and circle immediately their discharges had been made.

Some of the R.A.F. pilots operating rocket-firing Typhoons over the battle area have first-hand knowledge of the ground. They have motored and spent their holidays there in peacetime. This gave them a special advantage when they were over the heavily wooded country behind sections of the Normandy bomb line.

#### TECHNIQUE OF ATTACK

Although a pilot of a rocket-firing aircraft is, broadly speaking, a free lance unless directed against a specific target, formation attacks are naturally coördinated. Thus, when a squadron of Typhoons set out to attack a column of tanks on one occasion, the wing commander directed each aircraft to a tank. All dived to attack; each fired a salvo. Observation showed that six tanks had been smashed, set on fire, or blasted from the highway.

Describing the technique of attacking with rockets, fighter pilots state that the sights are adjusted according to the angle of attack and the projectile loosed when the target actually comes into view. There is no sensation at all. The rockets glide from the three rails without rebound or concussion, but action to get out of the dive must be taken immediately in order to avoid being blasted by the subsequent explosion.

As the forces of Britain and the United States press farther into Europe and the bomb line moves eastward to Germany, rocket-firing planes will penetrate deeper into the interior to harass the Nazis. They will seek



out and destroy every contingent of men and materials that Germany sends to reinforce her hard-pressed battle troops. In so doing, they will not only lighten the task of the Allies' liberating armies, but will contribute to the steady drain on the enemy's limited means of transport and replacement. The rocket projectile is adding its quota to the various means employed to overthrow an army now largely devoid of air support.

## Typhoons vs. Tanks at Mortain

*by R.A.F. Adviser to British Information Services*

THE success of the R.A.F. rocket-firing Typhoons in smashing the German armored counterattack against the Americans at Mortain might never have been achieved had it not been for a chance patrol two weeks after D Day. Until that time many senior officers did not believe that the Typhoon rocket could hit and knock out a moving tank.

A flight of Typhoons had been sent out on an armed reconnaissance trip in France and they had been given a list of targets to look for. "If you can't find them," they were told, "take a crack at any road transport that you see."

The Typhoons did not find any of the specified tar-

gets and they did not see any road transport, but they did encounter three Tiger tanks and went into the attack. All three tanks were knocked over on their sides and two of them were left burning. The Typhoons had proved beyond any doubt that they could do it.

That is how it was that a certain American commander, when he saw the German tanks coming at Mortain, immediately thought of the Typhoons. Cutting right across all the red tape he telephoned direct to the R.A.F. and asked them to send some "Typhies" over at once.

"A pleasure," said the R.A.F. And to everyone concerned except the German tank crews it certainly was a pleasure. Working a shuttle service until it got too dark to see, the Typhoons got to work on the tanks with such good effect that they destroyed 81; and probably destroyed 27 more and damaged a further 27. The attack was completely broken.

Alan Melville, BBC correspondent in France, was able to visit the scene of this attack, and here is his picture of those damaged and destroyed German tanks.

"Those that are damaged are really damaged. Those that are destroyed are no more. It is hard to imagine how anything can make an impression on the hide of a Panther tank, but there they are, lying in the fields north of Gavray for anyone to see, the plates of their turrets split and ripped wide open, flung on the grass as far as 50 yards away from the rest of the tanks, some with the track torn off completely. One turned upside down is lying with its turret crumpled up under it. . . . It had been rocketed upside down. All around, ammunition, pieces of equipment, bits of instruments are scattered over the fields."

These German tanks and transport were devastated by rocket-firing Typhoons. While assisting American ground forces at Coutance, R.A.F. Typhoons in one day of "shuttle service" claimed more than 30 tanks destroyed, in addition to armored and other vehicles. After checking the area American intelligence officers later officially credited the Typhoons with 50 tanks. In effect, they had accounted for about half of the total armor of a German panzer division.

British Official Photo







Press Association

American tanks, with armed infantrymen aboard as passengers, stream through the French city of Coutances as they press forward their attack, following a break-through in the enemy lines. Armor poured through the gap in great strength.

*by Captain Arthur L. Paddock, Jr.*

THE Allied drive toward Germany, over hallowed battlegrounds of World War I where hundreds of thousands of French poilus and American doughboys spilled their blood, has been as economical in casualties as it has been rapid in movement. The American First and Third Armies, commanded respectively by Lt. General Courtney R. Hodges and Lt. General George S. Patton, Jr., with a lightning-fast armored force spearheading each drive, have swept toward the Siegfried line with greater speed and finesse than Hitler's blitzkrieg of 1939-40—and it is because the Allies have perfected to a fine science the infantry-artillery-tank-air force team.

The armored division for the first time was employed over a sustained period as its progenitors visualized it. A powerful force led by tanks, closely supported by motorized or armored infantry and mobile artillery, methodically, yet speedily, tore to shreds the German divisions deployed against it. Jumping off from positions near St. Lo, against the sea, on July 26, armored columns pounded 5 miles through the difficult hedgerow country of Normandy in the first day's action. By the second day they had passed Marcigny and were within medium artillery range of Coutances, squeezing the jaws of a trap which held seven Boche divisions, including the 2d and 18th Panzer Divisions.

It was not until the seventh day, August 2d, however,

that American armor began to roll with great speed. Bursting out of the relatively narrow Normandy salient, Yank tanks spilled into Brittany and the American 6th Armored Division, never before in battle, sped 140 miles down the Breton peninsula into the gates of Brest. Another column, in General Patton's Third Army, swung through Rennes and headed toward Paris. Covering 125 miles in a week, it broke through the Germans' best natural defense barrier before the historic French capital at the Sarthe River.

By that time all who would look could see that Lt. General Omar Bradley's plans called for a mighty infantry-artillery-tank-air team—a 1944-model blitzkrieg that knew no parallel in history—to carry the fight into Berlin. Infantry, riding on tanks, in light armored vehicles, sometimes on Shank's mare, mopped up after the fast-moving tanks, consolidated gains, swiftly herded thousands of demoralized German prisoners to the rear and continued to press on.

The armored division was employed in mass against powerful opposition perhaps for the first time since Mateur and Tunis, with the possible exception of the American 2d Armored's end-run to Palermo in Sicily when Patton commanded the Seventh.

That same 2d Armored, the "Hell-on-Wheels" outfit which had landed on November 8, 1942, at Safi and Port Lyautey and again in July of 1943 in Sicily, now



# Hitting War—U.S. Style

under the command of Major General Edward H. Brooks, spearheaded the drive in France. Likewise the 3d Armored, commanded by Major General Leroy H. Watson, and the 4th, under the command of Major General John S. Wood.

By the first week in September Patton's columns had pounded into Verdun, the historic French city where, many of his men recalled, their own fathers had bled and died in 1917-18. In less than a day General Patton's army had taken ground that in World War I had required 4 years of relentless pounding and copious bloodshed to take.

Meanwhile, armored columns of General Hodges' First Army, operating on the left flank, had trained their guns on the Belgian frontier and seriously imperiled the right abutment of the Siegfried line.

Here, too, the armored division and the various separate tank units were being committed to employment as its experts had dreamed. Tank columns were closely supported by infantry and artillery. Deadly air activity broke through to mill around in the enemy's rear, disorganize his supplies, his reserves, his morale, and his communications. With bit in teeth, armor charged across the quiet French country toward Germany.

It was an Allied reincarnation of the German blitzkrieg of 1939, only it was a better blitzkrieg. It was planned with care and carried out with precision. General Bradley's headquarters imposed radio silence in the armored columns. By refusing to disclose the last reported position of armor in its drive toward Sedan, General Bradley both disconcerted and disorganized the enemy. They knew not where to expect the Yanks. Often the muzzles of the Sherman 75's and the clatter of tank treads were at their back door by surprise.

The whole operation, commencing in late July and climaxing a month later with the capture of Paris, was typical of what had been laid down as proper doctrine for tank units. Surprise the enemy. Strike him from the flank and rear while holding him down on the front. Break down his communications, tear into his reserves, destroy his supplies.

If it can be said that there was any one factor responsible for the success of the British, Canadian, American and other Allied troops in the drive on Verdun, it was the unity of effort—the close coöperation of all arms—tanks, infantry, artillery, engineers, mechanized cavalry, and air.

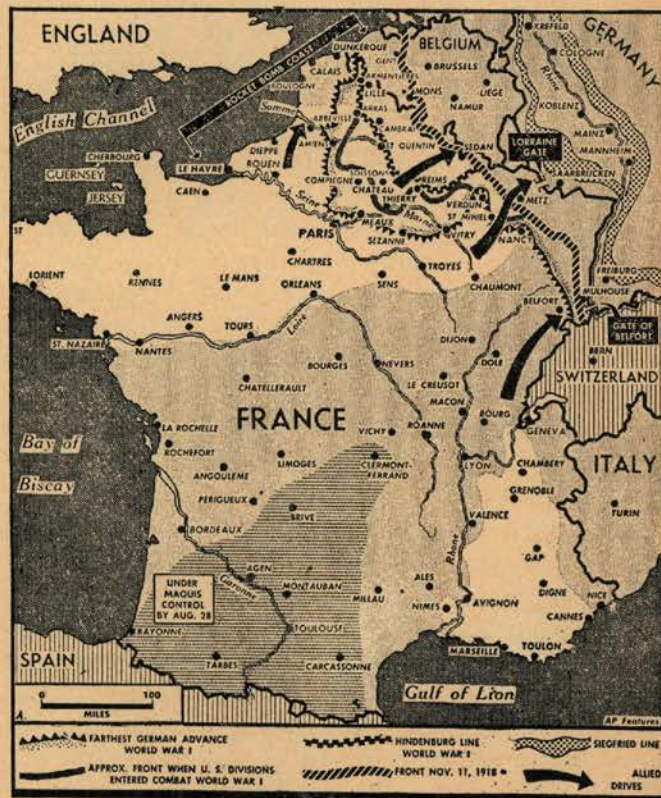
Also characteristic of the Allied drive was the au-

dacity of maneuver, which the Russians have developed to such a high skill, and which Hitler's own Panzers initiated in 1939 to demoralize and destroy a frightened and ill-equipped French army. Early in the Normandy campaign, the tank-infantry team—with infantry and engineers breaching each individual hedgerow with the close support of Shermans and Stuarts—had come into its own.

When, on July 28, the Americans had passed Marcigny, the powerful armored columns took every advantage of the disorganized enemy. By sweeping to the front and pushing swiftly to the German rear, they isolated at least 15 German divisions and accounted for thousands of prisoners.

It was a campaign that would have gladdened the heart of a Jeb Stuart and a Nathaniel Forrest: Generals Patton and Hodges were hitting 'em "fustest with the mostest," and as Wee Willie Keeler once said, "Hitting 'em where they ain't." The tanks were doing it, but without the infantry and the artillery and the engineers and the air they would not have done so.

Blitzkrieg, 1944, was a new application and a new technique of a science which had been developed five years before. Only now, its originators were feeling the pain of a better mousetrap.



Approximate Allied advance up to September 1.



# The "Impregnable" Netherlands

by Selden Menefee\*



Above: German soldier mans a pillbox at ebb tide along the Dutch coast. Left: Small Dutch farm houses are isolated in area flooded with sea water by Germans.

Photos Netherlands Information Bureau

WHEN American and British troops drove north through Belgium and into the Netherlands early in September, they outflanked one of the most formidable systems of fortification the world has even seen.

Four years of concentrated effort had been poured into building the Dutch sector of the Atlantic Wall. It contained all of the coastal defense installations that were encountered in Normandy, backed up by great expanses of flooded lowlands, which would have made a deep thrust inland from the coast by Allied mechanized units extremely difficult, if not impossible. The whole system was intended by the Nazis to remove the threat of invasion in that sector, so that they could concentrate their manpower on defending the remainder of Europe's west coast.

The Nazi's labor and matériel went for naught. Their coastal fortifications were largely useless once armored columns had penetrated the Netherlands from the South—as useless as was the Maginot line when it was outflanked in 1940.

Reports from inside Holland before the breakthrough indicated that by July of this year over 300,000 acres of farm land had been flooded, and a million persons consequently driven from their homes. Reconnaissance reports on September 1 further showed that the Germans had extended their inundation measures by destroying a system of temporary dikes, erected to enable the Germans to harvest crops from some sections of large drainage areas while flooding other sec-

tions. But the Germans were not permitted to stay for the harvest—at least, not in Southern Holland. (Some of the flooded land may be useless for several years while it is being drained again and cleansed of salt deposits.)

By August 1 a total of 61 Dutch towns, along the coast as well as in flooded areas, had been completely evacuated of civilians by the Germans. In the coastal city of The Hague, capital of the Netherlands, close to 100,000 people were evacuated and all buildings cleared from a strip of land through a thickly populated section of the city, 600 feet wide and a mile and a half back from the shore, to make room for tank traps and gun emplacements. Devastation of this sort has probably destroyed as many dwellings as all the bombings of Dutch towns and cities during this war.

Despite all of these defense measures, however, there is plenty of evidence that the Nazis were uneasy about Holland. On April 26, 350 medium bombers of the RAF and the American 9th Air Force raided the vital Dutch seaport of IJmuiden, at the coastal end of the Amsterdam shipping canal.

According to eyewitness reports the attackers lost only one plane while they destroyed many coastal pillboxes, smashed concrete pens for E-boats and trawlers, blew up munitions dumps, damaged vital war plants and eliminated 600 Nazi troops, 400 of whom were killed when their air raid shelter sustained a direct hit. German antiaircraft guns on the beach and on ships off the coast were quickly silenced by the planes' machine guns and bombs. As a result of the

\*Director, Washington Office, Netherlands Information Bureau.



panicky behavior exhibited by many German soldiers and sailors during the raid, seasoned veterans were reported to have been sent in as replacements.

Late in May, Field Marshal Erwin Rommel issued an order of the day admitting that more and more German soldiers on the invasion coast of Holland as well as Belgium and France were deserting. Rommel prohibited the issuance of leave passes to soldiers and forbade all contact between the soldiers and the local population.

Meanwhile, the Germans were gradually evacuating their nationals from the coastal region, and moving administrative offices of the Nazi-controlled government inland from The Hague, Amsterdam and other cities on or near the coast.

New signs of the "invasion jitters" appeared when news of the Allied landings in France reached Holland. These Nazi jitters were intensified by General Eisenhower's repeated warnings to Dutch and Norwegian fishermen to stay away from the coastal waters of their respective countries. Reports via Stockholm said that only 45 per cent of the Dutch Nazi *land-wacht* (land army) reported to its barracks when the alarm sounded on June 6. Unable to trust the Dutch, the Nazis brought in German railway crews from the Reich and Hungarian and Croat troops and police to guard against sabotage and invasion. The Dutch were warned not to moor small boats in waterways near the coast under threat of confiscation or destruction.

Late in July, a 10 p.m. curfew was placed in effect throughout occupied Holland. German and Dutch Nazis were warned to hoard concentrated food rations and keep their bags packed for quick evacuation. German civilians who were not evacuated, and even officers, began to ask Hollanders with whom they had been in contact for "certificates of good behavior," and German soldiers tried to buy forged Dutch citizenship papers as insurance against an Allied victory. On September 5 it was reported by the Dutch underground that all Germans in Holland had been put in uniform.

Shortly after the Normandy landings in June, Arthur Seyss-Inquart, Reich Commissar for the Netherlands, had declared a state of siege and threatened death penalties for sabotaging German defenses, hiding members of the underground army, aiding Allied airmen, or failing to inform the German authorities of fallen planes or materials dropped by parachute to the underground.

At the same time, the Nazis mobilized all male residents of Rotterdam between the ages of 18 and 50, and schoolboys 16 and over, to work on the Germans' defense works. And a new attempt was made to recruit labor for German industry, which had already cornered close to 500,000 Dutch workers in the course of a four-year manhunt. Again, however, Nazi plans did not

work too well. The doughty Dutch sabotaged the invaders at every turn. On August 10 Max Bolokzijl, Nazi radio spokesman, complained that "shirkers and their accomplices . . . form a substantial majority."

A final factor in paving the way for Allied invasion was the well organized underground movement in Holland. Although the country is so flat that there was little chance to develop outright guerrilla resistance of the French Maquis type, the 250,000 "under-divers" were well organized and helped the Allies at every turn.

In the beginning, on June 6, they were told by Dutch Premier Pieter S. Gerbrandy to refrain from premature acts of violence in order to avoid retaliation, but to engage in passive resistance of a type which would be hard to detect. The underground itself warned its members of German plans to demolish everything and kill all anti-Nazi suspects as they retreated, and gave its members detailed instruction on how to thwart the German plot to ruin if they could not rule. Other instructions were sent to Dutch workers in German forced labor camps. General Eisenhower recognized the importance of the Dutch underground by accepting the appointment of Prince Bernhard, husband of Princess Juliana and an officer in the RAF, as commander of the Netherlands Forces of the Interior, and by appealing to Dutch patriots in Rotterdam to prevent German destruction of harbor facilities. The Forces of the Interior coöperated with the Allied high command at every turn.

Meanwhile, free Dutch forces were doing their part on the outside. When the break-through into Holland came, the Netherlands Army's Princess Irene Brigade, attached to the Canadian Army, was mopping up German pockets around Le Havre. The Dutch air force, operating with the RAF and the Royal British Navy, had been active throughout the French Campaign. Dutch naval and merchant ships, which had been included in the Normandy invasion fleet, as they had been earlier in the landings on Sicily and Italy, assisted in bottling up the channel harbors.

One of the first acts of the Dutch Government after the Allies entered Holland was to be the establishment of machinery for recruiting a sizable army for the war against Japan. Netherlands Marine cadres have been training at Camp LeJeune, New River, North Carolina, and other U. S. Marine camps. They will be the core of this new army. Other segments of it are now being trained in Australia by former guerrilla fighters from Timor, and the Netherlands Indies Air Force has already been blasting their way back into the islands for almost two years. With nine million Netherlands freed from the Nazi heel, the Dutch will play a much larger part in freeing the East Indies than they were able to play in the liberation of their home country.

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## How the Nazis Outsmarted Themselves in Holland

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# Tank



Over open country, such as shown here, tanks bogged down, infantry plodded through mud and fire.

Beyond the open terrain of the beachhead, Germans occupied the mountain ridges, in strength and harassed the beachhead force with heavy artillery fire.



by  
*1st Lieutenant*  
*Richard K. Gottschall*

THE drive on Rome began not on May 23, 1944, but four months earlier when the first wave of boats touched the Italian shore near Anzio. The drive was delayed for four months by an enemy determined to hold his Cassino line or else make the Allies drive to the north so costly as to be worthless.

Despite the failure of the beachhead to force withdrawal of the German forces from the Cassino line, the 90-square-mile toe-hold at Anzio compelled the Germans to throw division after division against it, and in so doing, weakened both the Cassino line and the German reserve in Italy. Undoubtedly, this attrition contributed greatly to the final break in the Cassino line and the capture of Rome four months later. As an attempt to flank the Gustave line the beachhead did not fail, but it did present a problem considerably more difficult than the Allies had planned.

The 1st Armored Division, less Combat Command "B," was sent to Anzio to provide a mobile striking force capable of reaching important road nets and trapping German troops on the southern front. It was planned that the division would be available for combat on January 29, seven days after the first elements of the beachhead force had landed.

The dogged German resistance that developed on

the beachhead front and Nazi determination to hold the Cassino line at all costs altered the mission of the division while the beachhead was still young.

From an attacking force with visions of cutting the roads leading south from Rome, the division became a counterattacking force with the mission of stopping any penetration of the beachhead defenses.

## INITIAL PLAN FOR ATTACK

On January 25, division headquarters disembarked at Anzio, and within the next four days closed in its designated assembly area. Orders were then issued to attack the following morning on the left of the corps. Using the Anzio-Albano highway as an axis of advance, the tanks were to push forward and secure the high ground above Lake Albano.

Combat Command "A," which then consisted of two tank battalions, a battalion of infantry, a battalion of field artillery and a company from both the reconnaissance and engineer battalions, was ordered to secure the line of departure for the attack. For this preliminary attack CCA used two companies of tanks and the reconnaissance company, but was unable to advance more than 2,000 yards. The line was outposted during the night preparatory to the attack in the morning.



# s in Static Defense--

## 1st Armored Division at Anzio

Before the attack could be launched, however, the medium tank battalion was withdrawn from the combat command and sent to the right of the highway, to aid the British, who were receiving an armored counterattack from the Germans.

The withdrawal of the armor, while it materially assisted the advance of the British, necessitated complete revamping of the 1st Armored Division's plan of attack. There was no time for more than hasty planning. The two battalions of infantry, reinforced by only a battalion of light tanks, lacked the necessary power to advance more than 1,000 yards.

With the attack abandoned, a tank battalion was detailed to make a reconnaissance in force up the highway to the railroad. Given only an hour's notice of their mission, the tanks had no time to reconnoiter or plan their raid. The battalion was forced to turn back after going another 1,000 yards.

The same day the remainder of the tank regiment was dispatched, still with little advance notice, to assist a British attack up the highway to secure a road junction north of the railroad. Again the raid failed to reach its objective, although the increased force was able to advance as far as the railroad.

It was obvious by that time that the American forces, as they then stood, could not make any appreciable gains against the troops the Germans had thrown into the line. Mud, consistently an important factor in slowing down any armored attack, made every road a defile. There was no opportunity to employ the division in its intended rôle.

### BEACHHEAD DEFENSE

With the decision to go on the defensive in the beachhead area, the division was ordered into corps reserve with the mission of being prepared to counterattack in any direction to block or cut off enemy penetration.

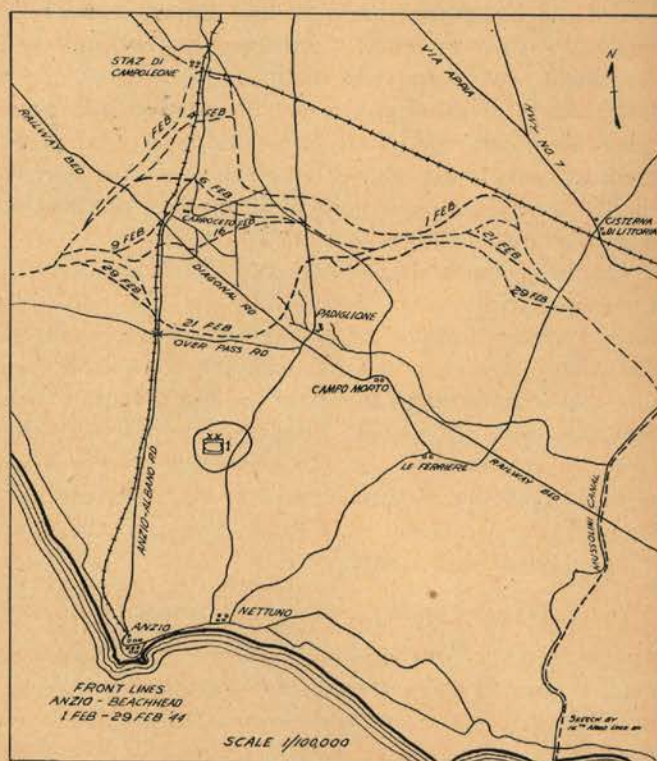
Conditions on the front line were almost intolerable for the infantry, whose sole jobs were patrolling and holding. In the east a natural barrier, the Mussolini Canal, eased the American-Canadian defense, but in the north a broad plain stretched to the hills. Dotted with innumerable Italian stone houses, that were often used to shelter German machine guns, the flat area afforded good fields of fire, and the swampy ground prevented the infantrymen from digging in. Infantry positions, therefore, were necessarily built above ground from layers of sandbags, easy to see, easy to hit.

On the left of the Albano highway, the British defended a sector that was fronted with a series of lateral wadis, which offered cover and concealment to the enemy attacker. The beachhead could be defended, but the fury of the German attacks against it made it a costly defense.

The area to the north, between the American and British sectors of the line, seemed to be the most probable line of approach for a full-strength enemy attack. The Anzio-Albano highway offered a good axis of advance and was probably the most favored of the approaches because it offered to the Germans the quickest route to Anzio and disruption of the beachhead.

It was obvious as the weather then was, that the use of tanks in a counterattack was strictly limited. The brunt of the assault would have to be borne by infantry, and in the seven counterattack plans finally drawn up a reserve infantry regiment was to be attached to the 1st Armored Division.

The strongest possibility of enemy armored action, in strength, was felt to be down either the west coast road or the Anzio-Albano highway. In order that the division, in its counterattack-force rôle, should have the



Anzio Beachhead Area.



earliest possible notice of enemy attack, listening and observation posts were established along the front line by the reconnaissance battalion. Direct fire positions were prepared for a battalion of medium tanks and two companies of tank destroyers, and indirect fire positions for the division artillery. The tank destroyer battalion and one battalion of medium tanks were prepared within the beachhead to cover both of these two most probable avenues of approach; also for the Cisterna road-net beyond the Mussolini Canal.

Without altering the primary mission of the division, a corps order directed that a secondary line of defensive positions be prepared to back up the front-line units. Thereupon the engineer battalion and the armored infantry regiment went to work. In addition to the defensive positions, and extensive wire and mine laying operations, the engineers were responsible for construction and maintenance of the road-nets necessary for division use in counterattack.

Rubble from the bombed and shelled Italian houses became the main material used to surface the roads. The problem of draining the roads, which became seas of mud after every rain, presented no easy task, and work details were drawn from virtually every unit of the division.

As the Germans hammered at the ring of beachhead defenses, their artillery fire and aerial bombardment increased steadily, and the division gradually went "underground." From sleeping on top of the ground, the men went first to shallow prone shelters, and finally to comparatively elaborate dugouts walled and roofed. The enemy's use of harassing artillery fire and small anti-personnel bombs, about the size of a hand grenade, forced the beachhead units to live almost entirely in dugouts with roofs made of salvaged lumber and covered by at least 6 inches of earth.

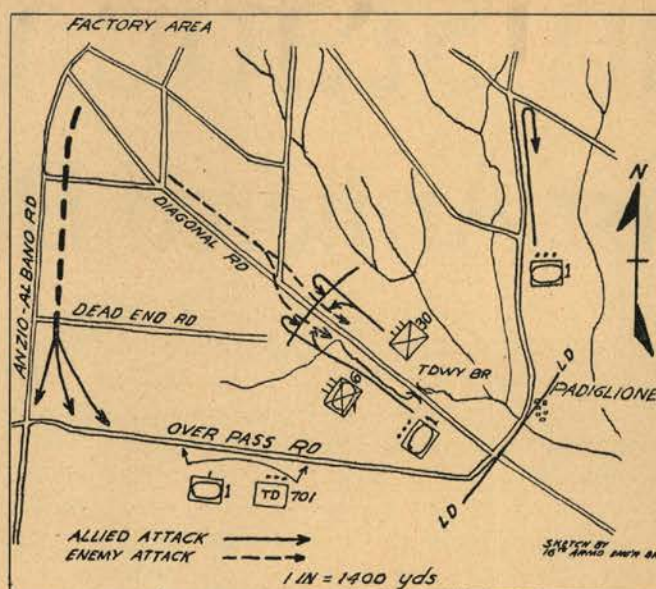
The bulk of the division was bivouacked in a pine grove which afforded excellent concealment. The sandy earth was easy to dig, and although the area was heavily shelled, casualties were light. The number of vehicles damaged was similarly low.

During the early part of February the division's tanks participated in two small raids. In one, the tank furnished armored support to a parachute battalion; and in the other, a battalion of tanks was sent toward the factory area in an attempt to restore the line. Neither raid, however, was successful. Boggy ground forced the tanks to stay on the roads, which were covered by German antitank fire. Again, because of the short time allowed for preparation, it was not possible for either raid to be planned thoroughly.

#### TANK ATTACK—BATTLE OF THE "DIAGONAL" ROAD

The attack of February 19 astride the "Diagonal" road, leading from southwest of Padiglione to the factory area, was as successful as its two predecessors were not.

Although the Germans had consistently attacked the beachhead defenses, it was not until February 16 that they had assembled enough infantry and armor to



Diagonal Road.

launch a full-scale offensive against the Allied lines.

With elements of 7 divisions, and an estimated 60 tanks, the Germans blasted their way to the Overpass road. Allied artillery chewed to pieces initial waves of the German assault, and small-arms fire of the American and British infantry on the line exacted a similar toll. But the sheer weight of superior numbers forced a rearrangement of the line. Although by February 17 German casualties had reached an appalling total, the force of the enemy attack still constituted a very real threat to the beachhead. American and British infantry holding the German lines had suffered almost as severely as the enemy. It was at that point that the 1st Armored Division was ordered by corps to put plan "Diagonal" into effect the following morning.

The German force had stopped to regroup and reorganize, but was apparently prepared to continue its drive to the sea the following day.

For the Diagonal attack, the 30th Infantry Regiment was attached to the division at noon on February 18th. The plan was to attack astride the road, with the 30th Infantry on the right and the division's own armored infantry on the left. Tanks would support the attack as much as possible, although it was expected that they would be limited to the road because of the continued rains.

About 2,000 yards beyond the junction of the Diagonal and Overpass roads there was a road gap where a bridge had been destroyed by the beachhead forces in an effort to improve their defensive position. Armored support would be stopped there if the bridge could not be repaired in time for the division's attack. The gap, which could not be by-passed, presented an effective tank obstacle.

Informed that the bridge gap was still in Allied hands, a bridging crew of two officers and 14 men was sent out from the engineer battalion. They found the bridge was outside the Allied lines.

A strong German patrol compelled the bridging



party to withdraw. The crew was forced to leave its bridging truck, and the project was abandoned until the next day. At 0530 the 1st Armored Division attacked from the vicinity of Padiglione in accordance with their prearranged plan. A one-half hour artillery preparation was fired, and the infantry regiments crossed the line of departure. Mud forced the division to limit its armor to a platoon of medium tanks operating up the road between the two infantry units. A company of tanks and a platoon of tank destroyers were emplaced along the Overpass road to provide further fire support, and a third armored force was dispatched up the road leading north from Padiglione to protect the division right.

To provide maximum armored support to the attacking columns, a shuttle system was operated up the Diagonal road. The platoon of tanks leading the attack would be replaced immediately by a reserve platoon as soon as the ammunition of the first had been fired. The road was the only possible surface from which the tanks could operate.

When the infantry reached a point 1,000 yards beyond the blown bridge, the engineer crew, which was again called out, found that the abutments had been blown by the German patrol of the night before. In broad daylight the crew set to work. Unexpectedly, the bridge truck had not been destroyed by the German patrol, and outside of small arms and shrapnel holes in the body, it was undamaged. The bridging material was intact, and the truck was in condition to operate.

Ducking into the stream bed while the Germans poured artillery on them, the crew worked feverishly to bridge the gap. Every sign of activity around the bridge brought a fresh barrage, but the bridge was erected, the crew evacuated, and the equipment removed.

As the tanks crossed the bridge the attack moved ahead, and the American force contacted a German column that had attacked from the opposite direction. The German force, already depleted by American artillery fire, was routed by the tank and small-arms fire from the fresh troops of the 1st Armored column. The Germans, unaware of the division's attack, had expected to meet an exhausted enemy.

A 1st Armored Division tank leaves assembly area near Anzio about February 18 for battle on Diagonal road.



German equipment lies scattered along the Overpass road after 1st Armored Division and infantry made advance of 2,000 yards. Gain was relinquished for lack of reserves.

At dark the infantry commanders reported virtually no opposition, but were ordered to halt their attack. German dead and wounded littered the fields; 143 prisoners had been taken.

The back of the German force had obviously been broken, but if the attack were pushed to the factory area, there would be no available reserve for the beachhead. The infantry divisions that had withstood the brunt of the German attack were depleted. Their lines could not be drawn up to cover the ground captured by the division, and a withdrawal was ordered.

During the night, the division was withdrawn and again reverted to corps reserve. The bridging crew was again sent out, this time to remove the bridge they had erected. The division mission of a mobile counterattack force was unchanged.

It became apparent in a matter of days that the German forces rimming the beachhead had suffered too heavily in their all-out offensive ever to repeat it in any thing like the strength they had employed from February 16th to 19th.

Reports from prisoners of war of German casualties in the action included stories that the dead were being buried in common graves by bulldozers. Whether or not such information could be relied upon, it was obvious that the German drive had been too costly. Kesselring could expect no more troops from the north to drive into the sea a beachhead that the Allies were determined to keep.

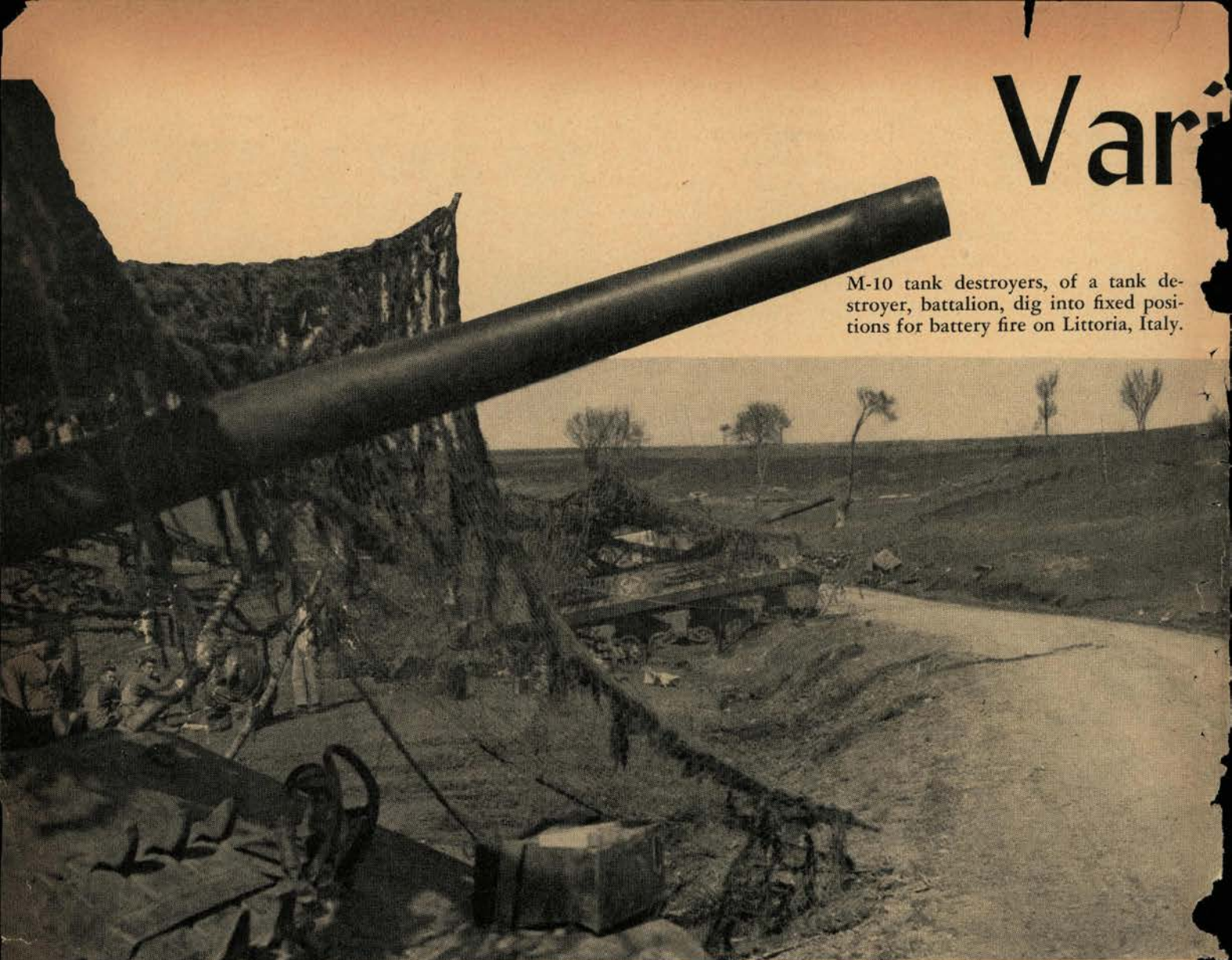
The attitude of the beachhead commanders turned from defensive planning to the possibility of attacking, and for the next three months the division underwent extensive training in tank-infantry attack problems. Plans "Buffalo," "Grasshopper," and "Turtle" came into being.

EDITOR'S NOTE: Another article by Lt. Gottschall, which will appear in the November-December CAV-ALRY JOURNAL, will discuss the employment of tanks in "a well planned attack over good tank country" during the break-through and pursuit past Rome to Viterbo and Canino.





# Vari



M-10 tank destroyers, of a tank destroyer, battalion, dig into fixed positions for battery fire on Littoria, Italy.

Signal Corps photo

ON a summer day in 1942, a student-officer at the Command and General Staff School looked ruefully at the "U" neatly stamped on his solution to a map problem, and remarked, "The moral to this story, gentlemen, seems to be, 'never commit your tank destroyer battalion before three o'clock in the afternoon, and never, never split it up.'"

The student had drawn a false inference. He had overlooked the conditions of the problem, and had forgotten that tactics depend upon the situation. The Fifth Army in Italy has encountered a number of situations which required a departure from established doctrines, and this has been particularly true of tank destroyers.

The now historic Fifth Army Anzio beachhead was a small segment of the world's battle fronts, but during the months that it threatened the German flank, it was the scene of some of the hardest fighting in the Italian campaign.

The enemy used massed infantry and armor in attempts to eliminate the beachhead forces. At first glance, it would appear that this was a situation in which all tank destroyer battalions would remain in mobile reserve, ready to repel an armored attack.

If the Fifth Army had been less strong in artillery,

such employment might have been necessary. With a preponderance of artillery, however, and the ability of every battery to fire on any point of the beachhead's short perimeter, it was not considered advisable to tie up useful supporting weapons as reserves.

## BEACHHEAD SUPPORT

Tank destroyer battalions are definitely useful supporting weapons. In the Anzio operation, the achievements of the X Tank Destroyer Battalion illustrated how valuable this support can be.

The battalion was attached to a British unit which was in position near Carroceto. The sector also included the factory area, a few acres of buildings in Carroceto which were of vital importance to the Fifth Army in defending an approach to the beachhead.

Company B, of this Tank Destroyer Battalion, serving with forward British infantry of a guards brigade, had been divided into platoons. Each platoon was so stationed as to render close supporting fires to the adjacent infantry. The M-10s, some from positions of hull defilade, others from protective buildings, covered likely routes of both armored and infantry approach.

On the night of 9 February, after a terrific artillery



# ations in TD Tactics

## —Some Lessons Learned in Italy

*by Major James S. Metcalfe, F.A.\**

preparation, the Germans sent infantry charging toward the British positions. A break-through at Carroceto would have enabled the enemy to smash into the beach-head proper and divide that small area into two parts.

The M-10s of Company B helped bear the brunt of the attack. Their three-inch guns and caliber .50 machine guns gave the British infantry that extra firepower which enabled the lines to hold. At the peak of the German onslaught, the M-10s fired at exposed infantry, and never displaced to the rear. Later, the grateful British spoke feelingly of the morale effect the presence of these armored vehicles had upon their troops.

This, and subsequent action, earned a unit citation for Company B, which read, in part:

"In affecting close support, Company B occupied positions in the very front of the lines, although normal procedure would have placed them farther to the rear in readiness to stem any armored thrust that developed. The vehicles of Company B operated as tanks, as mobile pillboxes, as assault artillery, as infantry, as artillery, as antitank guns, and as reconnaissance. This unorthodox employment enabled the company to participate in a series of engagements at close quarters with the enemy. . . ."

The ability of the tank destroyers and their crews to remain in dangerously advanced positions, and to deliver devastating fire throughout an attack, permitted the hard-pressed infantry to withdraw, reorganize, and occupy a secondary defensive line.

### EMPLOYMENT DURING ENEMY ATTACK

There were other occasions at Anzio when companies of the X Tank Destroyer Battalion saw similar types of action in the rôle of direct support weapons for foot troops.

During a violent German infantry attack, two M-10s of Company C held back the enemy for two hours. Although exposed to hostile small-arms and mortar fire, the machine gunners fired their caliber .50s with such good effect that the Germans were unable to close with the British infantry.

This same company, continuing to operate from forward positions, was credited with destroying four Mark IV tanks and one towed antitank gun, and it inflicted many casualties on enemy infantry during another

counterattack. A Mark VI (Tiger) tank and a personnel carrier were subsequently destroyed by Company C in this sector, and in following operations an antitank gun was demolished.

### BEACHHEAD ASSAULT

One of the more dramatic performances by this company was rendered during its attachment to the British. A German attack pushed the Fifth Army line back a short distance, and several British were captured. Hastily organizing a counterattack, the British piled troops on the M-10s, and like a horse cavalry charge of old, the vehicles dashed into the German lines.

Once behind the enemy's advanced elements, the British dismounted from the M-10s and fought on foot. Meanwhile, the tank destroyers had a field day—over-running hostile positions and firing at German infantry with every weapon on the vehicle and carried by its crew.

The raid effected the release of the British captured in the German attack. So complete was the surprise, and so demoralized was the enemy by the swiftness and boldness of the operation that the British and Americans bagged seventy prisoners. Many more could have been taken, but there wasn't room to transport them through the enemy lines on the already heavily laden M-10s.

Possessed of a high muzzle velocity, flat trajectory, and capable of great destruction when using armor-piercing, base-detonating ammunition, the three-inch gun of the M-10 is an ideal assault gun. It is made even more so by the mobility of its mount.

There was an occasion at Anzio when the British planned to attack over a relatively level stretch of terrain which was studded with many small houses. The Germans had converted a number of these solidly built stone structures into strong points and observation posts.

Prior to the attack, a platoon of tank destroyers was asked to eliminate these vantage points. One after another, the buildings were taken under direct fire, and were reduced to rubble. The infantry took its objective with a minimum of casualties, and the success of the attack was, in large measure, attributed to the preparatory shooting by the M-10s.

### COMPANY AND PLATOON

The X Tank Destroyer Battalion saw much action at Anzio, and most of it was by company or platoon. Its

\*With the Fifth Army, Italy.



weapons were used in every type of mission, even as field artillery, and they acquitted themselves well in every one of their assignments.

The diversion of a tank destroyer unit from its primary rôle might not generally be regarded as sound practice, but at Anzio, the M-10s did a lot of useful work, and they were still on hand when the time came to knock out enemy armor.

In the breakout of Anzio, when the Fifth Army ripped the German lines asunder, the X Tank Destroyer Battalion chalked up the following total for two weeks of action: five tanks, three self-propelled guns, seven field pieces, two vehicles, forty-nine machine guns.

#### MODIFICATIONS

The M-10s were slightly modified for their stay in the front lines at the beachhead. Armor plate was welded over the radiators to protect them from mortar and shell fragments. Until this was done, a number of vehicles were temporarily put out of action by perforated radiators. The bogey wheels were also vulnerable to near misses. This situation was corrected by the liberal use of sandbags.

The resemblance between an M-10 and a tank injected the hazard of mistaken identity, particularly when operating with other than American troops. At Anzio, the turrets of the battalion's vehicles were painted and the supported units were informed of this distinctive marking.

#### THE ROAD NORTH—"CAT AND MOUSE" TACTICS

Following the German retreat north of Rome, the battalion operated in rugged, mountainous terrain, vastly different from the sweeping flatness of the Anzio beachhead.

Once again, the situation dictated a new type of employment for M-10s, namely, close support and assault gun missions.

The countryside in this section of Italy may be dear to the heart of a poet, but it is something less than that to a tank destroyer man. Here, mountains and hills are a patternless jumble, cut through by dirt roads which are only a series of tortuous bends. The only straight stretches are those necessary for bridge-crossings, and the routed Germans left none of those intact.

Vehicles, in such country, are thoroughly canalized. Enemy armor, although not constituting a threat from the standpoint of mass attack, played an annoying part as mobile, roving guns. Even more troublesome, however, were the German self-propelled guns which found the terrain well suited for harassing, hit-and-run tactics.

There was nothing to be gained in such terrain by keeping a tank destroyer battalion in reserve, or even by keeping it together. Consequently, the battalion was again divided.

Each company received a pioneer section and a platoon from the reconnaissance company.

The companies were usually committed by platoon,

or section, and, acting in close support of foot soldiers, were most often used against targets of opportunity.

It was something of a "cat-and-mouse" affair, with the M-10s stalking their prey. Thus, when a German self-propelled gun was located, or a similar target picked out, the M-10s would maneuver into position and open fire. Pioneer sections often had to make this possible by putting in by-passes around demolished bridges, or by hasty mine removal.

Subordinate units performed a variety of missions. Every type of target likely to be encountered on an infantry front was taken under fire.

The infantry, as had the British, expressed pleasure at the stimulating morale effect the presence of tank destroyers had on the forward troops. The Germans frequently counterattacked viciously after being forced to yield an objective. The sight of M-10s at the front, covering the reorganization of the infantry, or helping to repulse the enemy's counterthrusts, was a psychological factor as well as a physical one.

The battalion commander discouraged the return of M-10s from the front for refueling or routine servicing. Whenever possible, fuel and ammunition were brought forward—eliminating the wear and tear of a two-way trek on the M-10s. The unit's half-tracks performed this transport function in a most satisfactory manner.

#### OPERATIONS AS FIELD ARTILLERY

M-10s proved their worth in a field artillery rôle during the Italian campaign. In an operation near Mignano, the X Tank Destroyer Battalion functioned in this capacity. It was tied into a Fifth Army artillery brigade by registration. From then on, the battalion did some fancy shooting. The battalion 12-drop switchboard, and company 6-drop boards, were connected with the brigade fire control lines. Accurate maps of the area served as firing charts. The fire power of the brigade was augmented by the equivalent of three field artillery battalions.

The maximum normal range of the tank destroyer's three-inch gun has been extended, on occasion, by elevating the front of the vehicle, thus permitting an increased elevation of the tube.

Long range shooting against tanks was not recommended by the battalion, but there were times when it had to be done. There was one instance in which enemy tanks were shooting into Fifth Army infantry, and because of demolitions, the M-10s were unable to approach the battle closer than about 3,000 yards. Even at that distance, a German Mark VI tank was hit and destroyed, but the M-10 gunner admitted that providence must have guided the shot.

Despite the versatility of the M-10s, infantry commanders should not expect them to function as tanks. To be sure, the X Tank Destroyer Battalion has done so, and it was successful each time, but only because, as the battalion commander said, "We didn't run into anything."





Signal Corps Photo

Pile of No. 3 Teller mines. The igniter holes for booby trapping may be seen in the side and bottom of some of the mines. Carrying approximately 11 pounds of TNT, the Teller mine packs a real wallop.

# Achtung Minen!!!

by Lieutenant Colonel  
Stanley W. Dzinban, C.E.\*

**A**CHTUNG MINEN!!! In combat areas in Europe, you will occasionally find that in haste, Jerry has left his calling card. You will mentally thank his forgetfulness, carefully bypass the marked area, and go safely on your way.

More often leading troop elements will discover the presence of the insidious mine by detonating one and suffering personnel and matériel losses. Striking without the warning of the whistle of the bomb and shell or the chatter of the machine gun, the mine is doubly effective because when detonated, it represents a direct hit. The passage of the battle does not eliminate their danger, for they can remain behind to strike at following corps or army troops.

Unless troops overseas are fully prepared to cope with the problem it will be found that enemy mines can become not only a serious source of casualties but also a serious morale factor. No attempt will be made here to detail types of mines and ways of treating with them. No better guide than FM-31, *Land Mines and Booby Traps*, which thoroughly covers the subject, could be used as a basis for troop training in mine warfare.

\*Commander of a Combat Engineer Battalion in North Africa, Sicily and Italy—January, '43-April, '44.

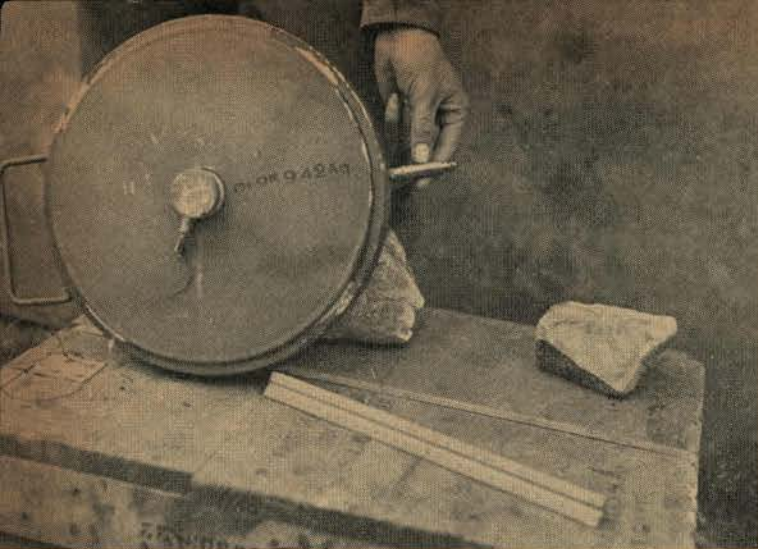
ALL troops entering the combat zone should have a thorough basic training in mine warfare. Mechanized cavalry and other reconnaissance units must be trained fully in mine location and clearing and in mine field laying.

There are here presented some particular considerations which need underlining, or which will not be found in manuals. These observations do not represent a comprehensive study of practice throughout Europe, but an accumulation of personal experience, observation, discussion, and study of German mine warfare in North Africa, Sicily, and Italy. The detailed techniques of German mine warfare may vary from place to place, but much of what follows can be of value to troops fighting the Germans anywhere.

## ON GUARD

Every soldier in the combat zone in Europe should maintain an *awareness* 24 hours a day of the possibility of mines. Once he is on guard against the possibility, he has the problem more than half licked, for it is not





Signal Corps Photo

Teller mine No. 1, with a highly machined fuse, has been largely replaced in turn by Nos. 2, 3, and 4, which use a very easily made fuse. This mine shows the center fuse with the arming pin in the armed position, and with a pull igniter (fired by a 10-15 pound pull) for booby trapping in one of two igniter holes. Foot rule denotes size.

difficult to locate and avoid mines. Again, the soldier should be kept always on his guard for antitank and antipersonnel mines, even in rear areas. The soldier who is on his toes will not step over a plainly marked barbed wire fence and trip a trip wire as has often been done. It is the careless soldier who becomes the casualty.

#### TYPES OF GERMAN MINE WARFARE

The German employs two general types of mine warfare.

The first is the use of deliberate, formal belts or fields of antitank and occasionally antipersonnel mines in front of well organized defensive positions, such as the beaches in Sicily and Italy, or as a few fields laid in Tunisia and Italy.

The other general type is the scattered, hastily sowed mines, without pattern or scheme other than to cause casualties. The numbers of these mines will depend on the time the enemy had available to lay them. The locations will be places most likely to be traversed by the advancing troops. It is this type of mine warfare which has cost so dearly.

As the German falls back, he buries his mines in pot-holes in road surfaces, in the shoulders, in turnout points, particularly at intersections, in bivouac areas (especially when desirable areas are scarce), in and around demolitions such as craters, blown bridges or culverts, along paths likely to be followed by troops such as those leading to wells, in natural avenues of approach such as draws or wooded areas, in defiles, on airfields, and in desirable artillery position areas. No pattern, rhyme, scheme, or density can be expected.

#### MINE LOCATION AND TREATMENT

Suspect the presence of mines in any of the places mentioned above. The great bulk of mines can be found easily, even visually by someone looking for them. The German may carelessly discard empty mine

boxes. These are a dead give away. Trip wires, holes in the road, disturbed earth, barbed-wire fences, earth depressions caused by settling of disturbed earth after rain—all of these are cause for suspicion of mines.

Piles of stones, or other strange objects or markings on the road or building may be signs left by the German engineers to warn his own rear guard people of the presence of mines. Not infrequently Jerry has in haste or forgetfully left in place signs which served to warn his own troops, ACHTUNG MINEN, MINEN, or ACHTUNG.

To clear large areas of mines, the electrical mine detector, properly adjusted and tested is best. Particularly because of mines like the nonmetallic antitank *Holzmine* or antipersonnel *Schumine*, which contain a minimum of metal, the detector must be adjusted and tested minutely. It must be used carefully to give effective, 100% coverage of the ground, and less reliance must be placed on location by change in tone of the resonator and more on observation of the visual indicator needle.

In using the bayonet or probe of any kind, the minimum amount of force should be used to prevent detonating antipersonnel or sensitized antitank mines. The probability of detonating sensitive mines like the *Schumine* in probing can be reduced by using the probe at angles greater than 45° from the vertical rather than near the vertical.

If it is necessary for an individual to cross an area not under assault conditions, but known to be mined, this can be done quite easily by advancing slowly, checking the small areas into which each foot will be planted by lightly passing the fingertips over the ground to detect the mine, igniter, or disturbed earth, at the same time looking for trip wires. If possible walk on pavement, on rocks or rocky ground moving from boulder to boulder, on walls, or on any other ground or objects in which mines could not be placed. Do not blaze new trails, but if possible habitually follow paths or trails that have been well used by other troops.

A soldier of an engineer battalion removes the detonator of a Teller mine No. 4 (Mushroom type) that was found on the beach at Nettuno, Italy. This mine is normally antitank, requiring approximately 350-pound pressure, but is readily booby trapped and may become sensitized by the blast effect of near-by explosions of other mines, shells, etc.

Signal Corps Photo





If it becomes necessary to clear or disarm mines, this should be done by competent personnel. As a general rule, whenever possible, mines should be pulled from place by a 50 yard rope rather than endangering personnel by disarming and lifting the mines. Antitank mines which have been subject to blast from bombing or shelling may be sensitized so that pressures which detonate antipersonal mines may also detonate them.

#### FRIENDLY MINE FIELDS

Experience with friendly mine fields, as at Anzio, has not been completely satisfactory. Mines would no doubt be used in any retrograde movement, but there is not full agreement among field commanders concerning their use in static defensive situations such as at Anzio. Unless carefully planned and coordinated, such mine fields may complicate the taking of the offensive. Casualties can be frequent among patrols and other personnel who must move through these mine fields. Careless personnel, lack of information as to mine locations because of the data failing to get to lower echelons or because of frequent changes of the unit holding a sector containing mines, warning barbed-wire fences cut by shell fire—causes such as these can result in numerous casualties.

If the decision has been made to lay mine fields, they must be accurately recorded and the information promptly disseminated to all who need it, particularly the individual soldiers in those sectors. In laying the mine fields, competent personnel should be used and frequently checks made to see that the proper tests, particularly of American igniters, are made to avoid accidents while laying mines.

Indiscriminate placing of unrecorded mines or booby traps by individuals cannot be permitted. Barbed wire marking fences should be stout, and should be at sufficient distance so that exploding mines do not cut the wire. Parties should check the repair of the fences regularly. All personnel should know the standard mine field markers used by friendly troops as well as those used by the Germans in any sector.

#### GENERAL COMMENTS

It is my belief that the factor which will most reduce mine casualties among trained American soldiers is *to ingrain thoroughly in him a constant awareness of the possibility of mines and to keep him always on guard for them, even in rear areas.*

Treat with care the areas near barbed-wire or other fences.

Sandbags on the floors of vehicles will reduce casualties. Men should not be permitted to ride on truck fenders or running boards. Serious casualties have occurred from these practices.

When in or near mine fields, men should be kept dispersed. If an S-mine, or "bouncing Betty," should be set off, the individual will usually be aware of it by hearing a pop! He can then probably escape injury by



Signal Corps Photo  
Men of an engineer unit sweep the streets of Lessay, France, in a hunt for mines. Well-organized parties and careful laying out of lanes insure thorough, complete clearing of an area. To prevent unnecessary casualties, clearing parties should be kept as small and as dispersed as possible. Group pictured above is too congested.

taking the prone position in the few seconds before it explodes, at the same time warning those in the vicinity by calling "S-mine." The fragments are distributed mainly horizontally.

When a man is injured in a mine field, others should be restrained from their first tendency to rush to his aid. One or two men going to the injured man's aid should take steps to avoid detonating other mines.

If livestock is loose in the vicinity of mine fields, they should be avoided, for fragments from some types of mines detonated by the livestock can travel with casualty-producing effect up to 100 yards.

Dangerous weapon though it may be, the mine, like other weapons, can be made relatively ineffective by the proper countermeasures. One of the best countermeasures is properly trained and indoctrinated, alert personnel.



# FROM JEEPS TO

**T**ERRAIN and weather still dominate battlefields, and arms must be balanced for the terrain in which battles are fought.

Topography plays a leading part in successful battle plans. The two extremes of topography in this global war were the sandy North African desert and the fantastically jumbled mountain and jungle terrain of Burma. The North African desert was ideal terrain for armored units. Burma is typical terrain for animal units.

General Marshall summarizes the clues to success in his all-inclusive statement to me of April 6, 1944. Said he, "The essential clue to success in modern warfare is a balanced force of *all arms*, with the necessary teamwork between its component elements, plus a strong leader who has a sound knowledge of the mechanism of war; that is, fire power, movement and the logistics of supply."

"Burma was lost," said General Sir Harold Alexander (Allied commander in Italy), "because mechanization was sent where animal transport should have been used. The last thing you want in Burma is a mechanized army. There were only two main roads in all of Burma on which a mechanized army could be used. The Japanese used coolies for transport."

## UP THE TRAIL TO THE PEAKS

After the last war it was predicted that the next war would start in the air, but, like all wars, would end in the mud. How true this has proven!

Trucks and jeeps wind up and around the mountain roads with death-dealing cargoes of copper-ringed shells and life-sustaining food. The trucks stop at lower levels, the jeeps continue to climb, chugging hopefully to make the grade, and then—a quiver or two, and the engines come to a stop. This is the "mule-head." The jeeps have reached the end of their trail. The packers take over; cargoes are sorted for gun and for man; loads balanced and quickly rope-hitched for the steeper climb up and "beyond the jeep trail."

It has rained for weeks. The mule climb begins. Whipped into action by the packers, with every ounce of brawn at work, the mules streak out in column, slipping as they grope for steady footing, until the trail becomes too steep even for mules. Mountain-climbing foot soldiers, with pack boards strapped to their backs take the load each man can carry and claw, clamber, and even hew their way to the fighters manning the peaks.

We enthuse over the thought that a plane can fly over mountain and jungle in one-half hour that would require fourteen days by mule pack. This is as it should be, especially for transport planes, but cross-country terrain over which they fly is not battlefield terrain.

In the same half-hour, pack artillery has rounded the roadless mountain and banged its shells on the target. Later, pack trains with sure-footed mules are "silently" but quickly wending their way in the blackness of the night across bomb-crater fields to succor the fighting foot soldiers who have reached the ramparts across the valley; to replenish munitions and medical dressings and sulfas and plasma for the men who hold the vital height.

Communications must be established and quickly—wire must be laid. Signal reel packs go out. The mules, hustling along by the most direct route through thicket and woods, string wire as they go. Engineer mules, with loads for demolition, amble past bulldozers readying for the "action roads" of the battlefield—the vital roads for wheel supply.

## ANIMALS IN WAR

Much has been written about the modern machines of war—and rightly so, but man has not yet made the machine that can replace the foot soldier or the pack mule. And with equal force it may be added, the pack artilleryman and the American cavalryman. The foot soldier, the pack mule, the pack artilleryman and the American horse cavalryman with his machine guns and mortars in pack, are the trail blazers who work their way through the inaccessible places and come out with unbeatable combat teams—task forces supreme.

Germany boasts today of the feats of heroism in the present war of her mountain troops in the Polish battle of Lemberg, and in the far north at Narvik, Norway,

A British Eighth Army patrol unloads pack mules in Castel St. Vincenzo. The mules are extremely small.





# PACKS

by

Colonel

Albert E. Phillips

(Cavalry), Retired

Pack troop of the 45th Division unloads 81mm mortar shells near Venafrò, Italy. The Italian mule is poor, weak.



to which point pack artillery was transported by plane to successfully clinch the decision. Hitler pronounced this feat a "military miracle." But this was no miracle. Italian mechanization failed in winter warfare in the mountains of Greece, but Greek pack artillery plowed through the snow, and thus caused Mussolini to yell for Hitler.

When the going got tough in Tunisia; when food, ammunition, and water were needed by troops in positions where trucks could not reach them; when fog enshrouded planes and jeeps spun in the mud; when stalled tanks needed gasoline, oil and spare parts, over routes that wheeled vehicles could not travel, pack animals were brought into action. A War Department release stated: "The terrain in parts of Tunisia was so rugged, so wild, that even jeeps could not navigate the hills."

The truth is, we know a lot about machines and good highways, but not enough about mountains, narrow



Italian "donkeys" carry mortars and ammunition over a rocky ridge near Venafrò during a training problem.

passes, absence of roads and marshy ground that block and stop tanks. Rain, swollen rivers, zero cold, snow, flood, and mud retard and stop motorized vehicles. Mud alone plays havoc with machines. Some years ago there was a sign on a country road in Canada, which warned: "Select your rut well because you will be in it for the next forty miles."

## SICILY

Sicily was the great testing ground. The fastest moving campaign was in Sicily. The record there must stand for all time. The Seventh Army under Lt. General George S. Patton was one of the world's most modern motorized fighting machines, and it was inconceivable at the time that a motorized army would have need for mules. It was a whirlwind campaign that rolled triumphantly along until battle was joined in rugged terrain. And then the call for the sons of the wild jackass—the mule! Packs for 155 ammunition and for food, where even jeeps could not travel! Packs for 75 howitzers, and packs for engineer, signal and medical units!

The great war machine that had moved so rapidly; that had cut Sicily into parts, came to a halt at Randazzo, temporarily stymied by a staggered series of natural barriers of rugged mountains, precipitous ridges, gutted hills and many rivers. The time had come for battle. The Germans were fighting a "retirement" action, and they were fighting stubbornly as is the wont in defense. Because of the steepness of the heights, many armored vehicles had to be left at the base of roads. Many motorized guns could not be emplaced at sites desired.

Reports may differ of the fighting in this sector or that sector, but for the tough, central sector, the Associated Press report of August 10, 1943 said: "American forces fighting toward Randazzo, northwest of Mt.



Etna, smashed the center of the German line, in mule pack, mountain warfare."

Major General Lucien K. Truscott, of the cavalry, who commanded the famed 3d Infantry Division of the Seventh Army, lost no time in hastily organizing improvised pack artillery, pack supply units, and reconnaissance cavalry for his division. Said he: "I am firmly convinced that if one squadron of horse cavalry and one pack troop of 200 mules had been available to me at San Stefano on August 1st, they would have enabled me to cut off and capture the *entire* German force opposing me along the north coast road and would have permitted my entry in Messina at least 48 hours earlier."

Major General M. S. Eddy, of the infantry, who commanded the now famous 9th Infantry Division of the Seventh Army, said: "Infantry can advance only so far without receiving its daily supplies of water, ammunition and food. Because practically all the bridges had been blown, motor vehicles could not be used until Engineers had constructed long and difficult by-passes, pack mules had to be employed. A conglomeration of pack equipment was finally collected that was neither adequate nor efficient. A stock of American pack equipment, including special pack saddles for the six

loads of 75mm howitzers and for the heavy weapons of the infantry should be provided."

The campaign in Sicily must remain as a classic example of the need for both motors and animals. We would not want to change that record, even if we could. It is the "aggregate" value of motors and animals that counts.

#### ITALY

The campaign in the North African desert was a gasoline race with no place for the "hay-burning" mule. Said Rommel's Quartermaster when captured by General Bernard Montgomery of the British Eighth Army: "The war in the desert was a tactician's paradise but a hell for quartermasters."

The war in the mountains of Italy was destined to be a hell for all. It could not be a war of armored vehicles running hither and yon. It was a topsy-turvy paradise, toppled over by the wrath of the gods and man—hell on earth of fire and fury, flood and mud—a restricted terrain of high mountains and steep-banked, often flooded rivers heading for the sea across the line of advance—a purgatory for tacticians, with the logistics of supply literally knocked sky high. The mountains of Italy were natural animal terrain. Animals move faster in difficult terrain; they move with less noise, leave the roads when necessary, disperse quickly and are particularly valuable for night movements. Horses, mules and foot soldiers provide the means for penetrating wooded areas and mountain fastnesses.

A division commander said, "We had superiority in air power and in fire power, with the exception of pack artillery, but we had 'blind spots.' We lacked definite, detailed information of the ground; we lacked the 'war tool of cavalry.'"

An outstanding general of artillery said, "The Apennines of Italy just shout for pack artillery." And another said, "You'll take a load off my mind, if you'll put those jeep loads on mules when we land in Italy." The need for mules reached its climax in Italy.

Estimates of division commanders ran from three hundred to five hundred pack mules for each infantry division. But these estimates were probably based on the poor and weak little Italian mules.

When, after months of stagnation, the break-through was finally made at Cassino *Life* magazine reported, "The French, with less mechanized equipment, moved up faster than we did." The tactical move through Castelfort, made by the French, threatened envelopment of Cassino. The actual taking of Cassino was by British and Polish troops. The French were liberally supplied with pack transportation.

In wars of movement in mountains, jungles, and mud, the army can no more successfully fight its battles without packs than without doughboys. The pack mule can go wherever a man can go without the use of his hands. In his realm, the pack mule is supreme, for no wheeled vehicle can follow him.

## Quartermaster to Buy 2,000 Mules for Supply Transport in Mountainous Areas

AUGUST 14, 1944.—The Quartermaster Corps is purchasing approximately 2,000 mules for the use of the armed forces.

The mules, of the type most suitable for use as pack animals, are of somewhat smaller stature than those required for draft purposes. They usually weigh from 1,000 to 1,150 pounds, and are capable of carrying loads weighing from 200 to 250 pounds.

They will be procured mainly through the Remount Areas Headquarters at Lexington, Kentucky, and San Angelo, Texas, which serve Kentucky, Missouri, Indiana, Illinois, Iowa, Minnesota, Arkansas, Oklahoma, Texas and other chief mule-producing states.

Far from being outmoded by mobile warfare, the mule is proving more valuable than ever to the Army for supply transportation over rough terrain such as has been encountered in Sicily, Italy and Burma.

In addition to his sure-footedness on mountain trails, the mule is seldom disturbed by the noises of battle when working under combat conditions. Once his reluctance to boarding an air transport or landing craft is overcome, he usually stands quietly and gives little trouble while being transported.

—War Department, Press Branch.



# General Hawkins' Notes

## Would Cavalry Have Been Useful in the War in Western Europe?

SO FAR, the present campaign in Western Europe can be divided into four phases.

*First: The landing on the beaches*

Obviously, only dismounted cavalry could have been useful there.

*Second: The operations in Normandy after the beachheads had been cleared and before the breakthrough at Avranches and St. Lo.*

Certainly cavalry in small numbers could have been useful in the hedgerow country on the Cherbourg Peninsula. The operations ending in the capture of Cherbourg could have been faster. But the task of supply was still difficult, and large forces of cavalry concentrated behind the lines with the beaches at their backs would have been subjected to harassing artillery fire, to say the least.

*Third: The breakthrough and subsequent operations up to the liberation of Paris.*

After the capture of Cherbourg, cavalry in large numbers could have been landed by improvised means at Cherbourg or even on the beaches. When not under hostile fire, cavalry horses have been landed on beaches before this, and without the wonderful apparatus now available. Horses can be lowered into barges, run ashore and dumped out much as soldiers were.

Let us suppose that a cavalry corps had been landed about a week before July 25th when the big Allied offensive began. That would have been about 6 weeks after the first beachhead landing on the coast of Normandy. It could have been kept in readiness behind the lines without molestation or harassment of any kind.

When the breakthrough occurred and armored forces dashed forward on beautiful highways with scarcely any opposition from the enemy, the cavalry could have followed on various highways and byways, moving across country and off those highways that were needed for the supply trains following the armored divisions.

So long as there was comparatively little organized opposition, the advancing armored units did not need the close support of cavalry or other troops. Had the enemy been able to offer serious resistance with artillery and various antitank weapons, the pace would have been considerably slowed. The cavalry would have overtaken the far-flung armor, and, as has often happened on the Russian front, tank-cavalry teams, moving across country could have speedily outflanked the resistance.

Of course, there was no such check. The German army in France has displayed a surprising and totally unexpected lack of leadership. Some day the whole story may be told. At present it can only be surmised.

It may be noticed that in northern France all roads

lead to Paris, so to speak. Paris is like the hub of a wheel lying flat on the ground with spokes of the wheel leading out horizontally in all directions.

Using the vicinity of Caen as a pivot, the Germans swung their army northward. Obviously, the greater part of the German armor and antitank troops had been massed near Caen in front of the British and Canadians. These antitank measures had repulsed the heavy British armored attacks. The Germans counterattacked with their own armor and it was repulsed by British antitank weapons. When antitank weapons were available on either side the opposing armored attack was stopped. This fact was manifested again on August 7th when the Germans massed four armored divisions to attack the American First Army from Mortain, not far from Avranches. The Germans hoped to split the Allied line in two by using this attack. But it was stopped by antitank guns, artillery, and a unit of the RAF, using the new rocket bombs. Many German tanks on the highways, were caught and destroyed.

Meanwhile, U. S. armored units, pushing toward Paris, met no such opposition, either from antitank weapons or from the Luftwaffe. Therefore, they proceeded with great rapidity. When it became important for Patton's armored units, west of Paris, to turn north in order to enclose the German Seventh Army, partially trapped by the British, Canadians and some American troops moving slowly against bitter opposition near the town of Falaise, the armored forces then had to move across the main highways instead of on them. A great chance to destroy nearly the whole of the German Seventh Army seemed to present itself. But, moving against antitank opposition and across country, the tanks were slowed down.

An American cavalry corps armed with carbines, tommy guns, grenades, pistols, machine guns, antitank weapons, mobile light artillery and light tanks, would have been able to have interposed itself behind the fleeing enemy and stopped them completely, as has been demonstrated many times by the Russians. The cavalry would have been joined soon afterwards by armored units and the German Seventh Army would have been bottled as completely as the Sixth Army was at Stalingrad. Although the Seventh Army was eventually crushed, important elements of it did escape.

*Fourth: The advance of the Allied armies north and east of Paris.*

Allied elements have now crossed the border and moved into Germany at a number of places.

In this speedy advance, a cavalry corps at times would have been a little behind, but not so much as to have



been unable to cooperate soon after serious resistance might have been encountered. The cavalry corps could easily have moved 300 miles in 15 days. This would have carried it from the Seine River to Brussels or to Metz and beyond. The cavalry would certainly have been available when the need for it came.

#### Conclusion:

If the enemy offers no further serious resistance with adequate artillery and antitank units, there may be no important use for cavalry. If he does offer this resistance, however, then the usefulness of large cavalry forces—if we had them there—could be demonstrated.

The exploits of the famous Russian tank-cavalry teams in 1943, and the present campaign in Poland and Romania, cannot be discounted. The Russians certainly moved fast enough to suit anyone. Their cavalry had no trouble keeping up with their tanks—and this on ground particularly adopted to tank warfare. The country of western Europe is especially favorable for cavalry. Its hills, rolling country, woods, rivers and creeks combine with its open meadows and farm lands to make a country in which cavalry is very desirable.

Like Russian cavalry, U. S. cavalry, in combination with tanks, could spearhead every important turning

movement, speed up advances by rapid reconnaissance, guard the flanks of the infantry, which remains the great mobile basic arm, form links between armies, and, by-passing small fortified towns, move well out in front and operate around the flanks of enemy antitank units which might hold up the armor. In short, U. S. cavalry could operate both with and without tanks.

The rapid advances which have been made in France without the use of cavalry are liable to cause the American people to forget how cavalry could have been usefully employed in Tunisia and especially in Italy where the painfully slow advance was bitter and could have been much accelerated by the use of cavalry.

It is obvious that the Allies are winning the war. No one knows, however, how much time and how many lives might have been saved had there been a proper balance of all arms in the American and British armies as there is in the Russian. Germany is not yet conquered. The war with Japan has barely begun. How many places still lie ahead of our armies where cavalry would not only be useful but necessary? Will the Nazis go underground? Does anyone know in what remote region or rugged terrain it eventually may be necessary to fight the last of the Axis culprits? Will cavalry not be sorely needed in the Philippines? In Burma? China?



—By Rodd, *Sunday Dispatch* (London), July 16, 1944.

"Old-fashioned stuff—we used horses years ago!"



# Report On Operations In Northern France

*June 6—August 25*

GENERAL Dwight D. Eisenhower, Supreme Commander, Allied Expeditionary Forces, has made the following report on the results of operations in Northern France between D Day, June 6, 1944, and August 25, 1944:

The equivalent of five Panzer divisions have been destroyed and a further six severely mauled, including one Panzer Grenadier division. The equivalent of 20 infantry divisions have been eliminated and a further 12 very badly cut up and have suffered severe losses. Included in this total of infantry divisions are three of the enemy's crack parachute divisions. In addition, one parachute division and two infantry divisions have no hope of escape from the fortress ports of the Brittany Peninsula in which they are marooned. One infantry division is isolated in the channel islands.

Total enemy casualties amount to over 400,000 killed, wounded and prisoners of war, of which over 200,000 are prisoners of war. Of these prisoners, 135,000 have been captured since July 25. The total continues to mount.

One thousand three hundred enemy tanks and over 20,000 motor transports have been captured or destroyed. About 500 assault guns and 1,500 field and heavier artillery guns have been captured or destroyed. In addition, the enemy has suffered very heavy losses in coast artillery equipment.

The German Seventh Army and the newly formed Fifth Panzer Army have been decisively defeated and into this defeat have been drawn the bulk of the fighting strength of the First and Fifteenth Armies. Three field marshals and one army commander have either been dismissed or incapacitated by wounds. One army commander, three corps commanders, 15 divisional commanders and one fortress commander have been either killed or captured.

In the air, the Luftwaffe has taken a fearful beating. Since June 6, 2,378 German aircraft have been destroyed in the air and 1,167 on the ground. In addition, 270 aircraft were probably destroyed and 1,028 aircraft were damaged in the air.

At sea, the enemy has been unable, in spite of his former boasting, to interfere seriously with the invasion forces. Enemy attacks on convoys have been driven off on very many occasions and losses to Allied shipping have been small. Of the enemy's naval losses, some 300 vessels of all classes have been sunk or heavily damaged by Allied action. In addition, a number of enemy merchant ships have been sunk and the Germans themselves have been forced to scuttle, in their harbors, large numbers of all types of shipping, both naval and mercantile.

A large proportion of the enemy's effort has been devoted to attack by mine laying. The sustained work of minesweepers has resulted, within three months in a "Mine-Bag" off the French beaches which totals one-tenth of all mines swept in five years in all theaters of war.

Allied teamwork, extending through all services, has again demonstrated its ability to overcome the most adverse kind of conditions in defeating the enemy. Allied units from other countries have fought effectively alongside American and British forces and the FFI (French Fighting Forces of the Interior) have done much valuable work.

The Command System has functioned smoothly in spite of difficulties caused by enforced separation of commanders and of poor signal communications owing to distances and the rapidly changing situation.

Many factors are woven into the warp and woof of this great victory. Among these a few are listed below, with no attempt to give their order of importance.

One was meticulous care in planning and preparation, supported resolutely in all important aspects by the Combined Chiefs of Staff.

Another was the fact that we achieved some degree of surprise involving place, timing and strength of the attack. The excellence and sufficiency of amphibious equipment, with measures for dealing with beach defenses and obstacles, was also important.

The brilliant preparatory work of the Air Forces, a belief in the effectiveness of which was the very cornerstone of the original invasion conception, began months ago and reached its highest intensity at the very moment of landing. It is my conviction that except for this aerial preparation, including as a specific mission a prolonged campaign against the transportation systems of northwest Europe, the venture could not have logically been undertaken. The air support of ground forces has been most effective throughout the campaign. The supply and maintenance services have performed miracles.

But the greatest factor of all has been the fighting qualities of the soldiers, sailors and airmen of the United Nations. Their valor, stamina and devotion to duty have been beyond praise. They will continue to be.



# Editorial Comment

## Von Schlieffen In Reverse

When the German Baron Alfred von Schlieffen conceived his famous plan for the conquest of France, he little dreamed that it would be executed in reverse over practically the same terrain for which he drew his maps.

The "von Schlieffen plan," upon which the Kaiser based his strategy in 1914, called for a break-through at Sedan that would draw the French armies north of Paris. Then, using Sedan as a pivot or hinge, the German right wing was to swing in a wide arc through Holland, Belgium and sweep into France west and south of Paris.

Although von Schlieffen's dying exhortation was to "make the right wing strong," the Kaiser's armies avoided Holland and swung in a reduced arc through Belgium. Then, while the offensive momentum of the right wing petered out, the bulk of the German armies was drawn eastward and north of Paris. The Kaiser's army failed to reach the coast of France, and the French capitol was never encircled.

In 1940 Hitler's army avoided the mistakes of 1914. While breaking through the Maginot Line at Sedan, a strong right wing swung through Holland and Belgium, and after sweeping the Allied armies into the sea at Dunkerque, encircled the helpless French armies in the north, and on June 22—just 34 days after the invasion of the Lowlands—forced the surrender of France.

In 1944, the Allied armies under General Eisenhower, using Caen instead of Sedan as a pivot, applied approximately the same strategic plan over approximately the same terrain to liberate France, Belgium and Holland, encircle much of the German army, and drive the survivors beyond the borders of the Reich.

While the British drew the Nazi armor to the vicinity of Caen, a strong American right wing broke out of the Normandy Peninsula, drove south across Brittany, and advanced on a wide swinging arc to the east and north. It is doubtful if original plans called for the encirclement of Paris, but the maneuver developed so rapidly that the situation undoubtedly warranted an extension of the drive. On August 25—29 days after the break-through from St. Lo, the city of Paris was liberated and American, British, Canadian, French, Belgian, and Dutch troops were encircling and annihilating Nazis over the wide arc of von Schlieffen's map.

## Hitler—the Mad Strategist

Much of Hitler's military bungling was originally overlooked in the spectacular results of his early campaigns. The corruption of governments, the unpreparedness of armies, the bewilderment of suddenly en-

slaved peoples—all contributed to obscuring the truth masked behind the self-expounded legend of his genius.

Hitler's gravest strategic errors are now evident. His failure to invade England in 1940, his gross miscalculation of Russia's military strength in 1941, his insistence on a suicidal stand at Stalingrad in 1942 at the expense of reinforcements for Rommel in North Africa—have all been discussed and generally recognized. In future appraisals of the war, it is likely that his biggest mistake, and at the same time, most fanatical decision was made in 1943 when he sacrificed the *Luftwaffe* and diverted critical materials, manpower and time to the making of the *Vergeltungswaffe* (Vengeance Weapon), officially termed the V-1 and now commonly known as the robot bomb or robomb.

The introduction of a weapon of war directed primarily against a civilian population is quite compatible with the diabolical mind that introduced and fostered concentration camps, modernized sound-proof torture chambers, extermination vans, and scientific murder factories. The "Vengeance Weapon" is fully in keeping with the fanatical character of modern history's ace madman.

In the use of the V-1 against English civilians, however, Hitler's preconceived ideas of public reaction were as much in error as they had so often been in the past. His objective appears to have been to demoralize the British home front to such an extent that the people would demand an end of the war and a negotiated peace—but the British outlasted the robots.

In August Brigadier General Horace S. Sewell wrote, "The German stand in Normandy appears to be directed by other than purely military considerations. It seems probable that Hitler is prepared to sacrifice his army in Normandy to gain time for the continuance of his aerial bombardment of London."

Later the British radio observed that Hitler's obsession for flying bombs had cost him 20 trained men for every person killed in England by the missiles, and had lost him France. The German Seventh Army in northern France was deprived of air protection; manpower and matériel were diverted for robot production, and great numbers of troops were held at launching areas when they might have been sent to aid the Seventh Army.

A captured German document, written by the commander of the 2d German Panzer Division for the enlightenment of a new commander taking over a sector of the Normandy front, contained the following statement: "The German air force is conspicuous by its absence. Only 6 German planes flew over our divisional area in 4 weeks."

In Stockholm an Austrian fugitive research worker



reported that between 250,000 and 500,000 persons were engaged in the manufacture of Germany's threatened V-2 rocket bomb, and claimed that many of the men working on the new rocket were former *Luftwaffe* members who have been grounded for lack of planes. Tens of thousands of German airmen have been switched to V-2 work, he said.

While Hitler's armies on every front struggled without air support, in England his robombs, taking a toll of less than one life per bomb landed, had little or no effect upon the Allied military situation. Many robombs were exploded before they reached British soil; others never reached the channel. The mayor of Rouen told a U.P. correspondent that at least three of every four robots launched in that area had been exploding on French soil. "Twenty-six landed on one 40-acre farm a few miles from the coast, and this is typical," he said.

It has been reported that there were over 2,000 launching bases in northern France—22 sites in Rouen alone, and an average of one every three miles between that city and Le Havre. Meanwhile, U. S. and British planes, in close support of Allied ground armies, have pounded the Nazi lines, demolished their communications, and seriously hampered the Nazi retreat.

General von Paulus, commander of the German Sixth Army at Stalingrad, broadcast from Moscow, "According to happenings lately, a continuation of the war for Germany has been transferred into senseless bloodshed. The superiority of the enemy in the air and on the sea is so overwhelming that the situation for Germany has become hopelessly disastrous. For Germany the war is lost!"

Now that Hitler has "liquidated" many of his generals and taken direct command of the Battle of Germany, as he did the Battle of Stalingrad, the end of the war undoubtedly draws nearer. In the words of General Montgomery, "It means that the enemy is commanded by a lunatic."

### The Basic and Complimentary Elements of a Single "Armed Force"

Earth, water and air—three of the four basic elements—are the mediums in which all life, as we know it, has being and exists. They are also the three mediums in which warfare is waged. The fourth element, fire, transmitted into fire power, is the basic means of waging war.

Until man developed navigation there was only one element in which he lived and consequently fought. He lived upon the earth and his fighting, therefore, was a simple matter of land warfare, perhaps best exemplified by the campaigns of Ghenghis Khan.

As man gradually conquered the seas, he at the same time developed a fighting means of controlling the sea lanes—and naval warfare grew from the early battles between slave-manned galleons to engagements between massed fleets, such as the Battle of Jutland.

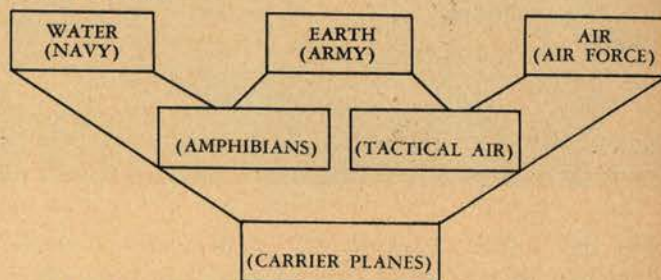
From these two elements of warfare, only one combination of elements was possible. With earth and water covering the surface of the earth and no medium of war overlapping or combining the two, man's life existed on a two-dimensional plane and the only possible contact between land and naval warfare was at the shore.

Ships were often used for transporting armies, and many examples exist of naval bombardments of coastal cities. A classic example of tactical coordination between land and sea forces is found in the Battle of Yorktown when Cornwallis, opposed by Washington on the south and west, suddenly found the French fleet steaming up the Chesapeake at his back.

The need, however, for a combat unit that combined the attributes of both land and sea forces had already introduced a new fighting body—the Marines, "soldiers of the sea," who became highly proficient in what has since become known as amphibious warfare.

As man conquered the air, a third element was added to his fighting mediums. Warfare became three-dimensional with one element reaching over both of the other two. Additional combinations of warfare became possible. These new mediums are so distinct from the basic elements which produced them as to make them additional elements. The combination of earth and water produces mud; earth and air make dust; and air and water, steam. As soon as any two positive elements are combined, a third distinct element is created.

Combined land-sea arms has produced *Amphibious* warfare; land-air coordination has created the *Tactical Air Force*; and air-sea power has demanded *Carrier Based Planes*.



Not three but six mediums of war now exist. In the contemplation of a single "Armed Force," careful consideration and study should be given not only to the three basic elements but equally to the complimentary elements and the manner of interlocking relationship. As certain types of Army and Naval actions are predominantly ground or sea warfare respectively, any air vs. air action is predominantly aerial warfare.

As this war has indicated, however, few major battles will be waged in the future without the various combinations of elements present. To secure absolute coordination, expert understanding of each complimentary element is essential, and direct contact must exist between the two basic elements concerned. It is upon these premises that the foundation of unity of command should be built.



## Foreword by Brigadier General H. S. Hawkins

THE first of this series of articles by Colonel Marshall on the capture of some 26 islands of the Kwajalein Atoll in the Marshalls was published in *The Infantry Journal* in its August issue, and described the fight on Kwajalein of Company B, 184th Infantry.

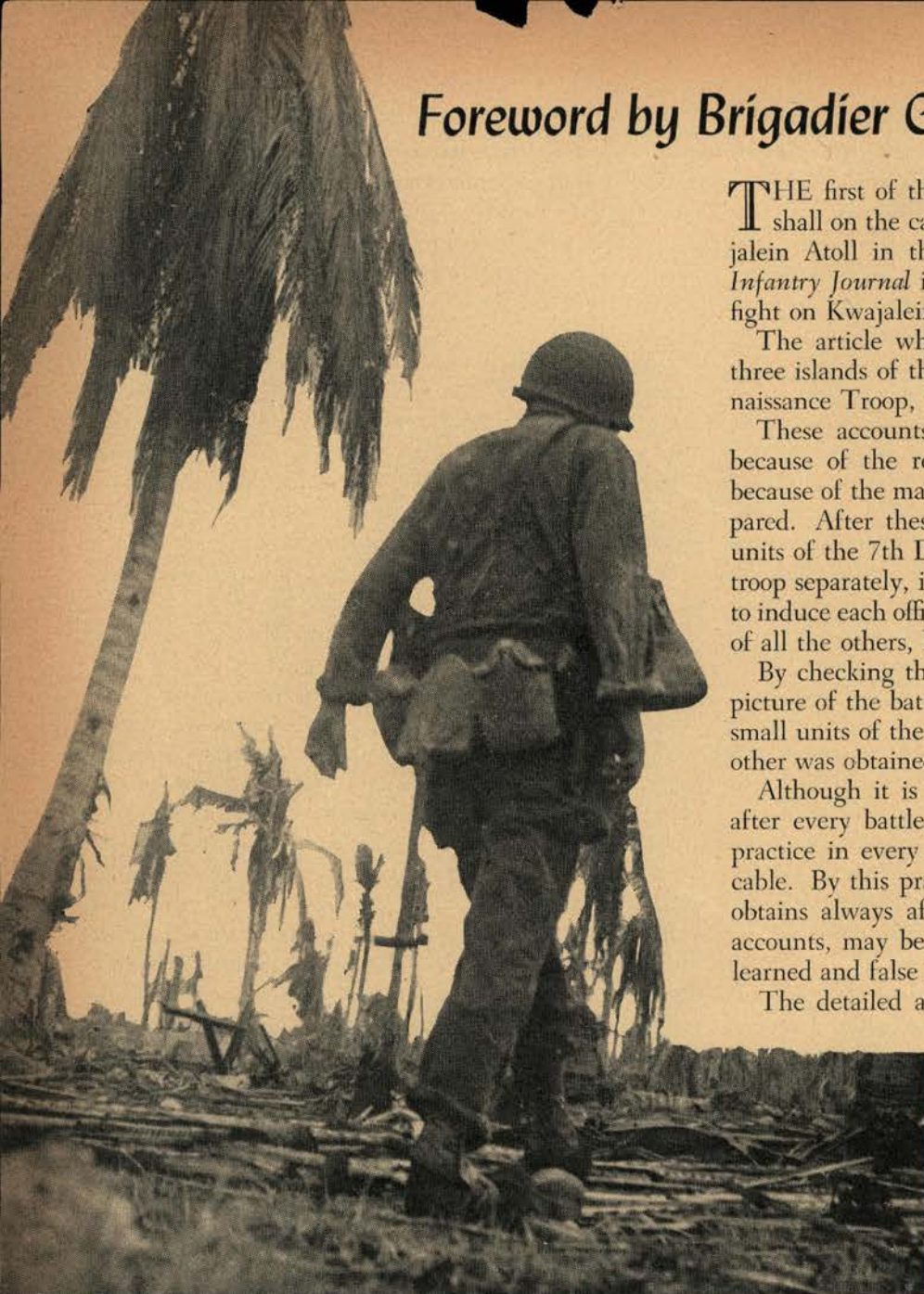
The article which follows describes the assault on three islands of the Kwajalein Atoll by the 7th Reconnaissance Troop, January 31 to February 5, 1944.

These accounts are extremely interesting not only because of the related incidents themselves but also because of the manner in which the accounts were prepared. After these actions, it became the practice in units of the 7th Division to assemble each company or troop separately, if it had taken part in the action, and to induce each officer and soldier to give, in the presence of all the others, his personal account of the battle.

By checking those accounts with each other, a true picture of the battle and the actions of individuals and small units of the troop or company in relation to each other was obtained in a remarkable manner.

Although it is not possible to hold such a critique after every battle, the method is certainly worthy of practice in every troop or company when it is practicable. By this practice, the historical confusion which obtains always after every battle, with its conflicting accounts, may be cleared away. True lessons may be learned and false lessons eliminated.

The detailed accounts, thus learned, of the experi-



# Cavalry

IN the operation, which netted the capture of 26 islands in the lower half of the Kwajalein Atoll during January 31-February 5, 1944, the initial landings were designed to provide a stepping stone to sure victory.

### SITUATION AND PLAN OF ATTACK

The citadel of the general area was Kwajalein proper, at the southern corner of the atoll. Situated thereon was the great preponderance of the enemy strength in men and weapons. With relation to it, the other 25 islands, eleven of which were occupied by Japanese forces, were like a chain of outposts, with varying strength and character.

Under the plan of the 7th Division the first island to be taken was Enubuj Island, 5,000 yards distant from

Kwajalein up the western side of the atoll. Next on the list was Ennylobegan Island above Enubuj. The 17th Infantry was assigned to these two islands, and both were in our hands a few hours after the initial assaults were made.

Above Ennylobegan is Gea Pass which provides a deep-water channel to the lagoon. This pass has a rather narrow entrance protected by two islands, and the 7th Reconnaissance Troop was assigned the mission of capturing them. The plan of the division required that both islands be taken on D Day.

It was in the effort to secure these two small islands covering Gea Pass that the cast at first missed and then brought in a haul much more startling than the one which had been expected. Air reconnaissance had indicated that these islands were very lightly held, if at all. But the air bombardment which had distracted this part of the atoll for a number of days preceding the

\*Released by Army Historical Section and published concurrently in other Service Journals.



ences of these individual units in the Marshall Islands are very interesting, although it is difficult to pick out many general principles for future application. In each case the situation was peculiar to attacks upon small islands or atolls where the defenders cannot withdraw from action if defeated, but must either hold out to death or surrender. The operations in attacking an atoll or very small island reduce themselves therefore to mopping up and action similar to street fighting.

The experiences of Company B, 184th Infantry, brought out several interesting factors:

After the naval guns and air forces had finished their preliminary fire, and the artillery had added to the bombardment, the terrain on the island of Kwajalein had been reduced to a jumble of shell holes, demolished houses, rubble piles, destroyed trenches, broken concrete walls, felled palm trees—all in confusion and without any discernible organization or order for defense. The infantry's mission, therefore, was to move in small units—platoons, squads and half-squads—with rifles, machine guns, pistols, tommy guns, grenades and other forms of explosives, to mop up the scattered groups of Japs hidden in every rubble heap or pile of debris.

The bypassed rubble heap proved so dangerous that the battalion commander resorted to burning all these heaps in rear of their advance platoons. This was effective but caused so much smoke that the men could not see and the tanks suffered especially from this. It would appear that platoons should be deployed in rear of the advance platoons to take care of every rubble pile or unobserved trench that had been bypassed by the

advance platoons. In other words, depth of deployment appears to be as necessary in this type of action as it is in the ordinary formations for attack on large islands or continental areas of operations.

Much initiative and courage is necessary in the leaders of small groups in an operation of this type—but the same thing is true in modern battles of all kinds. Grenades and other high explosive weapons were necessary in large quantities to blast the Japs out of their shelters and hidden places, but it is remarkable also how much rifle fire was used at close range to kill charging and unyielding Japs. In this close quarter fighting, there was little or no use of bayonets.

The conquest of Gea, Chance, and Ninni Islands by the 7th Reconnaissance Troop illustrates the following points of particular interest:

The landing boats, misdirected in the darkness, landed on an island other than the one intended.

The Japs were unable to defend their positions against an attack coming through the thick brush. The cover given by the brush enabled the reconnaissance troops to get so close to the Jap's defenses that grenades could be hurled over the parapet onto the Japs behind their breastworks. These grenades did the work without much loss to the cavalymen. The Japs do not seem to understand the necessity of clearing a field of fire in front of defensive positions.

The method of advancing through brush by individual bounds kept the battle line going forward without that loss of the forward impulse which is so difficult to overcome when the men cannot see each other.

# y in Dismounted Action\*

*by Lieutenant Colonel S. L. A. Marshall*

invasion had unintentionally altered the distribution of some of the enemy detachments. A number of small ships—some outward bound on military missions, others carrying parties of Japanese fishing for sport—were strafed and stranded along the western reefs by our aviation. The marooned Japs were still camping out on the smaller islands and waiting for rescue when, in the heavy pre-dawn darkness of January 31, the first small boats of the troop were lowered and the men climbed down the landing nets to begin the operation.

## LANDINGS

The 7th Reconnaissance Troop was divided equally; each half was to make the assault on one of the islands on either side of Gea Pass. Accompanying each group was half of an infantry company destined for garrison service.

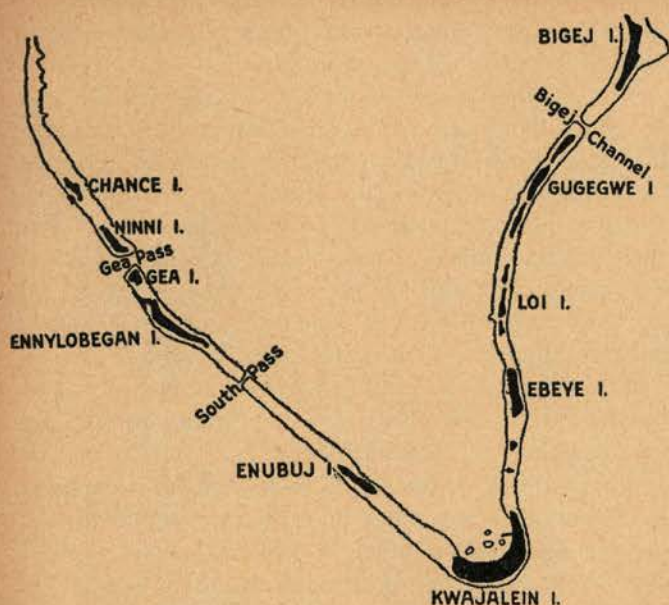
When the cavalry loaded in their rubber boats and started toward the reefs, not even the outline of the channel islands could be seen. The night was as thick as ink and a light misting rain was falling. The only

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## 7th Cavalry Reconnaissance Troop Takes Three Islands of the Kwajalein Atoll in the Marshalls

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Kwajalein Atoll. Islands at upper left were taken by 7th Reconnaissance Troop between 31 January and 5 February.

light to be seen anywhere was the distant glare from the burning dumps on Kwajalein Island.

The hour was 0410. The sea was unusually choppy and there seemed to be a squall rising. The 1st and 3d Platoons, under command of Lieutenant Emmett L. Tiner, entered rubber boats and headed into the wind toward Gea Island on the south side.

The 2d Platoon and Headquarters Platoon of the troop, under command of Captain Paul B. Gritta, also in rubber boats, began to move toward the unseen reef and shore in the other direction. They had been ordered to take Ninni Island on the north side of the pass.

The infantry, which was to support the cavalry initially, went ashore in LCPs and gave the rubber boats a tow to within 800 yards of the islands.

Despite the off-shore wind and a vicious undercurrent, it was still deep night when Gritta's boats completed the journey. At a distance of about 150 yards they saw for the first time the vague outline of the land mass. Twenty yards from the shore the first rubber boats bumped the reef and the men then waded in through three feet of water to what they thought was Ninni Island. By 0545 Gritta's first arrivals had organized a defensive position and put out directional lights to guide the rest of the party. It was not until much later that Captain Gritta and his men learned that they had landed by mistake on what came to be known as Chance Island.\*

#### TINER'S GROUP TAKE GEA ISLAND

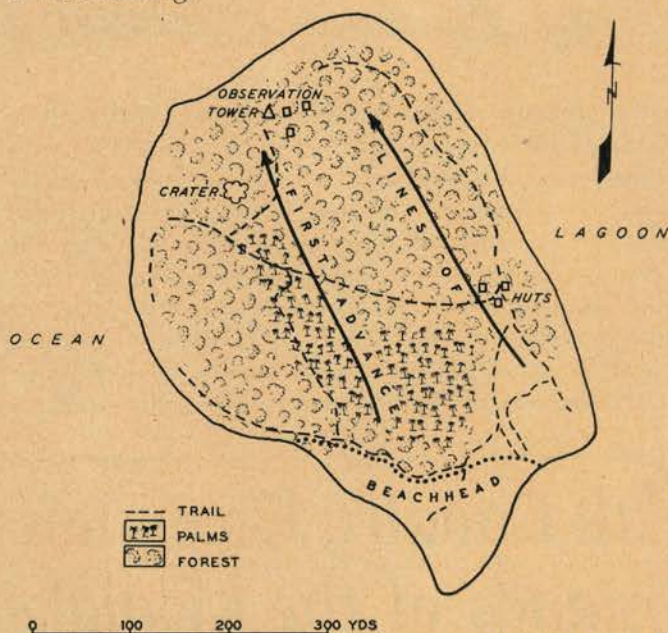
About half an hour later Tiner and his group landed on Gea Island. The dawn was just then breaking, and in the thin light the men could see enough of the detail of the shore to identify their position.

\*An earlier report of this action which appeared in the March-April issue of THE CAVALRY JOURNAL referred to this island as Gehk.

While the supplies were being unloaded and the infantry forces were still wading in through three to four feet of water to take over the defensive position on the beachhead, a reconnaissance patrol, which had been put out at once by Tiner, returned and reported that the huts on the southeast corner of the island were unoccupied though the island trails showed signs of recent use. The cavalry platoons were then ordered to move out as planned; one infantry platoon was to follow and protect the flank and rear.

The advance was impeded by the vegetation. The island was extremely heavy in underbrush, with few coconut palms, so that the skirmish line, extending almost completely across the island, had to kick its way through bushes, vines and creepers. The gap between the end of the line and the shoreline made the first sweep futile. The left flank, without knowing it, passed within fifteen yards of the position where the small force of the enemy was lodged, but the Japs held their fire and the flank passed on toward the far end of the island without discovering them.

On ahead ten yards or so, three scouts, Corporal Philip N. Riccio, Private William Toomey, and Private Virden Johnson, entered an area containing three small shacks and an observation tower. These were as indicated on the maps which the three men carried. Toomey walked first to the largest of the three shacks. Passing around to the far side of the building, he found he could look inside through a part-glass door. A Jap was lying in the center of the room on a bamboo matting; his body was covered by a blanket and he was lying on his stomach with his face turned in the other direction. Toomey noted there were other blankets on the floor as if a number of Japs had made a sudden getaway. Toomey motioned to the others to come up. He did not feel excited but he looked at his hand and noticed it was shaking.



Gea Island, southernmost of group taken by 7th Rcn. Tr.





Firing an antitank gun (37mm), American troops of the 7th Infantry Division blast some Japs out of a pillbox on Kwajalein, Jan. 31, 1944. Details of small individual actions, such as this, make valued contribution to combat lessons.

The men prowled the shack. They found that the Jap had been suffering from a wound in the small of his back which had been crudely bandaged. By the bedside a radio was going full blast. Adjoining the room was a small porch and next to it a storeroom containing tins of beef and tangerines, a few cans of beer, and a large sake bottle. Johnson put this prize to his lips and the others looked on. They saw him swallow hard and then spit. The Japs had filled the bottle with fish oil.

The remainder of the platoon came up without drawing any fire or seeing any sign of a live enemy. But what had been found within the shack, particularly the blankets and the distance separating the wounded Jap from the live radio, convinced Lieutenant Claude J. Hornbacher that there was a Jap force somewhere on the island and that by some fluke his skirmishers had missed them. He decided to reverse direction and beat back, sidestepping the line so that it would spread over the strip of ground which had been missed in the first sweep. Riccio, Johnson, and Private Frank Holguin were sent ahead; they started through the brush to the right, twenty yards ahead of the platoon. Even at that distance they were out of sight. The three men went fifty yards, Riccio leading. He held up his hand quite suddenly and whispered: "Watch it!" The others saw him throw a grenade. Then he went down with a bullet through his brain. The scout, Holguin, crawled

on a litter. Coming up to Riccio's body, he looked beyond it just in time to see three Japs crawl from a bomb crater and disappear.

Hornbacher crawled on up to his scouts. Holguin told him what he had seen. The platoon was ordered forward and Hornbacher crawled on to Johnson, who had taken a more advanced position. Johnson thought he saw something move in a tree. He took a bead on the spot and whispered to Hornbacher: "Shall I fire?" Hornbacher said: "Let 'em have it!" The first bullet exploded a Jap out of the palm tops and he lay on the ground and kicked.

Still there was no return fire. Sergeants Leonard C. Brink and R. M. Martinson advanced their sections, still believing that there had been but three enemy in the vicinity. Brink, leading the way with a tommy gun, saw two Japs fading back through the brush, and mowed them down. He reached their bodies and figured that that liquidated the opposition on the island. But he wanted to be sure, so he took up a position behind a tree with a two-pronged trunk and ordered the machine guns forward. Though he saw no enemy, he ordered one gun to fire just to make sure it was operational. It jammed immediately. The other gun was brought up to the tree and Brink lifted it into position in the fork about two and one-half feet above the ground. As the gun was settled, a heavy volley of small-arms fire broke around Brink and the three men



who were working with him. Brink sighted the gun the way he wanted it, according to the direction of the fire coming at them, fired a few rounds, and then told Private Claude Fair to hold it there.

Working around the tree and to the leftward, Brink crawled on to seek the enemy position in detail. He saw a Jap aiming a rifle at him from twenty-five feet range; Brink emptied his carbine into him. There was another round of fire from forward, and with it the question in Brink's mind became answered. For he looked now and saw the Japs, ten yards away. They were crouched in a large bomb crater about thirty yards to the front and left of his own machine-gun position. He yelled back to Fair and told him what he had seen and how to correct his fire. At the gun, Fair readjusted, with Private First Class John F. Rysavy helping him. In eight minutes they fired two and one-half belts, spraying bullets across the top of the crater so that the Japs could not get their heads up.

Meanwhile, Brink crawled back for grenades and then crawled up again. Private C. W. Anderson stood behind the tree with the other two, his M1 pointed so that he could cover Brink.

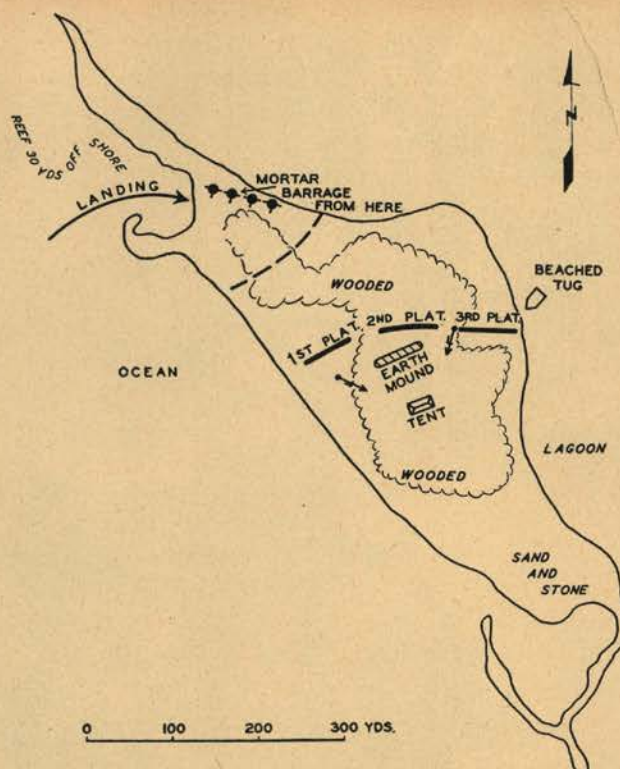
A Jap crawled over the lip of the crater. Anderson yelled: "He's mine." Brink answered: "No, he's mine," and let him have it with the tommy gun. Then he yelled to Anderson: "Get that son-of-a-bitch crawling off on your own flank." Anderson got him. The three men continued firing from the partial cover of the tree. Fire from the crater bit into the bark and kicked up the sand at their feet. Brink kept yelling: "Come on out and fight, you bastards, you bastards, you." The Japs replied with sticks of explosives thrown as grenades, to the accompaniment of a steady, high-pitched screaming. The bombs blew out harmlessly among the palms.

Brink threw his first grenade. It dropped fair into the crater and was followed swiftly by three distinct explosions; it may have been hari-kari or the grenade might have set off the charges held by the enemy. With the machine gun continuing to put a curtain of fire above the crater against which the Japs dared not raise their heads, Brink threw grenade after grenade. By the time that his hands were emptied, the crater had become silent. The platoon then moved up.

There were nineteen dead Japs in the crater; at least ten had been done to death by Brink's grenades.

While Brink was fighting, the men in the center of the platoon had been crawling forward. As the action ended they were almost up to him. The 1st and 3d Platoons had moved their flanks up until they swung around the crater in a semicircle, but because of the jeopardy involved in this position as well as because of the undergrowth they had held their fire.

The action had actually been fought out by four men. One sergeant, pushing the fight and making a bold decision at every turn, had almost single-handedly liquidated the Gea Island opposition. Private Lawrence



Chance Island, northernmost of group taken by troop.

E. Whalen had been hit in the head while setting up the first machine gun. He was the only casualty outside of Riccio.

After the Jap bodies were examined to make sure that all were dead, the skirmish line moved on through the brush. Brink and his group ran into three more Japs on the beach. He called on them to surrender. Two ran and he shot them down. The third gave up. At 1000 Gea Island was turned over to the infantry garrison.

#### GRITTA'S MEN ON "CHANCE" ISLAND

On the other island, where Gritta and his men landed, all forces were ashore by the hour when the light became full. The infantry then took up a defensive position, and the cavalrymen began their sweep toward the southeastward. In an isolated encounter with six Japs, four were killed and two captured. Then Fate began to take a leading hand in the proceedings.

The flank next the lagoon shore halted as it came to a beached ocean-going tug more than halfway down the island. The wreckage on the deck indicated that the ship had been smashed during the air attack. On the bow of the tug was an unattended 40mm gun which looked to be in good working order. A beached landing barge lay inshore from the tug and around the barge a dozen or so Jap bodies rose and fell with the shallow water. There were a few other dead in the sands, the victims of strafing.

At first nothing stirred aboard the vessel. Then a Jap ran out on deck and ducked back in again, ran out and ducked in again. Our men wanted to take him



prisoner. An interpreter yelled to him to come out. "Dete Koil!" "Kusan sel!" A machine gun was trained on the tug as persuader. But all of this availed nothing. The Jap remained under cover. Our men kept the gun trained on the tug. They did not go aboard.

While this was happening the skirmish line farther inland had experienced slight misadventure. One of the scouts had found a hut well hidden in the undergrowth. He worked up to it, and three men from the mortar section came along behind him. There were rifle shots from the hut and a mortar man fell. Our men crawled onto the hut and grenaded it. But the enemy had fled. In the excitement attending this small incident, the mortar, some mortar ammunition, and the rifle of the wounded man were dropped. They remained there.

#### CAPTAIN GRITTA MOVES TO NINNI ISLAND

It was at about this time that Division Headquarters informed Captain Gritta by radio that he had captured the wrong island. For that, blame the darkness! It was a simple case of having picked up the wrong bit of land along an unknown coast. Gritta's force had come to "Chance," the next island north of the target. The Command was still most concerned that both sides to Gea Pass should be in our hands by sundown. Gritta was told to get his men over to Ninni Island at once.

Then one of the "dead" along the beach came to life. He was badly wounded, but was conscious, and he had lain among the corpses feigning death. The man did not rouse easily but Gritta put a few questions to him through an interpreter. "How many men on the tug?" He at first said "fifty," but then pointed toward Ninni Island and kept on pointing that way. At the same time he motioned toward the rifle in Gritta's hands. Gritta took this to mean that there were fifty riflemen on Ninni Island, but concluded that Chance Island was unoccupied. Before quitting it, however, he ordered an infantry section to the southeast corner of the island and told the sergeant to keep a machine gun trained on it.

At 1000 the men got back into their rubber boats and started for Ninni. By 1430 the search and capture of the island were complete; no enemy had been found. At 1600 the infantry company on Chance Island reported that the beached tug was swarming with Japs and that others were ashore on the lower part of the island. One of the men was dead and one had been reported missing. The entire 7th Reconnaissance Troop was ordered to reembark for Chance Island. But as no boats were available, they passed the night where they were. The men were without food and water, and Gritta told them to shoot coconuts from the palm trees.

#### SECOND CAPTURE OF CHANCE ISLAND

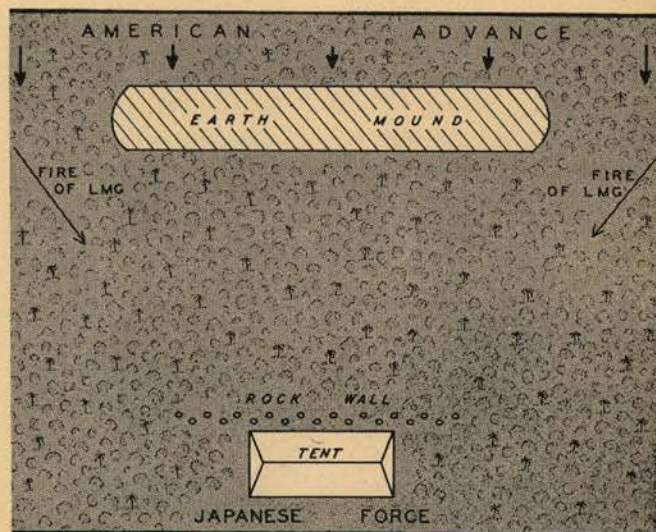
The attack of the islands at the Pass had fulfilled its purpose. There remained the task of whipping the

Japs on Chance Island. In the middle of the second day the infantry force was moved from Chance Island to Ninni. The troop landed. Several barges got caught on the Chance Island reef, so one squad from the troop was put ashore to take over. They sent back word that an enemy group with two machine guns was in position not far away. They could hear the guns fire. The American flag which Gritta had run up on a tall palm the day before had been challenged by the banner of the rising sun which the Japs had nailed to a taller palm. Another Jap flag floated over the tug.

Lieutenant Glenn Carr and one platoon went ashore at 2000, and after confirming the reports about the enemy position, set up a defensive position for the night and awaited the arrival of the troop. It landed at 0800 on the third morning on the north end of the island. Then the troop moved out—three platoons abreast with Headquarters Platoon in the center rear. This formation covered about three-fourths the width of the island along the route of advance. There were 115 present.

The scouts worked out ten to fifteen yards in front of the skirmish line. Yet for all that, the movement was steady and cautious. The troop had already found its own unique solution to one of the main problems of advancing a line through underbrush country. When skirmishers advance erect under such conditions, the shock of sudden and unexpected fire will usually flatten them in an instant. When that happens, all tactical unity is lost for the time being. The men cannot see one another and before they can again become a force moving forward, there must be much searching and finding. In this way much time is lost and the initial momentum is gradually dissipated. With every halt, even though there is little danger, it becomes more difficult to rally the line.

This was what the troop did—the men made the approach bounding "like jack rabbits," taking four or five quick jumps at a time, then crouching on haunches,



Closeup of area behind the earth mound, Chance Island.



taking a look around, then bounding forward again. So doing, they kept in motion nearly all of the time and offered a minimum target to the enemy.

There were more palms on the island and somewhat less bush than on Gea. The morning was sunlit and the air bracing; the terrain was fairly level. The line moved along evenly for more than half the distance down the island. No fire came toward it. The men kept silent and moved straight on.

At the approximate center of the island the line drew in sight of a long mound of earth about five feet high and sloping at both ends. It looked at first as if it might be the enemy resistance center but the scouts moved around it on the flanks and sent word to Gritta that it was undefended. There was a pause at the mound as scouts and leaders conferred about the next move.

First Sergeant James Martin and Lieutenant James S. Mahoney went around the two ends of the mound to reconnoiter. Both met loose sniper fire. They figured there were about four snipers up ahead on either flank. Gritta then talked to his officers and it was decided to send a light machine gun around each end of the mound to clean up the snipers. Since the mound had not been used as a revetment by the Japanese, it was figured that possibly the enemy were using it for their sighting, intending to pour fire on it as the Americans rose up and over the mound.

Gritta, feeling that he was just about in contact with the Japs' main body, determined to turn the mound to his own account, and employ it as a protected base from which to maneuver the troop. With that idea in mind, he directed the light machine guns to complete the flank movement around the mound by pouring a concentrated fire into the heavy vegetation ahead so as to make the Japs keep their heads down. By these swift decisions, he nipped the enemy plan of battle in the bud. The automatic fire kept the Japanese from ever having a clear sighting of the American line as it moved around the clear ground adjacent to the mound.

As the guns broke into action, the assault line moved up, parted both ways around the earthwork, and joined flanks again on the far side. The support remained behind the mound and the supplies were brought up to the same ground.

The left flank had moved up to about even with the beached tug when fire—rifle and automatic—burst over the left center, pinning its riflemen to the ground. Though it came from forward, the crackle was directionless and the gun positions could not be seen. Accompanying the fire came a yell from the defenders. It was a yell neither of terror nor terrifying, but likened by those who heard it to the "squealing of pigs." The note is characteristic. The Japs are apparently trained to this yell believing that it will unnerve enemy troops. The effect is the exact opposite. Our men say that it

provides a comic relief from the tension of battle. In this instance their porcine racket gave their position away.

Because of the heavy foliage and the palms, the enemy fire engaged immediately only one small segment of the assault line embracing one machine gun and twenty rifles. The troopers could not see the force which was pinning them down. But they rolled or crawled into whatever tree or ground cover was at hand and then fired in the direction from which they had heard the squealing. The return fire cut the grass and trees around them and wounded a few of their number. Sergeant Brink was hit in the arm and the shot bounced his rifle five yards away. He was not quite through for the day. As he rolled over to get the rifle, another bullet drilled him through the buttocks. He wanted to keep on fighting but Tiner told him he was bleeding too badly.

Carr and Tiner crawled forward to locate the Jap position. They passed Corporal Clifford T. Fjetland just as Fjetland was clipped by a bullet. He continued to fire so as to cover them. Sergeant Ernest F. Fessenden, in charge of the machine gun, had observed a row of palm fronds in an unnatural position just above the ground. He trained the gun on what he saw. Unwittingly, instinctively, he had picked out the main position. As the fire cut through the fronds, there was again a terrible screaming as of pigs—though this time it sounded like pigs in a slaughter pen.

Carr and Tiner, pulling themselves along by knees and elbows, saw the target through the dense growth. They had crawled five yards beyond Fjetland. Another ten yards on they could see the vague outline of a low-lying and elongated tent, the sides of which were camouflaged with palm fronds. The tent, broadside to the troop, was draped above an earthwork with a wide trench of about three-foot depth with a parapet of loose-piled coral rock. Carr could see nothing moving within, such was the darkness under the dense palm growth, but he could almost feel the heat of the fire coming from behind the rocks. Tiner saw what he took to be a pile of Jap bodies. He heard Fessenden shouting: "Come back! Come back! They're still alive in there," he, too, having distinguished the outline of the tent meanwhile. Two more machine guns were brought up to position where their fire would bear on the tent. Still, the Jap fire did not slacken.

The left center became thinned by casualties. Private First Class Vonnie W. Gray, first-aid man, left the shelter of the mound and walked to the front line to dress the wound of a trooper hit in the arm. While he was at it, Sergeant Johnnie Bonavia was lifted bodily by a heavy explosion which left his right leg shattered and bleeding. Gray left the first man, then with his trench knife started hacking away at the branch of a palm, intending to use it as a splint for Bonavia's leg. Another heavy explosion shook the tree above him and knocked a frond down so that it fell beside Gray. He



picked it up and whittled it to his purpose. Not being able to leave Bonavia, Gray stayed on the spot and took care of the wounded as they crawled to him, until T/4 Leonard V. Echlund and Private First Class Lesmore G. Durgin came forward from the mound and carried Bonavia back. The sight of that first-aid man continuing his work and paying no attention to the enemy fire was an example of courage that stimulated and enriched every fighting man who saw it. The troop was to talk about it for days to come.

One trooper saw a Jap rise from the top of a palm above the tent position and heave something into our lines. Another trooper was hit by the flying steel. A third trooper fired and the Jap came tumbling out of the tree. He plummeted to earth within sight of our men and they looked him over later. He was wearing a United States Army mortar ammo apron. It explained the heavy explosions which had rocked the position even more than the Jap grenade fire. From the palm top the Jap had been heaving mortar shells into our lines—the shells lost the day before during the incident at the hut.

It was even closer than that on the left. A Jap with a sub-machine gun was firing erratically at our center. Our left could not see him but the center was countering by tossing hand grenades toward the fire. Every burst shook Lieutenant Mahoney and covered his men with grass and dirt. He was very annoyed about it—until he discovered that he and the Jap with the machine gun had taken cover on opposite sides of the same tree. The Jap was killed by fire from the flank, which relieved Mahoney's mind. Five other Japs were killed over on the left in an isolated action—two by the rifle of Sergeant Harold J. Swaldi. Sergeant Martinson, seeing no enemy in front of him, kept spraying the undergrowth from the center of the left flank. Sergeant Lowell E. Venneberg, who had already killed two Japs with his rifle, figured that Martinson's fire was ranging too high and stood up to tell him. He was clipped by a bullet. The troop's right was almost non-engaged. The rest of the close-up action revolved around the center.

At the base behind the mound all went well. Men and weapons were sent forward to the assault as needed. It was expected at first that the enemy would attempt a quick charge over the mound and men were posted to cover it. The attack never materialized, however, as the Japs had no chance to break from the tent position once the machine guns found them. Captain Gritta moved up to the line. A Jap rifleman hit Corporal J. B. Hill in his ammunition belt and deadead seven bullets, without damage to Hill. Gritta drew a bead on the Jap but before he could fire the Jap hit Gritta in the arm. Gritta shot the Jap dead and kept on fighting. T/5 Alfred Nixon was also hit in the ammunition belt and his own brass stopped the bullet from entering his body.

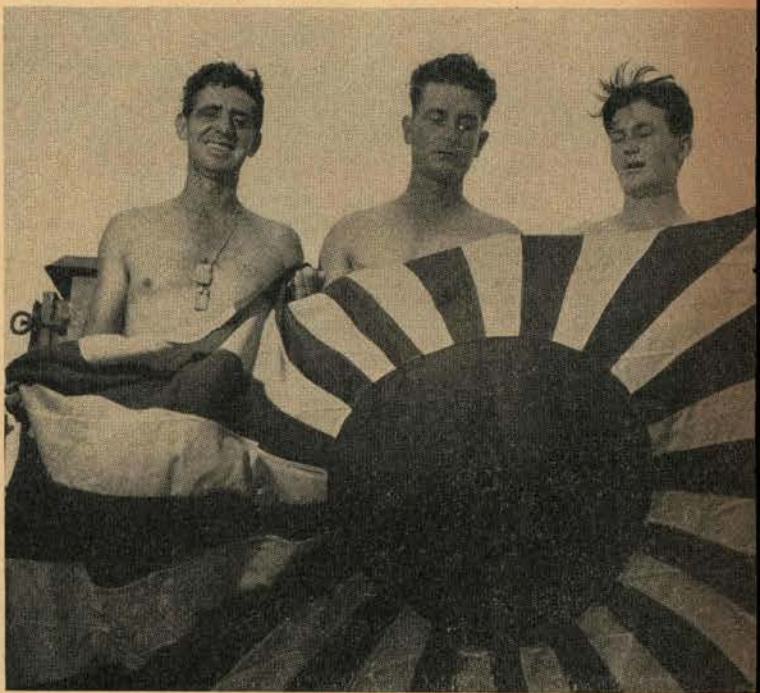
In the center the Jap fire slowed but did not stop. The parapet had grown higher. As the Japs manning

the weapons were cut down man by man, new hands came up to the guns and piled the bodies of the dead above the rock revetment. Thirty-nine bullet-riddled corpses were found piled lengthwise above the front of the trench when the fight was over. Fessenden's guns and the rifles supporting them could make little impression of this mass of flesh. They realized at last that they were wasting most of their fire power on dead men. So they turned to grenades. Thirteen men joined in the throwing, and all told, forty grenades were heaved into the tent.

That did it. The return fire grew feeble. Private First Class Emanuel Fried and Corporal Eugene C. Kruger moved up to a range of fifteen yards with a bazooka. They fired one rocket. Two Japs reeled out of the tent and walked forward, one carrying a pistol. One yelled: "Oh God damn!" loud enough so that the Americans heard him above the roar and rattle. Then both men fell under the machine-gun fire. Fried's second rocket exploded dead center inside the tent and stopped the show. There was no longer any return. But a third rocket was fired into it for good measure.

The entire action had lasted about forty-five minutes. The count showed sixty-five Japs killed in and around the tent position. There were fifty-five other enemy dead on the island, most of which had been killed in the air attack. The troop's casualties in the fight at the tent were fourteen wounded.

That night came a message from the Division Commander: "Well done, 7th Reconnaissance Troop." What had looked like a routine assignment had yielded a Donnybrook. The cavalry had killed its weight in Japs.



Men of 7th Reconnaissance Troop display Jap flag, which they replaced with the Stars and Stripes on Chance Island.



# WITH THE PHILIPP

*by Major Arthur K. Whitehead, Cavalry*

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*In previous installments published in The Cavalry Journal Major Whitehead has told of the activities of the 26th Cavalry (P.S.) during the Jap attack on the Philippines, the march north through Luzon and the battle in the Lingayen hills; then of his personal experiences after he was separated from the regiment and while thwarting Jap capture during two months of primitive existence from Luzon to Panay.*

*By the end of February, 1942, Major Whitehead reached Iloilo City, Iloilo Province, Panay and reported to the headquarters of the 63d Philippine Infantry Regiment of the 61st Division, with which he was to serve as regimental S-3.*

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THE 61st Philippine Army Infantry Division, with the mission of protecting the Island of Panay, comprised three rifle regiments plus special troops.

Panay Island is shaped like a triangle. From a north-south axis over to the west coast of the island there runs a deep, rugged, heavily wooded mountain range which almost throughout is inaccessible to anything except a man on foot. On the east side of the north-south axis the country consists largely of plains which become hilly in the northern part. The island is divided into three provinces. One takes in nearly the entire west coast; one the north; and one the east and south coasts. All of these provinces have their share of the mountain range.

At the beginning of the war an infantry regiment occupied each of these provinces. Two of these regiments did not have enough rifles to arm its men, and in the whole division there were probably no more than 30 machine guns and no mortars. The division was extremely limited on small-arms ammunition. Hand grenades were being manufactured in local foundries.

Artillery, mortars, machine guns, and rifles, plus ammunition and other necessary equipment scheduled for Panay had gone down in a ship sunk in Manila Bay in the first days of the war. Because of this serious lack of matériel and ammunition, the division commander had decided that it would be impossible to protect the island from actual invasion, but believed that, by falling back into the mountains when the Japs arrived, it would be practicable to carry on guerrilla op-

erations. If and when the Japs invaded the island, each of these regiments was to destroy everything that might be useful to the Jap army and then fight delaying action to the mountains, where the three regiments would try to hold.

By 1 March 1942, division, regimental, battalion, and company CP's were constituted in the mountains with 6 months' supply of rice, canned food, ammunition, and medicine. Bodegas or storehouses were built of logs, bamboo, and nipa to hold these supplies. They were hidden and the paths into them were camouflaged and guarded night and day. These supplies, which were to remain untouched until absolutely needed, were packed to the bodegas at night so that Jap planes, which were overhead most of the time, could not observe the activities.

Although a civilian home guard had been organized to patrol the coast line, it was also necessary for the army to have observation posts at critical points all around the island and a system of telephones for reporting back to regimental and division headquarters any information regarding sea activity off the Panay shores. This system of observation and communication required the services of most of the men of each regiment. The remainder spent their time from sunup to sundown improving defensive positions and road blocks to aid in the contemplated delaying action while withdrawing to the mountains. Everyone was more or less jittery. Bombing and strafing were daily occurrences. Regimental headquarters was awake day and night with reports from the coast patrols of Jap activity off shore. Although the Japs seldom tried to land, information indicated that they were making plans. It was recognized that when they did decide to land, they would land in force—as they had on Luzon—and there would be little chance of stopping them. There was not one piece of artillery on the island.

Anyone who left headquarters even temporarily did so with arms and equipment, and no one thought of going to sleep without his baggage ready to grab on awakening. Even under these conditions, however, much was being accomplished. Seven airfields were under construction—a few large enough for the B-17. A number of American engineers from the Masbate gold mines had been inducted into the army and with the help of civilian labor were in charge of this construction. A faint hope still existed that the States



# THE ARMY ON PANAY

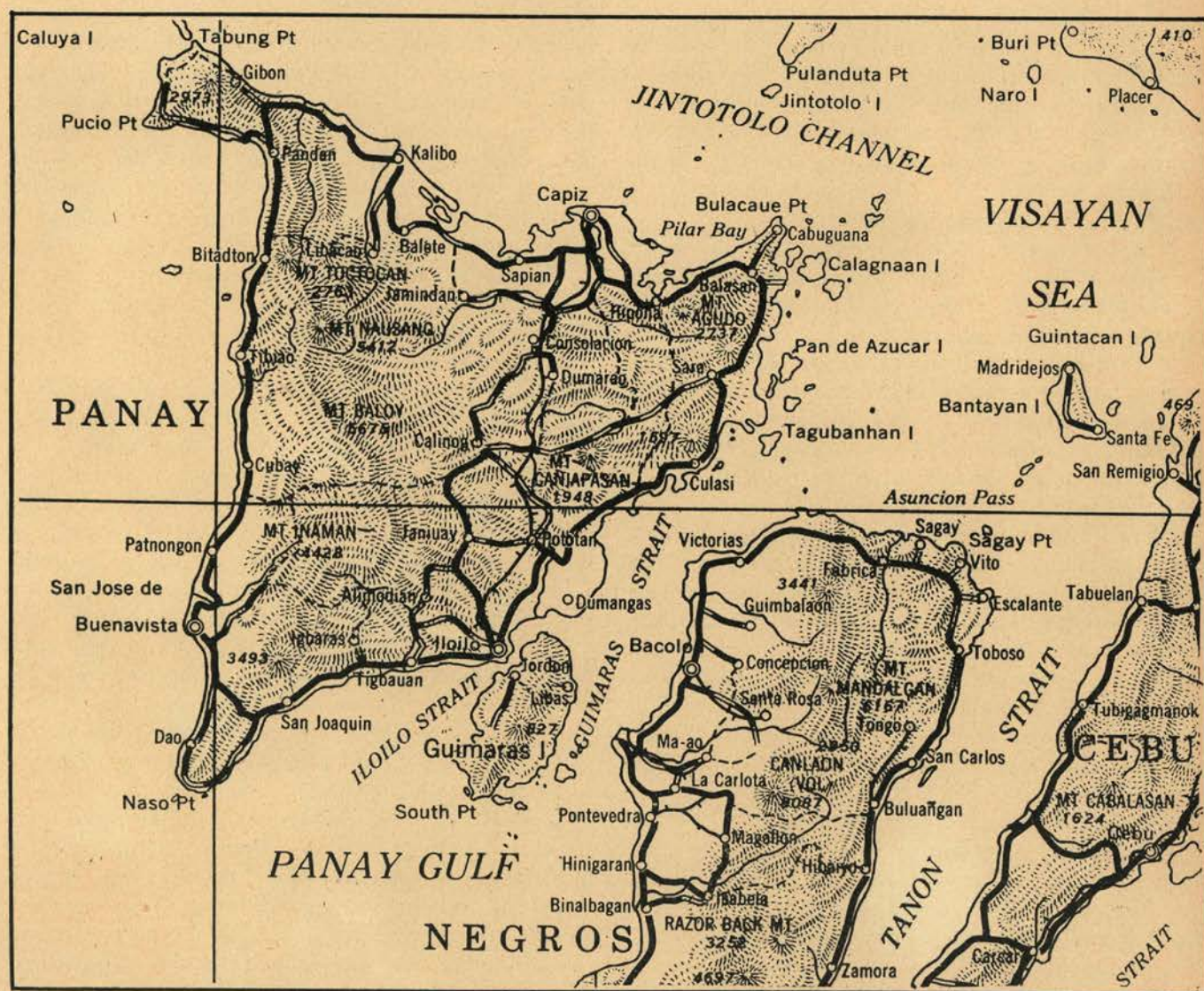
March — May 25, 1942

would get help to the islands before the Japs had completely taken everything.

Filipino civilians of service age were also being trained with the hope that there would be arms for them if reinforcements could get in from the States. It was later learned from the Japs that it was this activity—this businesslike and confident show of preparation—that kept them out of the Visayan Islands for so long—until they could spare a force that they thought large enough to invade the islands. That time did not come until after Bataan fell.

During the whole spring, while the Americans and Filipinos held those southern islands, their ports and air bases were used to push supplies into Bataan and Corregidor and to take out wounded.

One day I was told that some wounded had been brought down from Bataan and that among them were a few scouts out of the 26th Cavalry. I went to see them. They were a pathetic looking sight. Only men who had no chance of being useful for service again had been evacuated—those with limbs missing, sight gone, or minds affected from too much battle exposure.





There was one man from Troop A of the 26th, whom I had known well. He did not remember me, or what had happened to him during the past months, or how he had gotten where he was. He had a look in his eyes like that of a punished beast that had been badly hurt. Another scout of the 26th, from Machine Gun Troop, had lost a leg, but he did not seem to be at all bothered by it. He was in a fine state of mind. I asked him questions about the regiment and officers in it, but he knew very little that had happened outside his own troop. He said that there had not been time for him to do anything but take care of his gun, his horses, and himself from northern Luzon down to Bataan. Upon reaching Bataan he was wounded and taken to a hospital and after that saw no more of his troop.

By the middle of March the division commander issued orders for each regiment to form horse units, and I was given this detail in the 63d Regiment. Because the terrain was different in the area of each regiment, the division commander went into no further details in this order. Consequently, it was left to each regimental headquarters to form its own policy.

Most of the terrain of Iloilo Province, occupied by the 63d, was flat up to the foothills, but from there on it was so rugged that only a man or sure-footed horse could travel over it. In some places it was necessary to travel from 20 to 30 kilometers from the CP's in the mountains to the main roads or towns that the Japs were logically expected to occupy.

It was recognized that reconnaissance units would be necessary; units with a great deal of mobility would be needed for getting into a place quickly, hitting, and getting out quickly—and the more fire power a unit on such a mission carried, the better. Such units would have to be kept as mobile as a man on a horse. There would also be the need of some means for assisting the machine-gun companies to transport their guns through rugged terrain and possibly later for packing supplies over the foothills to the mountains.

The native Philippine pony averages 12 to 13 hands. He is usually short-coupled, heavy barrelled, and has endurance beyond belief with the feed that he gets. With a moderate amount of grass and a little rice bran, he can carry a 150-pound man over hilly terrain day after day. Few native ponies are gelded, and between the mare and the stallion it appeared that the stallion had much more endurance. The handicap with the stallion was that he would fight any other stallion and usually went crazy when a mare was around; however, it was decided in the 63d to use stallions.

Fortunately, there was a good Filipino veterinary with the regiment who prescribed feeding, stables, and care. Each day a nourishing grass called Sakate was trucked in and each pony given his fill of this three times a day. When *palay* (unhulled rice) is milled, a nourishing bran is thrown off that makes good horse feed. A double handful of this bran, with sugar or syrup, a teaspoonful of salt, and a tablespoonful

of coconut meal, mixed with enough water to make a firm mash, was fed night and morning. That was the horses' diet. On a march, each pony carried a sack of this mash mixture dry. Feedings were mixed with water and fed off the saddle blanket. At such times the pony foraged his own grass.

Stables were made of bamboo frame covered with nipa. Each stallion had to have a separate stall, and the stall had to be strong enough to keep it from being kicked down. It was often more satisfactory to fasten each pony to a tree by means of a permanent rope halter with tie rope attached. Ponies had to be kept well separated.

Ready-made shoes small enough for the native pony were bought and a blacksmith was located. Only the front feet were shod. In an emergency, it was possible to get a considerable amount of work done without shoeing at all, as most native ponies have never had on shoes and the feet hold up remarkably well. Comparatively little attention was paid to grooming; however, each man carried a small brush with which he went over his horse at least once a day when possible. Curb bits to fit the pony's mouth were available, and native leather workers were hired to complete the bridle. For saddles, native saddle makers were hired to make a one-piece wooden frame on the type of the McClellan saddle, except smaller to fit the pony's back, and this was covered with caraboa hide. Stirrups were made of wood, and for saddle blankets burlap sacks or anything better available were used.

The big problem was that of packs. There was no information available on the U. S. Cavalry Pack, and native packs proved unsatisfactory. With the help of a foundryman we undertook to make from memory a Phillips' pack to fit the native pony. With steel one-eighth inch by one-half inch a frame was made to duplicate as nearly as possible the form of the Phillips' pack. Inside of this a pad was screwed on each side. The pad, about twelve inches by fourteen inches, had a base of one-quarter inch leather. Kapok, a native cotton, was held in place by a canvas cover sewed like a quilt. The pad was three inches thick with the leather against the steel frame and the canvas toward the pony's back. This was the saddle. Two cinches, a breast strap, and a crupper completed the harness. The pad could be detached from the frame by releasing six screws. There was a small hole in the leather back through which it was possible to put in or take out kapok. The pack was rigged so that loads could be lashed on it.

Carriers which were hooked onto this pack were constructed for the purpose of carrying the water-cooled machine guns. Each gun-animal packed a gun, tripod, water can, and one box of ammunition. With this load the pony could walk for as long as a man could lead him. Another type carrier was constructed to carry three boxes of ammunition on each side.

The system established was that one man in the machine-gun squad led a pony carrying the gun and one



box of ammunition; another led a pony with six boxes of ammunition; and another led a pony carrying food. This arrangement caused a slight reorganization in the machine-gun squads but made them self-sustaining and able to march for two or three days at a time without replenishing.

The men and horses to be used for reconnaissance, message carrying, and for hitting quickly were trained as prescribed in U. S. cavalry manuals.

To increase the fire power of the rifle squads, additional carriers were constructed for led horses. These packed a Browning automatic rifle on the center of the saddle with four or six clips on each side, and after only slight training were as mobile as the mounted riflemen who led them.

Each cavalryman carried a rifle over his shoulder, a long bolo on his belt, and a blanket with rice and mess kit around his middle. A small sack of dry mash was carried on the cantle of the saddle.

When instructions were received to organize these units, an immediate effort had been made to secure suitable mounts. Since the army had taken most of the automobiles and had a monopoly on the alcohol which was used in place of gasoline, the civilian population was largely dependent on ponies for transportation. After eliminating those animals essential for civilian livelihood, there were only enough available on Panay to start one platoon of cavalry and a small group for packing. To get more ponies, it was necessary to go to the Island of Negros.

Toward the end of March a veterinary and myself crossed to Negros in a small launch. The trip had to be made at night to avoid Jap planes and warships, which at that time, were beginning to be seen regularly in Visayan waters. Landing in Bacolod, we spent the rest of the night in the quarters of some quartermaster officers, and the next day went inland to contact the commanding officer of the Negros forces. He had fewer troops and less arms and ammunition to protect Negros than we had on Panay. Many of his men were armed with .22 rifles, shotguns, and palteks (a native, home-made shotgun), and he had companies armed only with bolos. Like the Panay garrison, they had no artillery.

The plan for the Negros defense was much the same as that for Panay. When the Japs landed, the commander intended to fall back into the mountains and from there carry on guerrilla warfare. He felt that Negros would be invaded any day; already Jap warships had been shelling the eastern coast towns.

While on Negros I heard the story of the American-Filipino regiment which had fought and been defeated at Davao, Mindanao. What was left of the regiment had escaped into the hills north of Davao and from there had started to march through the jungles to join American forces still intact in the north of the island. Living on monkey meat and camotes (a native sweet potato), they marched for fifteen days before finally reaching friendly troops. They carried their wounded

with them, and I was told that enough of the regiment got through to operate as a unit against later Jap landings on the west coast of Mindanao.

The veterinary and I spent the next week in picking, buying, and trucking ponies to Bacolod, where they were shipped across to Panay. About then it was reported that the Japs had attempted landings on the Island of Cebu, but had been driven off. Daily, Jap warships could be seen in the channels between Negros, Cebu, and Panay. One evening, down near Dumaguete on the southeast coast of Negros Island, several explosions were heard, and a red glare appeared in the south. It was reported that one of our Q-boats had sunk a Jap destroyer.

On 9 April 1942, we landed back on the Island of Panay, and as we were leaving the boat, the captain called me aside and said in an apprehensive tone that he had heard by radio that Bataan had fallen that day.

By that time, the platoon of cavalry which had been organized in early March, was in fine condition. Personnel had been selected from infantry soldiers who had ridden and worked around horses for most of their lives. The principle need for both men and horses had been training in close and extended order mounted drill—and they had learned rapidly. With the arrival of the ponies from Negros two more platoons were formed and equipped and the pack units organized.

A few days later it was learned that Cebu had been invaded. Jap warships and transports had been reported off shore daily, and late in the afternoon of April 15 four transports were reported moving slowly off the southwestern tip of Panay. Some time before daylight of the 16th a few Jap patrols sneaked ashore in the vicinity of Otone, a small town ten or fifteen kilometers west of Iloilo City. They surprised the shore patrol, cut the telephone wires, and signaled the transports that all was clear, and with that the Jap landing force headed toward shore in small boats. (The details of these events were learned weeks later from a Filipino civilian who said that he had hidden near by and watched it all.)

The commander of the Philippine battalion garrisoned in Iloilo City was first notified of the landing at 0600 of the 16th. By that time a fairly large force of Japs had landed and were approaching the city. There was time, however, to blow up or set fire to installations that would be useful to the Japs, so throughout the day there was much skirmishing around the city and its vicinity. A flanking movement by the Japs from the west into the town of Jaro, two or three kilometers north of Iloilo City, nearly cut the battalion's route of withdrawal to the mountains, but after dark most of the soldiers were able to get out of the city and into the mountains. (This information reached regimental headquarters about two or three weeks after the action. Still later it was also learned that a simultaneous landing had occurred on the northern coast of Panay near the town of Capiz.)



At 0700 on the morning of the 16th the 63d Regimental Headquarters, about fifty kilometers north of Iloilo City, was notified of the landing. Explosions could be heard to the south, and from time to time Jap reconnaissance planes passed overhead.

We ate breakfast, dismantled camp, and before noon were on our way to the mountains. Travel was considerably slowed by the continuous attacks of Jap planes which dive-bombed and strafed the troops throughout the day.

By nightfall the cavalry was bivouacked in the mountains. The next morning a few of us rode back twelve kilometers to the stables to see if anything of value had been left. While there we burned the stables—it was hard to see them go down after the work we had put into building them. That afternoon we went to the town of Janiway which had not then been occupied. The soldiers, resting in their trenches which covered the road blocks both south and east of the town, appeared to be calm and in good spirits.

The next morning the Japs arrived, but they were not rushing headlong and taking losses as they had done on Luzon. Two scouts on bicycles first appeared, and as soon as they saw the road block they hit for cover. About an hour later mortar shells started landing around our positions. Unobserved, the Japs had cleverly sneaked up to high ground overlooking our positions and from there called for mortar fire. Our positions were not well camouflaged and our men kept moving, so that it was not difficult to locate us. Before long, mortar shells were landing in and around the trenches. While a rear guard held the road block until dark, the troops were prudently withdrawn to the hills in the rear.

The next day I rode north over the foothills to the Regimental CP and arrived there that night. No word had been received from the battalion in Iloilo City, and it was learned that the center battalion, withdrawing to the mountains, had become badly disorganized. On top of that, all of our luggage had been lost.

On April 20th I started back to the cavalry bivouac with orders to divide the units between the three rifle battalion commanders for their use in reconnaissance. As Jap columns had advanced over the foothills to the mountains, it was impossible to return by the original route, so the trip back required two days over steep mountain trails.

A company of infantry was also stationed around the cavalry bivouac area. Morale was not very high, as it was reported that a column of Japs, supported by artillery, was moving in our direction. Mounted patrols were sent out and those who returned reported Japs camped in several different areas not more than a few kilometers from our position. Some of the patrols failed to return. Throughout the night part of the infantry company dispersed; the next day the remainder pulled back into a better position.

At that time, another American and I started again to Regimental Headquarters. Four days later we arrived. The penetration of Jap cavalry and infantry into the mountains had forced us to make a considerable detour to dodge them. After losing our way and running out of food, it was only by the help of a civilian native that we finally reached Headquarters, well hidden deep in the mountains.

Of the three rifle battalions, only one could rightly be accounted for. With favorable terrain the commander had been able to hold his companies together, and at his last prepared position had made the Japs pull back into the valley, after killing nearly a hundred of them with very slight losses to himself. No contact had been made with either of the other two battalion commanders, and with only one company of either of them.

After one day's rest, four of us started south to get what information we could of the other battalions. Patrols had reported that the Japs were leaving the mountains and returning to the towns in the valley. It was an impossible task for them to find us in those mountains, which were extremely rugged and covered with dense forest. In the first place, they could not supply themselves. Second, when they attacked in force, we dispersed; when they sent out small patrols, we sniped at them.

Although the distance from Regimental Headquarters to the farthest battalion CP was not more than forty kilometers, because of the difficult trails, it was a three and a half day hike. Within a week most of the company and battalion CPs had been located.

On May 7th and 8th word came from Division Headquarters, which had radio contact with the other islands, that Corregidor had surrendered. This news was a severe blow. Until then there had been some hope that help would get through from the States, but this news ended all hope. We had had 6 months supply of food stored away in our bodegas, but in the confusion of retreating to the mountains, many bodegas had been burned in order to keep the Japs from getting them—some of them in areas that the Japs never reached.

During the next few weeks we laid several ambushes—and with considerable success. But the Japs, instead of coming into the mountains after the soldiers, lined up the civilians in the barrio nearest any such incident and shot 10 persons, men, women, or children—to every Jap that had been killed. The ambushes were continued, but an effort was made to warn the civilians in time for them to evacuate the area.

Our improvised cavalry proved extremely useful during that period. Although not too well trained, the men knew how to take care of their ponies and many of them, being natives of the province, could go from one place to another without a map and bring back important information of the enemy. They covered two or three times the distance possible for a man on foot and actually kept us informed of enemy activities in an



area reaching as far as 20 kilometers from the mountains.

During those last few weeks most of us slept wherever we found ourselves at night and ate rice whenever we were given it.

In the third week of May written orders from Division Headquarters ordered everyone to surrender to the Japs between certain dates at certain contact points. It had taken that long after the surrender of Corregidor to persuade our commanding general to give up. Mindanao, Cebu, and Negros had already surrendered. It had been necessary for an officer on the staff of the "Japanese Commander of the Southern Islands" to fly from Mindanao to Panay in order to accomplish this. The order read that any officer or soldier not surrendering would be considered a deserter to the United States Army. The reason given for the surrender was that the Japs, having taken Corregidor, were still holding the prisoners there and demanded that either all American and Filipino forces still active in the Philippines be surrendered immediately or the prisoners from Corregidor would be killed.

There was not much choice left. Battalions were assembled near designated contact points. At these points white flags were raised. Records and paper money were burned. About the 21st of May two officers from Division Headquarters gained contact with the Jap commander of the Panay forces. Division and Regimental Headquarters of the 63d were ordered to assemble at the Barrio of Misi on May 24th in preparation for surrender the following day.

It was a glum quiet group of officers who hiked out of the mountains that day. One incident remains in my mind, possibly because of its irony. The division finance officer and I had gotten well ahead of the main group, so when we came to a spring we sat down to wait for the rest. The finance officer pulled out a sheaf of 100 peso notes and without saying a word, began to burn them one by one. With all of this money we had not had a good meal, or drink, or smoke for more than a month, because there was no place to buy them.

That night most of us slept in the barrio schoolhouse. Word came from the general to shave our beards and look as presentable as possible when we surrendered. The morning of May 25th most of us had a bath and shave in the near-by river. It was difficult to get anyone to talk much.

After lunch a guide came to the schoolhouse and said that the Japs were waiting for us on the other side of the river.

**EDITOR'S NOTE:** Major Whitehead, along with the rest of the Philippine 63d Infantry Regiment, was surrendered to the Japanese on May 25, 1942. Recently returned to this country, he is the only known member of the 26th Cavalry (P.S.) to have reached freedom—but the rest of his story will have to wait until a later date.

# Jap Cavalry in the Philippines

by Major Arthur K. Whitehead,  
*Cavalry*

ON several different occasions in the Philippines I heard of the presence of Japanese horse cavalry units. These reports were received not only over a considerable span of time but also from a wide range of territory.

**Luzon:** While camped east of San Quintin, Pangasinan, on 29 December 1941, I sent a Filipino down into the town to get information regarding the Jap troops which could be seen moving along the road. The Filipino reported that besides tanks, armored cars and infantry in trucks, the Japs also had horse units marching south down the road in addition to an encampment of horse cavalry in San Quintin. As nearly as I could determine from the Filipino's observations, the Japs had at that place the amount of cavalry equivalent to two American troops.

**Davao:** On the Island of Negros about the first of April 1942 an American officer who previously had commanded a Philippine Army regiment, defending Davao, Mindanao and vicinity, told me that when the Japs invaded Davao, after having bombed, strafed and shelled the American position, they had then landed tanks, infantry, artillery, and horse cavalry. He did not know the amount of horse cavalry landed, but he said that the cavalry which he had seen was used for mopping up and for flanking movements over terrain impossible for tanks.

**Panay:** After the Jap invasion of Panay, which took place April 9, 1942, several Filipinos told me that horse cavalry had been landed with the invading forces of Capiz Province. On about the 20th of April, our patrols reported Japanese cavalry marching from Lambunao, Iloilo Province, west to a barrio of Agsirab in the mountains, where a battalion headquarters of the 63d Infantry Regiment was located. This CP, with equipment, etc. was captured by the Japs. Later Jap horse patrols were sent deep into the mountains, but these were shortly withdrawn when the main invading force of Panay was, we believed, sent on to Mindanao.

**Manila:** From June 1942 throughout 1943 intermittent reports reaching me from Manila consistently stated that the Japs had horse cavalry stabled at different points throughout the Manila area. According to these reports, the Japs use the Mongolian pony in their cavalry; also, the Jap cavalryman carries a short rifle with a permanently-attached collapsible bayonet, which folds back underneath the barrel of the rifle when it is placed in the boot or carried slung across the back.



# From Behind the A

## **During Jap Occupation on Guadalcanal\***

by W. S. Marchant

EDITOR'S NOTE: *The author was Resident Commissioner of the Solomon Islands, British Protectorate, and lived there for three and a half years prior to the Japanese occupation. His duties were to maintain the law, keep order and administer the territory.*

AS soon as the Japanese started their eastward drive it was obvious that the Solomons would be very much in the war zone.

It was decided, therefore, that we should retain a skeleton staff for intelligence work and for maintaining contact with the native people.

In short, our plan of action was for the district officers to remain at their stations as long as possible and report enemy movements, but if threatened, to retire to the bush, keep in touch with the natives, and continue to report. Each officer was equipped with a portable radio for communicating with headquarters, which were established in the bush on the island of Malaita. Dumps of food and supplies were made at suitable spots where the officers could retire if necessary. Similarly, the natives were advised to move back from the coast and to establish themselves in the hills.

In the past the Solomon Islanders were famous headhunters, but it has now been 30 years since they organized a raid. Most of them are Christians and the old customs are dying out. Today they live in their villages—sail, fish, cultivate their gardens, and attend church as in many an English village community.

The islands consist mainly of mountains, which rise, as a rule, to about 4,000 feet, though the highest of all in Guadalcanal is 8,000. The climate is hot and humid, and with rainfall up to 10 feet a year, the islands are densely wooded and afford plenty of cover. In fact, the

\*Reprinted from "Interlude on Guadalcanal," *Britain*, January, 1944.

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***This amazing collection of short stories paint a vivid picture of men who have dared defy death and torture behind the enemy lines in order to further the fight for freedom. Each story represents a different type of resistance against enemy domination—in widely separated parts of the world.***

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bush is so thick in most parts that it is necessary to hack a way through with knives. As one man said, "You can almost see the damned stuff grow up as you cut it."

In addition to the large island of Guadalcanal, there are half a dozen other good-sized islands, and many smaller ones and atolls.

When the Japanese occupied the group as far east as Tulagi at the beginning of May, 1942, we settled down in native huts in the heart of the islands, where we were well hidden from aerial view by the dense foliage, and resigned ourselves to a period of watching and waiting. For the next couple of months, the Japanese were in undisputed control, and during this period they occupied strategic points, set up defenses, and began the new famous Henderson airfield on Guadalcanal. It was impossible for us to move about between the islands, as the whole area was under constant air reconnaissance by the enemy. His sea patrols visited the various islands, plundered native villages and took anything they fancied from the European houses.

One of our chief problems was that of supply. The climate made it impossible to hold large reserves of food. We could not get new stocks from outside because our sea communications with the outside world had been cut. Flour, sugar, and tinned foods soon ran out, and we grew to rely on native foodstuffs—panna, yam and occasionally a bit of fruit.

All of the time, we kept a sharp lookout for enemy movements, and the native scouts always managed to bring advance information of enemy patrols so that we could get away before the Japs arrived. Sometimes the notice was not far ahead of the Japs. In fact, one officer was having lunch when a Japanese patrol vessel steamed into the little harbor where he was stationed—so, taking his radio with him, he "upsticks and away." When the Japanese landed, all that they found were empty buildings and the remains of a half-eaten lunch.

During the Japanese occupation, the natives furnished our chief source of intelligence about the movements of the enemy. There was no lack of volunteers for this duty, and they took considerable risks to get the desired information. They would set off in small canoes and paddle the 30 odd miles across the water in all weathers—and the waters around the Solomon Islands are often very far from calm. Then the scouts would hide their canoes in the mangroves and set off on foot to the Japanese positions. They often had very narrow escapes, but all through this stage not a single scout was lost.

We listened to these stories which the scouts brought in, sifted out the essential facts, got in reports from all the other islands and after decoding and collating them with our own, sent them off to the intelligence center outside the territory.



# Axis Facade

Often the scouts would get inside the Japanese positions, and, although unfamiliar with the technical terms for modern equipment, were very ingenious in describing what they saw. Once, for instance, we were particularly anxious to know the number and caliber of the Japanese antiaircraft guns, and one scout described them as, "All same small beer bottle"—which, of course, furnished exactly the information wanted.

During the construction of the airfield on Guadalcanal, the scouts would engage themselves to work for the Japanese, and then after three or four days they would run away and tell us all about it. They found out where the ammunition was stored and the food and the fuel dumps. They reported where the aircraft were based and the positions of the antiaircraft guns, and they generally studied the habits of the enemy. All of this was invaluable in planning the recapture of the islands. In fact, if it had not been for these scouts and our radios, our intelligence could not have known of the existence of the Henderson airfield, much less the exact details of its defenses.

When the American Marines landed on Guadalcanal on August 7, 1942, the Henderson airfield was just on

the point of completion. The attack was a complete surprise to the Japanese, and the Americans captured the airfield the first day. It was the key to the whole island, and when we knew it had fallen, we all felt that our months of hard work and discomfort in the bush had been well worth it.

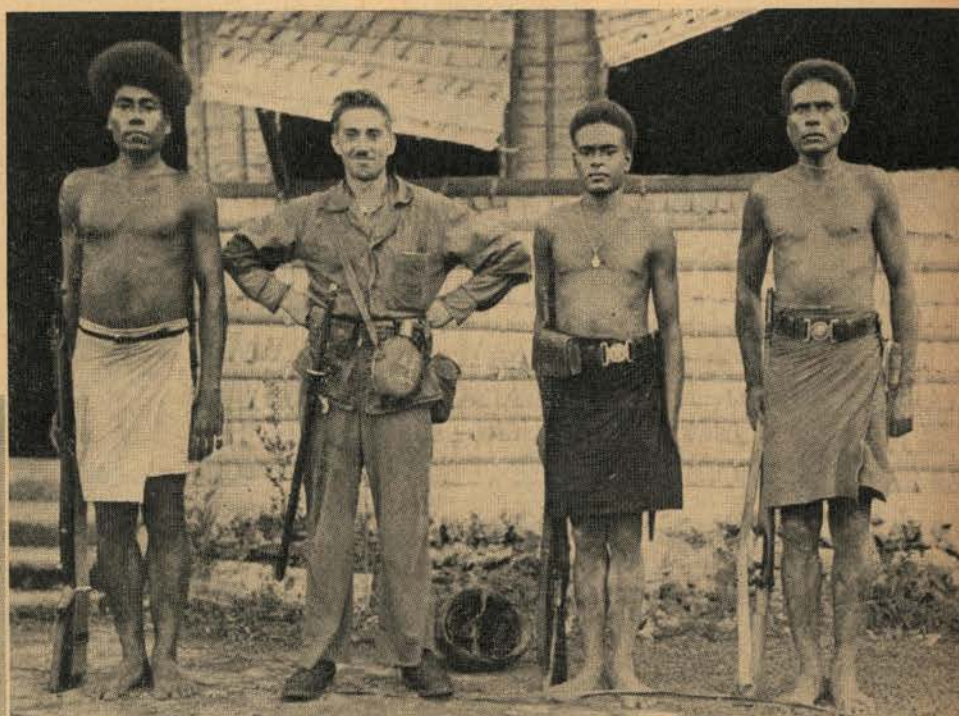
The Islanders did not take part in the fighting—officially—but they were most helpful to us as scouts and laborers. They were splendid, for example, in carrying up supplies once the troops had landed. That was a difficult job. Everything had to be manhandled, unloaded direct on the beaches, and carried for miles in precipitous mountain country.

The villagers also saved the lives of many of our airmen. If any of our people had to bail out, the natives would set off in their canoes, pick them up, and bring them back to their village. They fed them, attended to their injuries, and then sent word on to the nearest Allied post. Often these villages were behind the Jap lines, and then villagers would smuggle the airmen down the coast by canoe at night, and back to Allied territory.

Sometimes, too, the Islanders had a crack at the Japs themselves. There are plenty of examples of outstanding bravery on their part. One Melanesian sergeant was awarded both the George Medal and the American Silver Star. Indeed, if it had not been for the loyalty of the Solomon Islanders, many of us might now have been in a Japanese prison camp.

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Following American landings on Guadalcanal, these three members of the native police force are photographed with a U. S. Marine. During the Japanese occupation, natives were invaluable in furnishing information to British civil agents hid in the jungles. The reports in turn were radioed to Allied headquarters in Australia.

Wide World Photo



←  
Army flying fortresses and fighter planes use Henderson Field, Guadalcanal, after it was wrested from the Japs.

Press Association, Inc.





## A Commando Raid in Norway\*

by Cadet Frank Mills

**E**ARLY in January (1944) our Commando unit was sent to an operational air base and taken completely out of circulation. Nevertheless, we still managed to carry on with our rigid physical training. At this point we were briefed and issued with compasses, maps and foreign currency. Some of the Norwegian lads drew up routes to the objective, and we studied and memorized them.

At last the long awaited day arrived. Early that morning, as we went over our obstacles we had a feeling that this was it. About 1600 hours we got the order: "Fit your chutes, pack the containers and stand by for inspection." For an hour or so all was bedlam and confusion, but eventually we got order, and everything was packed and ready.

It was a lovely moonlit night and very warm in the "kites." We each had a blanket, but very little sleeping was done. We discussed almost everything from weather, to the soldier's perennial subject—anything to make the others believe that we were not nervous, or keyed up. The deception was rather hollow at times, but we really tried.

It was snowing a bit and cold when we reached the "dropping zone." We "hit the silk" and landed O.K., but it took us a bit of time to get organized and get to the rendezvous. It is a natural reaction for a man who has just made a jump to be exhilarated and make a little noise. As section sergeant of No. 1 cover party, I was busy for a while.

When we got to the rendezvous, the demolition squad was waiting for us. After No. 2 cover party came up we had a vote, and since we had a good spot for a bivouac, decided to remain there until the following evening. We dug out snow quarters, made slit-frenches in the snow—by the way, 90 inches of loose snow will stop a .303 bullet—and a party of us went out and extended our tracks so that any snoopers would think we had gone on.

Anyone who has been around the Arctic Circle in January will know that there is very little daylight, and so we left on our trek to the objective early the following afternoon. It was rough going. We were packing over 50 pounds each, and each section had a sled to pull. It was cold, and in the mountains it was really tough. We stuck to the valleys where we could and only took to the slopes when we feared running into a Jerry patrol.

The second day out we met a Laplander who had a herd of reindeer. His sons drove their herd along to cover our trail and showed us a small wood-cutters' cabin where we could bunk. The wood-cutter was a short, dumpy chap and looked a bit like an Eskimo. We called him "Mud-Pack," as his real name was too much for our tongues.

The journey to our "Recce point" was in four hops, and we were very glad to get there. We met one enemy patrol, but our scouts saw the Germans first and, as we



Wide World Photo

British Commandos attack under cover of a smoke screen in Norway. Raids have been frequent; sabotage, damaging.

were travelling in a loose formation, we had no trouble in ambushing and neutralizing them.

When we reached our "Recce point" we sent out small patrols of three men to find out the score at the objective. They learned the times of changing the guard, sentry, and the strength of the enemy. We were a trifle nonplussed to find that the enemy's strength was almost equal to our own. It was also learned that there were two enemy camps—one, with about 100 men, was located about a mile and a half northeast of the objective; and another one with a strength of nearly 200 was three miles southeast of the objective.

Since our get-away was due east, we had a job trying to figure out just which way to go. We finally decided to bull our way right in between them, and as we would be carrying much lighter loads, figured we could make it. It was very cold comfort to know that two miles east of our "Recce point" a hundred enemy were living and enjoying life.

After two days and a night we started carrying out our mission. No. 1 cover party sent out a man to liquidate the sentry and take out the guard room. This operation successfully completed, the "demolition party" placed their charges on the bridge. This bridge—the object of the raid—was a railway bridge of vital importance to Jerry for getting supplies in for coastal defense and would require about two or three months to rebuild.

No. 2 cover party went off to their station and put derailing charges on either side of the bridge. When the bridge was mined a signal was given, and we hurried to a covered position and watched her go. She really went, too, and we were as tickled as if we had pushed her over. We did not gloat long, but did a fast sprint—and I mean fast—down the escape line. Breaking up into small squads, we made our way to a "get-away point."

How we got out of the country is another story, which for security reasons cannot be divulged at this time. This operation was a good "do" that illustrates the excellent planning of "Combined Ops."

With this kind of planning, how can the Axis win?

\*Reprinted from *Blitz* (Canadian), April, 1944.



## "By Night We Ruled Odessa"

by Harrison Salisbury\*

THIS is the story of thousands of armed people who lived in subterranean garrisons 75 to 160 feet below the streets of Odessa on which trod the boots of the invaders. There were some 10,000 guerrilla fighters and 3,000 other refugees, and toward the end their ranks were swelled by Slovak and French deserters from the retreating Germans. By day they clung to their hideouts. By night they sallied forth in forays against the occupation force. Women issued forth to collect food. Patrols went out to ambush Germans.

"By night we ruled Odessa!" That was their triumphant statement to correspondents who arrived in Odessa from Moscow by airplane and truck a scant 72 hours after the last German troops had fled.

Some of these men and women who came up to their liberated city from caverns had held out underground for two and one-half years in one of the strangest sieges of the war. They had lived in chambers hollowed out of the limestone, with offices, printing presses, wireless stations, hospitals and food kitchens. The underground network covered from a 100 to 150 miles of passages and caves. There was even a cemetery.

The principal entrance was in a workers' section called Moldavanka, in an abandoned quarry adjacent to a bomb-wrecked house. Amid scattered limestone blocks, under over-hanging ledges there were three entrances large enough for a man to enter if he crouched. Major Anatole Loschenko, leader of the catacomb partisans, said that the Romanians quickly discovered these entrances after they entered the city in 1941, but that so many of the Romanian guards were killed the entrances were finally left unposted at night.

\*United Press War Correspondent, April 20.

Two small boys with gasoline torches lighted the correspondents' way down the dusty limestone passageways. Three feet high and two feet wide at the start, the passages gradually broadened into a chamber 20 by 20 and 8 feet high. Here was the "reception desk" with a stone barricade where all were stopped and their weapons removed.

The partisan GHQ was another block inside—a small chamber with a wall map of Odessa. There Loschenko had worked behind a stone block desk. At one side was an ammunition works where "flaming cocktails" were made from bottles filled with gasoline. Farther on was a prison chamber for Germans, Romanians and Ukranian traitors.

Loschenko said the organization was perfected in January, 1943, when the front first started to roll back toward Odessa.

"We collected money and started a store of food in the catacombs. We got a small mill for flour and a sausage maker. We set up a printing press and renovated the artesian wells inside the caves. We installed radio and even had connections with the Russian front. The print shop turned out pamphlets warning the populace of dangers.

"When the Red Army started approaching Nicolaev we went underground. By night we issued out and killed German patrols and police. We prevented the Germans from destroying the city.

"For two weeks before the Germans left we were rulers of the city by night."

Loschenko said that partisan women bought weapons for their men "in the open market" from the Germans, who "were even greater speculators than the Romanians." The Germans sold rifles, pistols, and Tommy guns. A loaf of bread bought a grenade.

For the last two days the partisans openly battled the Germans in the streets and killed at least 500.

Civilians in the foreground watch fires set by the Germans and Romanians as they withdrew from Odessa. Organized underground activities prevented widespread destruction of the city, saved many civilians from being slaughtered.



Sovfoto Radiophoto



# RED ARMY COS

WRITING of present-day Cossack tactics, an American news correspondent says, "While sabers are their main weapons, some carried tommy guns which they frequently fired from beneath their horses' bellies in Hollywood cowboy style." Such statements are not only grossly inaccurate, but they obscure the real achievements of these adaptable horsemen in machine-dominated World War II.

Cossacks are no longer "pure saber cavalry," and firing guns beneath their horses' bellies is more of a *djigitovka* stunt than a combat practice. The Cossacks are colorful soldiers, but they must be viewed in terms of military facts—not romantics.

Prior to this war, the layman, if he thought of the the Cossacks at all, regarded them as dashing cavalrymen of the past—troopers whose day is as dead as that of the German *Uhlán* or Napoleon's *cuirassier*. These horsemen of the steppes, however, were quick in adapting their methods of fighting to the requirements of modern warfare. Thus, modernly equipped Cossack units have, by their combat exploits in this world conflict, proved the usefulness of horse cavalry<sup>1</sup> in present warfare.

In 1944 the Cossacks can take pride in the fact that as soldiers they stand on the record of their own daring achievements—not on the military accomplishments of their ancestors.

## CHARACTER AND HERITAGE

Who are the Cossacks? These sons of the steppe are born as Cossacks, and here begins their excellent *esprit d'corps* for they take great pride in being a special people. Their pride has, on occasions in their history, been so strong that some Cossack elements have attempted to establish their people as a separate political entity. Nevertheless, as a majority they have, over a long period of turbulent history demonstrated their loyalty to their country as Russians.

What other factors contribute to their military effectiveness and excellence as cavalrymen? For one, their environment is rural. They are mainly farmers. Cossacks are healthy, hardy men whose everyday life is not too steeped in the comforts which might later contrast sharply with a soldier's existence. Cossacks make good cavalrymen because ordinarily they are full-time horsemen. The average *Kazak* begins riding when

<sup>1</sup>In the Russian usage, the term "cavalry" means *horse cavalry only*, and it will be so used in the remainder of this article.

he is about four or five years old, and by the time that he is a young man he has behind him years of riding experience and a knowledge of horses. Thus the Cossacks enter military service with a distinct advantage over many recruits.

Not the least important of the factors characterizing the Cossacks as hard fighting soldiers is the fact that for centuries they have been participating in warfare—and the interval between these many conflicts has been so short that hardly a generation has been without numerous war widows. The latter condition is reflected vividly in Cossack folklore and legends by such phrases as, "—the lands of the Kuban are fertilized by the blood of Cossacks," or, "The water of the Don (river) rises high with the tears of Cossack widows."

There is a strain of fatalism among the Cossacks which comes to light in combat, and it is always evident in their songs and folklore. Cossack music, telling of war and strife, reflects sadness, turmoil, and fatalism in such lines as—

"If in battle I am killed, bury me  
Where I may rest, east of the River Dnepr;  
But if the bullet passes by—perhaps,  
I may return, home to my loved ones."

They sing a great deal about historical battles, the exploits of their heroes, and about their prowess in war. A typical modern verse, picked at random is this one:

"From forest to the steppe, on swift carriers  
A Cossack regiment is riding at the gallop.  
Their blades are not yet reddened by blood,  
But the Cossacks are rising in their stirrups."

The boisterous, fun-loving Cossacks are no supermen, but they are tough, competent soldiers whose combat effectiveness has made their enemies respect and fear them. Wars are won by troops who fight aggressively, and the term aggressiveness best describes Cossack spirit—the spirit which today has permeated through all of the Red Army cavalry.

Centuries before paratroops, commandos, and Rangers came into existence the Cossacks set the pattern for aggressive, relentless and violent fighting. As soldiers they are a pugnacious, adventuresome lot who supplement their impetuous spirit with endurance and determination.

The Cossacks are proud of their rich military heritage which began centuries ago when they agreed to per-

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## Part One — Traditions, History and Uniforms

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# SACKS

by Major Robert B. Rigg, Cavalry

Photo by Major E. S. Kennedy

form regular military service for the Russian government. Because they come from Russia's longest line of professional soldiers, the Cossacks have always been taught to expect combat, and they have usually been mentally prepared for the unpleasantness of war. This has aided them to a degree, when combat has come. Their willingness and ability to fight also springs from their loyalty to country, for the ancestors of today's Cossacks fought to sustain and extend the borders of Russia. Generally speaking, the Cossack population, taken as a whole, has been as human as other peoples in their reactions to the holocausts of conflict. The Cossack people have suffered from war weariness, too.

The major portion of the Cossacks fighting in this war are the Don, Kuban and Terek Cossacks. The Ural, Orenburg and Siberian Cossacks have contributed units, but numerically speaking, these are only small colonies, descendants of Cossacks who years ago migrated from the Don and Kuban regions.

## MILITARY BACKGROUND

Under Tsarist rule a Cossack began military service when he was 18, and for the next twenty years he was subject to active duty. As a general rule, however, only the first two or three years were spent on active duty. Completing this, the Cossack assumed a reserve status. Reserves were divided into several classes, and the *Kazak* passed from one class to another with age; the first class (the younger Cossacks) was liable to immediate call.

The Imperial Russian Army always contained a regular contingent of Cossack units, while those Cossack cavalymen in reserve were organized in regional units on the order of our National Guard. In World War I these reserve Cossacks were mobilized and dispatched to the fighting front in a matter of days.

In return for their military services the Cossacks were endowed with certain privileges, and as a result they were better off than the average Russian of the period. The Statute of 1869 endowed all Cossack officers and civil servants with landed property. Previously there had been little social distinction between Cossacks, but this statute had the effect of dividing them into classes and destroying their former cohesion.

One of the remarkable facts about the Cossacks has been the democracy which existed among them. They elected their civil leaders and they lived a successful communal life. These Cossack prerogatives, however,

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This Cossack Guardsman, posing beside his horse, is wearing the very practical *burka*, a heavy fur felt cape weighing about nine pounds. The *burka* hangs straight, protects rider and horse; at night is often used in lieu of blanket.







Photo Union of Soviet Socialist Republics

Symbolic of the traditional father-to-son heritage are these two Don Cossacks—Sergeant M. Ryabov and his son Junior Lieutenant V. Ryabov of the same Guard Cossack unit. The tommy gun (Model PPSH M1941) carried in this fashion is ready for instant use, yet it allows freedom of the hands at other times. The father has just been decorated with an order.

contrasted sharply with the less fortunate Russians who surrounded them.

A decree of December, 1912, modified the terms of Cossack military service, and the decree of June 1918, eliminating all of the Cossacks' special privileges, placed the Cossacks on a par with all Russian citizens.

The Cossacks did not achieve their present efficiency and military effectiveness overnight or without prolonged effort. Their military history contains mistakes, and many Cossack deficiencies were not the fault of the government.

Some Cossack elements in history were not soldiers in the true sense of the word. Despite an excellent *esprit d'corps* the Cossacks several times in the past, neglected discipline and were forced to pay the resulting penalties. In times past, various Tsars of Russia had given the Cossacks the privilege of looting after battle. This was a form of extra reward for their good combat services.

The act of plunder had its day long ago, and eventually armies came to recognize that discipline was weakened by such an activity. At a time when most armies were taking measures to abolish looting, however, the Cossacks were perfecting their technique. Finally looting became one of the Cossacks' major military weaknesses, and it was not until these cavalymen became a part of the Red Army that it was completely wiped out.

The present Cossack cavalryman is more self-possessed than his warrior ancestors, some of whom might be typified by this story that Cossacks tell today: "Tsar Peter the Great once came upon a Cossack who was nude except for the pistol and saber hanging from his waist belt. The Tsar asked the Cossack why he was in such a deplorable, naked condition, and the Kazak replied that he had sold all of his clothes for vodka. The Tsar then inquired as to why he had not disposed of his pistol and saber in a similar fashion if he had such an unquenchable thirst. The naked Cossack's proud reply was that he would *never* sell his arms; with them he could obtain more clothes—and more vodka."

As a specialized military body of the Tsars, the Imperial Cossacks were obliged to perform many police tasks. Too often this policing took time away from field training and more than one Cossack unit went into battle handicapped by a lack of proper training.<sup>2</sup>

Another bad aspect of Cossack policing was that in certain regions it worked to the disadvantage of national unity, for in performing these tasks the Cossacks were used against non-Kazak people who resented the fact that this one group so often enforced the law. As a result, the Cossacks came to be regarded with enmity in many communities.

Often, however, the Cossacks were not in sympathy with their missions, but they chose to obey orders rather than be called poor soldiers. During the Revolution, Cossack feeling manifested itself more when they obeyed orders in letter, but not in spirit. This frequently occurred when the Cossacks were put to a task they considered unjust. There was a saying in Russia that the "Revolution progressed from under the bellies of Cossack horses." This is based on incidents where Cossack units were ordered to form lines to stop crowds. The horsemen obeyed their orders, but winked as the people went underneath the animals and forward to their objectives.

#### SOVIET COSSACKS

The Soviet régime has altered and improved the Cossack military service as compared with that of Tsarist times. The latter system showed many weaknesses during both the Russo-Japanese War and the First World War, and would have hardly proved practical in the present conflict.

The unruly and freebooting Cossack soldier of past generations would find little place among his brethren in the disciplined Soviet army of today.

Qualified American observers, who have seen the larger armies of the world, agree to the fact that the

<sup>2</sup>Cossack units from Warsaw (then Russian) made a very poor showing in the early part of World War I. They had been too long on police duty in the city, and when they entered field combat their lack of training caused serious blunders and many casualties.



Red Army is about the best disciplined military force in history. The Cossacks could not fit into such an efficient organization without complying in every respect with this excellent standard of discipline.

The new era for Cossacks began with the Russian Civil War. This conflict substantiated Russian faith in its cavalry, and it laid the basis for Soviet Army Regulations—its methods of training, tactics and strategy. Cossacks fought on both sides during the Revolution. Their cavalry was the mainstay for the disintegrating White side, while among the Bolsheviks Marshal Budyenny's famed, long-marching I Cavalry Corps contained a great many *Kazaki*. The combination of the World War and Civil War served to depopulate and somewhat weaken the Cossacks, and the effects of the combined conflicts were felt long after.

The Revolution brought many changes in Cossack life, but the *Kazaki* finally became adjusted to the Soviet Government's system of State-owned land. Collective farms replaced the many small ones previously in existence, and the improved machinery and management benefited Cossack communities, which prospered under the new government.

While old Cossack traditions were revived by the Bolsheviks in the period after Civil War, the political stability of the Cossacks was questionable. They ceased to exist as a military force until about 1936, when they were formally made a part of the Red Army. Earlier the Cossacks had served in the Red Army as individuals, but there were no special Cossack units such as there are today. All doubts of Cossack loyalty were erased in 1942 when young and old Cossacks organized themselves into guerilla and volunteer bands for the defense of their homeland against the Nazis.

Today the Cossacks fit well in the Red Army because of the relative preponderance of cavalry maintained by that force. Years ago Red leaders, lacking "Maginot Line complexes" and recognizing the lengths of the Soviet Union's borders, appreciated the need for a large army of mobile troops, and today's Soviet cavalry and mechanized forces are a result of that early foresight.

#### UNIFORMS

*The Field Uniform.* The distinctive dress which has characterized the Cossacks in all past wars is not worn in combat today. Instead, the Cossacks wear the prescribed field uniform of the Red Army cavalry. They are allowed, however, to retain their distinctive Cossack caps. The Cossack field uniform is illustrated in Sketch No. 1.

This is the first war in which the Cossacks have consented to wear helmets. Nevertheless, the metal headgear is optional, and the majority of Cossack units prefer to wear their traditional lambskin *kubankas*, or "Don military caps" in combat. Cossack fatalism, plus the desire to keep one item of uniform peculiar to themselves, has accounted for this preference.

The cavalry field uniform consists of slate grey—OD

blouse and breeches, both of which are slightly more loose fitting than our own cavalry dress. Dark leather boots (*sapogi*), leather belt, epaulets, and Cossack cap make up the remainder of the uniform. Officers wear dark blue breeches, a Sam Browne type belt, and they always carry a pistol. In Tsarist times most of the Cossacks did not wear spurs but they relied on a *nagaika*, a short flexible whip. Red Army Cossacks have discarded the *nagaika* for military use, and they all wear spurs.

The winter uniform is of wool in contrast to the light cotton of the summer one. The Cossacks use the Red Army long coat in cold weather. The unique *burka*, which is a Cossack garment, may be either substituted for the long coat or worn over it. In winter combat the Cossacks quite frequently make use of the Red Army white camouflage garment. Occasionally, they wear the infantryman's *valenki*, or wool felt boot. The *valenki*, however, is a special winter boot designed primarily for dismounted action.

The Don Cossacks wear a special "Don service cap" which has a red cap band, and is a piece of headgear distinct from that worn by other Cossacks or Red cavalrymen. The Siberian Cossacks wear a loose, fur cap called a *papka* the top of which is flattened in by hand when placed on the head. During the Russo-Japanese War of 1905 the Siberian<sup>3</sup> Cossacks wore very large *papkas*

<sup>3</sup>The only Cossacks who fought in the Russo-Japanese War were mounted and dismounted elements of the Siberian Cossacks. Don, Kuban and other regiments had just arrived in the theater of war when the conflict ended.

#### Cossacks in Poland

*July 24. (U.P.) Marshal Rokossovsky's and Marshal Konev's armies split the front open with gains averaging thirty-five miles in twenty-four hours across the Polish plains.*

*Rokossovsky's Cossack cavalry swept across the Wieprz River on a wide front, charged into the big industrial center of Lublin, ninety-three miles southeast of Warsaw, yesterday and killed more than 3,000 Germans in the first few hours of street fighting.*

*Without pausing, the main forces by-passed Lublin from the North and pressed on to within twenty-five miles of the Wista (Vistula) River. The Wista was expected to prove no more of an obstacle to the Russians than did the Bug. It is the last natural defense barrier before Germany.*

*Farther north, Rokossovsky rammed a giant pincers across the approaches to Warsaw. One force captured Parchev, eighty-eight miles southeast of Warsaw, and drove on to within eighty miles of the capital, while the northern column pushed through Siematycze to within seventy miles east of Warsaw in a formal advance.*



which they stuffed with paper and cloth as an added safeguard against Japanese sabers.

The Kuban Cossacks have a special fur cap of their own called a *kubanka*. This piece of headgear is short, round and kettle-shaped. The top of the *kubanka* is flat and made of red cloth with two light blue (the cavalry color) cross stripes on it. The Terek Cossacks also wear a *kubanka*.

Uniform accessories include the usual soldier's issue of extra breeches, underwear, socks, gloves, etc. Because of the simplicity of manufacture, foot cloths are often used in lieu of socks; these are wool or linen, depending on whether it is summer or winter. This cloth is carefully wrapped around the foot and ankle in a certain way; it is not as crude as it sounds, and over a period of many years the Russians have found foot cloths to be practical.

**Dress Uniform.** This uniform is along the lines of the traditional Cossack military dress. The main feature of the outfit is a garment called the *cherkess*. The latter is a circular skirted long coat with the usual rows of "bullet" cases placed diagonally across the breast part of the coat. Today, these "bullet" cases are only ornamental. A *rubashka* or high collared shirt is worn under the *cherkess*. The *kinjal*, a short Caucasian-type dagger, is worn on the waist belt, and it is as much a part of the uniform as the breeches, soft leather boots, and Cossack cap which complete the dress ensemble. Except for minor changes this dress uniform is the same as the Cossacks have worn for generations.

In the initial phases of World War II the special Cossack volunteer units were clothed in a variety of typical Cossack uniforms having the *cherkess*.

**The Burka.** This strange looking cavalry garment is a typical feature of Cossack winter dress. It is a large fur felt cape weighing about 9 pounds. Many a U. S. cavalryman has sworn at the raincoat which, when lashed by the wind, left his legs bare in wet weather.

The *burka* is a garment of sufficient stiffness and weight to hang steadily from the rider's shoulders even at the gallop. Furthermore, the *burka* is purposely very full in the back to allow the rider freedom of motion in the saddle without having the garment slip between his seat and the saddle. (See Photo 9.)

This unique article of military clothing seems to have originated in the Caucasus where it was designed to protect horsemen from the mists and rains, as well as snow, wind and cold. The *burka* can be found in cruder forms among the tribesmen of Afghanistan, Iran, Turkey and Iraq.

The *burka* is used in lieu of a blanket when it is necessary to travel light. A cavalry general who was in the Caucasian Campaign of 1942-43 told the author that for days at a time the *burka* served him as an outer covering in the daytime, and his only blanket covering at night. This cape is often used as a improvised stretcher for carrying the wounded or dead. In the winter it has even been used as a substitute for a sled to drag weapons across the snow.

*Burkas* were used in a very unique fashion when a snowy Caucasian pass was forced in 1921. A Red Army cavalry division surmounted the Godher Pass by laying all the division's *burkas* out on the narrow, slippery trail. These heavy garments provided firm footing for the horses led up and over the winding pass. Even some light artillery was drawn over this "roadway of *burkas*." While not specifically designed as camouflage apparel this heavy dark cape often serves to conceal the cavalryman because its quality permits it to be shaped in a variety of ways which destroys the familiar silhouette of a man.

When not worn by the rider the *burka* is folded in a square roll and strapped in front of the pommel (sometimes on the cantle, in case of Caucasian saddles).

**The Bashlyk.** This is another article of clothing peculiar to the Cossacks—particularly the Terek Cos-

Photo Union of Soviet Socialist Republics



These Kuban Cossacks are wearing the *burka*, the *bashlyk*, and the fur felt *valenki* or winter boot. The horses are typical Cossack mounts, not beautiful looking animals, but very strong ones. This photo of March, 1944, shows a Cossack raiding party ready to penetrate the enemy's lines and operate in rear echelons.



sacks. The *bashlyk* is a cowl or hood, designed to protect the horseman's neck and head in severe weather. This combination of headdress and scarf hangs from the Cossack's shoulders like a cape when it is not actually in use. (Sketch No. 2.) During inclement weather the *bashlyk* is pulled over the head, and the extra folds, wrapped around the neck and face, give the rider protection against snow, sleet, rain and cold winds. The color of the *bashlyk* varies according to the unit. Usually the lining is the colored part while the outside is an OD; the *bashlyk* is reversible, and in the field the colored side is turned inwards.

*Insignia.* Cossacks wear the standard insignia of the Red Army. A red enameled star is worn on the front of the Cossack cap. This has the national coat of arms on it, and all Red Army personnel wear this cap badge.

In January 1943, the Red Army adopted *pogoni* (epaulets) in place of the former sleeve and collar insignia which denoted rank and arms of service. These shoulder boards are identical in almost every respect with epaulets worn by the personnel of the Imperial Russian Army, have a system of stars and longitudinal stripes to indicate various officer ranks. Horizontal cross stripes show NCO ranks. All soldiers and officers in the Red Army now wear these epaulets.

In addition to receiving extra pay, Cossacks belonging to Guard units wear a special "Guardist" badge. All Cossacks receive and wear Red Army decorations in accordance with regulations which apply to all Soviet military personnel. Wound stripes take the form of ribbons, except that they are worn on the opposite side of the chest from ribbons and decorations. Red wound bars are for lesser wounds, while gold ones are for the more serious injuries in battle. (Sketch No. 1.)

### THE WAR

When Hitler launched 170 divisions<sup>4</sup> against the Soviet Union in his attack of 22 June 1941, the Red Army sustained serious losses. A static defense was impossible against the thrusting power of German armored wedges, but the *blitzkrieg* technique exposed German flanks as well. To the surprise of foreign observers the Soviets began to use their cavalry in operations against enemy armored flanks. Thus, during the period of the Red Army's strategic defensive, cavalry elements engaged in a series of tactical offensives to fulfill its mission of delaying and inflicting heavy losses on the enemy.

It is unlikely that the armor-intoxicated enemy ever thought that they would have much to fear from Cossacks, or any other cavalry, but German and satellite concepts were altered after Ikva River, Shumachi, Shtepov, Rostov, Yelets, Stalinogorsk, Venyev, Moskva, Kropotkin, Balta, and the Caucasus. Even General Guderian, the German armorophile, was tactically embarrassed on occasions by the once so-called "obsolete horsemen." Hard-bitten Major General Glinisky relates with much satisfaction how his horsemen cap-

<sup>4</sup>Soviet authorities estimate one-third of these were mechanized.



Photo Union of Soviet Socialist Republics

This picture, taken in December, 1943, illustrates the Cossack winter uniform. These Don Cossack scouts wear the special "Don Cossack service cap." The leather pouch on belt of upper Cossack is the standard Red Army map case.

tured General Guderian's mechanized command post from which Guderian himself barely escaped.

Russian cavalry has fought steadily through three hard years of war—initially checking the German advances, and now hastening the enemy's retreat. On combat performance alone Red Army cavalry has justified its existence and the faith in Marsal Stalin and other Soviet leaders placed in it.

The effectiveness of Soviet cavalry, however, lies not alone in the prowess of well-trained individuals and units, but in its *mass* and *combined* application with mechanized forces. Soviet generals have at their disposal divisions and corps of Cossacks and cavalry, and as late as the summer of 1944 they are still training new cadres.

Part II of Major Rigg's account "Red Army Cossacks," describing Cossack equipment, arms, and armament, will appear in the November-December issue of THE CAVALRY JOURNAL.



# Raids in German Rear<sup>\*</sup>

*by Eugeny Krieger*

**D**URING the first months of the war, the Germans ascribed a magic power to the word encirclement. This word no longer exists in the vocabulary of Soviet soldiers. But the Germans have now acquired a mortal fear of encirclement.

In the days when mad fear compelled the Germans in the Korsun-Shevchenkivskyi district to toss about in a tightening ring of Russian troops, a Soviet Guards cavalry unit in a distant sector of the front made a breach in the German defense line and set off on a deep raid through the German rear. Every man in the unit knew he would have to fight inside the German front, completely isolated from the main forces, along roads which the Germans could intercept and cut at any moment. But the guardsmen had behind them the Battle of Stalingrad, the attack at Kharkov, the glory of the Desna and the fame of the Dnepr.

The path was difficult, and in addition the weather was frightful. Snow alternated with rain. The swollen earth greedily sucked down the wheels of guns and vehicles. The cavalrymen left on the other side of the front everything that could hamper their movements and maneuvers—motorcars and heavy transport vehicles of the rear services—and took along only the most necessary equipment, mainly guns and light transports.

<sup>\*</sup>Information Bulletin, Embassy of USSR.

Driving a wedge into the German front, sweeping away small centers of resistance in their path and taking fortified villages by storm, the cavalry squadrons headed due west. After covering about 80 kilometers they turned sharply to the south, toward Rovno. Behind them, collapsing under frontal pressure, came columns of retreating Germans. Sometimes the engagements were quick and final, sometimes difficult and drawn-out, but the peculiarity of all was that they were fought deep inside the German front, which was breaking up under the onslaught of the main forces.

Many times, after capturing a large village straight from the march, advance squadrons would gallop on ahead, and a few hours later their supply carts, hurrying after them, would encounter retreating German troops in the same village. Then the drivers had to get their carts through by cunning or boldness, under the very noses of the Germans—sometimes by forest detours, or, if it was night, by driving straight through the village.

It sometimes happened, too, that a detachment of Guardsmen which had fallen behind would overtake a large enemy cavalry column in utter darkness and calmly attach themselves to it. They would trail along until one of the dozing horsemen muttered something in an incomprehensible tongue, whereupon the Guardsmen would discover they were with the Germans. In such cases the daredevils never lost their heads, but con-

Machine gun carts of a Cossack unit roll forward with Cavalry. Carts have cross-country mobility, are not road bound.





The Cossacks of the IV Kuban Cavalry Corps of Guards under Lt. General N. Y. Kirichenko performed a heroic march across the Caucasian mountain range and defended Tuapse; battered the Fascists at the approaches to Grozny, Rostov, and Taganrog; took part in the break-through of the Mius front in the struggle of the Red Army for liberation of the Donetz Basin and Azov Region. Photo shows Kuban Cossacks on the march.



tinued with the column until the first cross-roads, where they would quietly wait until the Germans had passed, then either escape safely—or if they had the advantage, raise such panic among the enemy by sudden fire that in two minutes only dead Fritzes would remain on the road. In the deep German rear, Soviet cavalrymen often captured groups of Germans, whom they took along with them.

The aim of the Guardsmen in their raids was to appear suddenly, from a totally unexpected direction, near towns behind the German lines, and take them with few casualties.

Now that these missions have been successfully completed, the general who headed the fantastically daring operation only tells of the amusing incidents and keeps modestly silent about the difficulties and spectacular successes.

For example, he recalls the night that he stopped to rest in a village, quietly worked with his staff and even found time for a little sleep—only to discover in the morning that the Germans had set up their division headquarters in the adjoining village, separated from him only by a small gully.

On another night the General was infuriated by the spectacle of an automobile speeding through a village which he had occupied, with every headlight on, contrary to all rules of behavior in the enemy rear. He shouted to the commandant: "What the devil do you mean by letting your radio station run around with lights on? Stop them!"

The Guardsmen rushed after the car and halted it. The German gendarmerie officer inside was no less surprised than they; he had come to the village in blissful ignorance, looking for a place to spend the night.

The general was particularly pleased with the work of the transport service. Thirty-two carts loaded with shells were sent after the cavalry, which had moved far

ahead. Because of washed-out roads, the carts had to be drawn by oxen. The cavalrymen tried to hurry the slow animals by continuous "Giddaps!" A number of times they encountered groups of German troops retreating from the east along the road by which the Guardsmen had recently passed; at other times they ran into German garrisons, from which they extricated themselves heaven only knows how.

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### **In the Battle of Korsun-Shevchenkovsky, during the Soviet advance in the Ukraine, cavalry played a vital rôle in the encirclement of strong German units.**

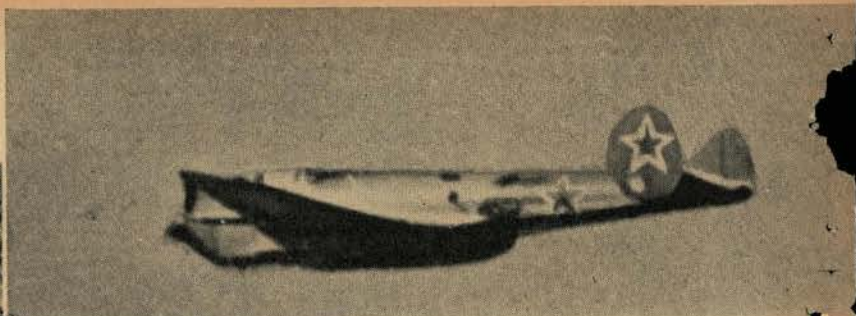
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Ten days had passed since the cavalrymen had been told by radio that ammunition was on its way in ox-drawn carts. They had given up all hope, certain the transport was lost. Then, at the approaches to a town they were besieging, the Guardsmen heard from the road melancholy "Giddap"—and the transport hove in sight.

This seemed nothing less than a miracle—the drivers had covered 150 kilometers in the German rear without losing a single cart. The Guardsmen entered the besieged town, behind the German lines, with light casualties—and the victory was saluted in Moscow by cannon salvos.

During these same days the ten picked German divisions tossed in their tightening ring, maddened by the now terrible word for the Germans—encirclement—a word which meant doom and destruction for them.





# Air- Cavalry at Bryansk

*by Guards Colonel V. Ukhov*

THE cavalry plays an important part in offensive operations conducted by the Red Army. Penetrating into the enemy's rear, it plays havoc with his lines of communications, smashes his headquarters, destroys his means of transport and communication services, and so on.

Cavalry is most vulnerable from the air; therefore, it stands in need of careful covering by fighter planes.

## MISSION AND LIAISON

The task before the cavalry units operating in the Bryansk sector was to penetrate into the breach in the German defense and, by sudden and impetuous attacks from the flanks and rear, develop the success of the advancing land forces, operating from the front. It was then to break through to an important line of the enemy's communications, cut it, and thereby threaten the Germans with encirclement.

In conformity with this task, the fighter planes were to cover firmly the combat formations of the cavalry, while the bombers and attack planes were to cooperate with the cavalry on the battlefield. A careful plan for covering the cavalry in the various stages of its operations was drawn up. This plan covered three specific phases—the moment of the cavalry concentration; the moment when it entered the breach; and the time of action inside the enemy's defenses.

Before the commencement of operations, representatives of the air forces were sent to the headquarters

of the cavalry unit. During the advance they remained with the combat formations of the cavalry and thus secured the coordination between the two services.

On demand of the cavalymen the air representatives called out air forces, got into touch with the leading planes by radio and directed them to the targets that were to be bombed.

The function of the air representative was not simply to execute the orders of the staff of the land forces. He was invested with considerable powers. In conformity with the situation on land and in the air, he determined the need for and force of the blows from the air and called for the necessary number of planes.

## CONCEALMENT AND SIGNALS

The situation on land and in the air was favorable for the operations of the Soviet troops. The forests in the district made the horsemen invisible to the enemy planes; and the superiority of the Soviet air forces ensured the successful work of the attack planes.

At the same time, however, the forests made it difficult for the cavalry to indicate their location. A signalling system had to be adopted. At first the cavalry would spread strips of white material on the forest glades and roads. These arrows of white material indicated the direction of their movements in daytime, while at night rocket flares were used. This, however, was not sufficiently effective because of the high mobility of the cavalry. Moreover, the cloth as a rule, would become dirty and therefore invisible from the air. The difficulty was solved by setting apart two fighter planes to patrol duty. Flying low these planes





would inform the staff of the air forces by radio regarding the position of the cavalry units. Along with this, these fighter planes performed the no less important function of warning about the appearance of German air forces over the battlefield.

Under reliable cover from the air, the cavalrymen approached the breach and concentrated for an assault. They entered the breach at night, and until daybreak bombers cleared the path for them.

During the day, the officers of the cooperating units had agreed upon the signals for identification and for pointing out the targets. When Soviet bombers appeared over the battlefield, the horsemen indicated the line of the front by rockets, while tracer bullets designated the direction of the flight to the airmen. Directed in this manner and having their targets pointed out to them, the airmen bombed accurately and inflicted heavy losses on the enemy.

#### FIGHTER PLANE ESCORT

When dawn came, the attack planes went into action. The fighter planes protected the cavalry by a constant barrage. At that time the clouds broke and rose to an altitude ranging from 1,500 to 3,000 meters, leaving a number of "windows" and gaps of visibility, which were favorable to the operations of the enemy.

Soviet fighter planes flew in tiers. A group of covering planes carried out a barrage with the object of attacking the German fighter planes as they came out of the clouds; to fight the bombers a spearhead group flew 400-500 meters and, when necessary, they were replenished by fresh forces in the course of the battle.

Part of the fighter planes were on the landing fields close to the line of the front. This enabled the sending of reinforcements in the air battle without any delay.

On one occasion, the cavalrymen inside the German defense lines, were attacked by enemy planes. Russian fighter planes immediately took off and within three or four minutes entered into battle. The air representative immediately got in touch by radio with the leading planes and sent them against the enemy bombers. The counterattack proved timely, and the enemy suffered defeat.

#### BOMBER ASSISTANCE

Taking advantage of the successful actions of other branches of the land forces operating in the main direction, the cavalrymen then broke through far into the enemy's rear and come out on the line of the

Sukhinichi-Roslavl railway. Here they were attacked by large forces of the enemy concentrated at one of the railroad stations. Several groups of Ilyushin-2 bombers soared up in the air. Having received by radio the order transmitted by a staff officer of the observation post, they attacked the Nazi combat formations. Other groups were directed to attack objectives in the enemy's rear. The massed blow of bombers put out of action several echelons and thereby disorganized the enemy's supplies at the most critical moment of the battle. The attack was so effective that at the end of the day the cavalrymen captured the station.

#### CAVALRY PURSUIT AND AIR RECONNAISSANCE

Having lost an important line of communications in the rear, the defeated German units began to retreat to the south, but were closely pursued by the cavalrymen. During this pursuit both air and cavalry staffs continuously carried out reconnaissances and informed each other about the situation on land and in the air.

The Germans finally succeeded in breaking loose from the pursuit of the cavalry units and crossed the river. On the opposite bank of the river they concentrated artillery and Tommy gunners in preparation for an attack on any attempted bridgehead. The air forces then took special control of this sector and carrying out a thorough reconnaissance obtained precise information regarding the targets. Then several successful air raids were effected, and the enemy's design was frustrated.

After crossing the river, the cavalrymen rushed to the railway but again met with stubborn resistance. The Germans, counterattacking the advancing units from three sides, endeavored to surround them. A fierce battle broke out which lasted for two days. The cavalrymen dismounted and fought alongside the infantrymen. Of this they informed the air command.

#### DECISIVE BATTLE

The attacking planes once more came to the assistance of the cavalrymen. Blows were inflicted from the air on the enemy's key positions and nests of resistance, as well as upon their lines of communications, which were feeding the enemy from supply centers in the distant rear. Fighter planes, constantly soaring over the battlefield, protected the cavalry against air attacks.

Because of the rapidly changing situation, the cavalry commander, together with the air representatives, had to define the targets precisely and issue frequent new orders to the planes in the air. In this decisive stage of the battle, the more important objectives to be bombed and stormed were determined by the commander of the cavalry groups.

As a result of the two days' battle, the cavalry units captured three railway stations and cut an important line of communications in the enemy's rear. In this operation in which the cavalrymen carried out their task of threatening the Germans with encirclement, the air forces played an important rôle, and the battle for an important German base was won.



# Tank Battles for Minsk<sup>\*</sup>

*by Lieutenant Colonel P. Slesarev*



Sovfoto

Tanks on the offensive in the Minsk direction.

**M**INSK fell to the Russians in the early days of the offensive launched June 23rd. It was taken as a result of well planned and ably executed deep flank attacks, conducted on a wide front, which until the last, was almost strictly concentric. Before the capture of the city, all German main supply lines for 25 to 30 miles of Minsk were seized by Soviet tanks operating in intersecting directions; and since tank operations present tactical interest, they deserve detailed analysis.

Following the rout of German forces near Orsha and Borisov, the enemy began a hasty retreat westward. His main forces, including a tank division, withdrew in two columns toward Minsk, in which area he intended to make an arena for lasting stubborn battles. But Soviet tankmen under Major General Forminykh upset the Nazi plans. Setting out in rapid pursuit, the tankmen smashed the Germans on the approaches to Minsk and captured the city before the Germans were able to organize an adequate defense.

The operation developed along the following lines:

When Soviet troops captured Borisov, one tank group moved up along the Moscow-Minsk highway and pressed hard on the tail of the German column, while Forminykh's tanks, following the highway north, menaced the German flank. Forests and swampy ter-

rain so slowed the movement of the tanks that initially they were unable to overtake the Germans. The situation became even more complicated toward evening when the tanks reached a river with marshy banks, and over which all bridges for 6 to 9 miles had been blown by the retreating enemy. Every possible measure was adopted to restore the bridges, but without success. There seemed no hope for the tanks to cross before morning, and such a delay might enable the enemy to break away during the night and escape. But that did not happen.

## DOUBLE ATTACKS

That night, while one tank unit, which had advanced along the highway, overtook the Germans and engaged them in stiff fighting, Lt. Colonel Mischenko directed his machines south where crossings were being built through forests and marshes. Aided by Partisan guides, who marched ahead of the column in the darkness, these tanks covered about 25 miles under exceptionally difficult conditions and emerged in the Germans' rear.

After brief reconnaissance, Colonel Mischenko attacked. The blows, delivered from both flank and rear,

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**A detailed analysis of the tactical employment of Red Army tanks in attack, routing and pursuing the German *Wehrmacht***

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<sup>\*</sup>By cable to THE CAVALRY JOURNAL, from War Department, USSR, Moscow, August 5, 1944. Action described here took place in early July, 1944.



took the Germans completely by surprise so that during the initial stage of the attack the enemy's fire, which was directed eastward, was thoroughly disorganized. In a very short time the Soviet tankmen knocked out 5 Tigers and 10 enemy guns and annihilated nearly 300 Nazi soldiers.

The panic-stricken German group was severed into two unequal parts—the smaller force retreating toward Minsk, and the stronger one toward Ostroshitsky Gorodk, where it hoped to rest and restore order in its ranks. These intentions, however, failed to materialize.

As the larger force approached Ostroshitsky, it was attacked from both sides by Soviet tanks. While Mishchenko's tankmen followed close on the enemy's heels, from another sector a tank unit under Lt. Colonel Molchanov crossed the river during the night and by noon reached the area that the retreating Germans had intended to make their destination.

The Nazis tried to avoid battle but were hindered by Soviet infantry, which forced the Nazi motor column to stop and fight. In less than an hour of battle, over about 12 square miles of ground, the Germans lost 10 Tigers, 8 Panthers, 2 artillery batteries, 200 lorries, hundreds of soldiers and officers killed, and 400 prisoners.

#### PURSUIT NORTH—TEMPO AND CHARACTER

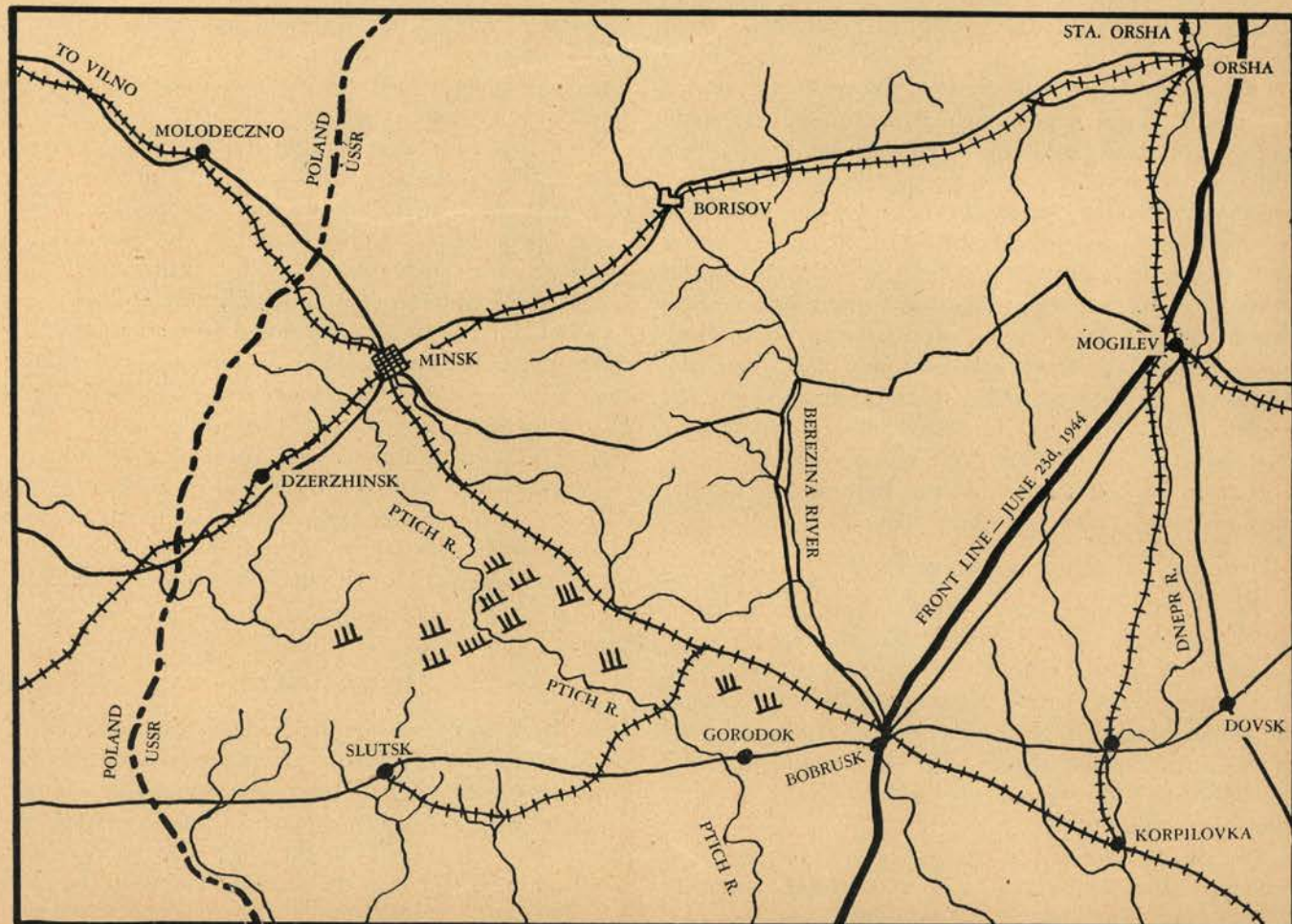
Their main force routed and their reserves insufficient

to give them any respite, the Germans began a disorderly retreat northward.

Just then the tank commander received word that close to 1,000 German soldiers and officers were concentrated in a near-by forest. Dispatching a detachment of tanks to deal with this group, the commander directed his main column of tanks to continue to push forward.

This decision was correct, because during pursuit it is essential to keep in contact with the main group of the enemy and smash it. These double attacks and relentless pursuit resulted in the enemy's loss of a greater part of his tanks and infantry detailed to cover the Minsk northern flank. As a result, the Germans finally had to abandon their intention of a protracted defense of Minsk, and instead attempt a further retreat northward toward Molodeczno.

Careful analysis should be made of the character of a tank pursuit under modern conditions of war. I mentioned before that these tankmen had been engaged in battle both day and night for several days—but even when their efforts were rewarded, they could not afford to rest. It might be supposed that having achieved their objective, they had the right to expect at least a brief respite. Instead, they continued the pursuit at the same tempo previously mentioned. The reason for this is obvious. Despite the long distance dividing the tanks from the infantry, the tanks were







Soviet tanks pass the government building in Minsk, capitol of Belorussia, which the hastily retreating Germans did not have time to blow up or burn.

Sovfoto

the only force that could deal a final blow to the demoralized enemy units.

Under the circumstances, it was only natural that the Red tanks continue in pursuit of the foe, and toward dusk the Germans were again overtaken. With one infantry regiment and about 20 tanks they attempted to check the advance of the Russian tanks, but without success.

Soviet forces continued to drive forward in spite of the growing darkness, and near a certain stream a fierce night battle developed. While the Germans were trying to get their motor transport across a shaky bridge, the Soviet tanks (with their better traction) succeeded in by-passing the bridge on both sides. Then as the enemy began withdrawing his tanks, the bridge collapsed. Two Tigers, which attempted to wade across, got stuck, and the Germans had to abandon them as well as some ponton parts.

About this time, in another sector along the route of the disorganized retreat, the Germans made another last attempt to hold their ground. Soviet tanks, out on reconnaissance, reported the enemy's intentions, and toward morning the Germans were attacked from their rear. Sustaining heavy losses in men and guns, the Germans scattered toward a forest. Here the pursuit ended. Close to 2,000 German soldiers and officers had been killed, 32 tanks and much rich booty captured. In 36 hours the tankmen, fighting incessantly, had advanced a direct route of 54 miles.

#### APPROACH FROM EAST

Meanwhile, other tank units began gradually to close the circle around Minsk and tighten the ring about the German defenders. As a more solid ring was forged, the Germans began showing their anxiety by dispatching part of their tank-artillery-infantry reserves to threatened sectors. The enemy evidently had hoped to stop and wear down the Soviet tank units on the approaches to the city.

On the second day of the attack a tank spearhead unexpectedly approached the town from the east rather

than from the directions where the Germans had expected it. This tank unit under Lt. Colonel Losik, hero of the Soviet Union, crushed the enemy and dashed forward toward Minsk.

In an attempt to stop the attackers in terrain suited for defense, the Germans had stationed tanks along the road about 7 miles from the city. Their object was to force the Soviet tanks to undertake a flanking maneuver where they would get stuck in the surrounding mud and swamps. In this way the Germans had hoped to gain the necessary time to set up their new defenses. The Soviet commander, guessing correctly the German intentions, ignored the possible opportunities for an enveloping movement and decided to fight on the road. This decision was justified, for maneuver is not an aim in itself, but rather a means.

Several machines moved up the highway to reconnoiter. The remainder took cover and after spotting certain dispositions of enemy tanks and self-propelled guns, opened fire. In this battle, Soviet gunners enjoyed all of the advantages. While firing from long range and remaining invulnerable themselves, they knocked out the German armored formation blocking their approach. The Germans were forced to fall back in order to get out of the danger zone, but Soviet tanks moved up again, and the situation was repeated. After several such leaps and bounds, the enemy's flanks became exposed and they began a full retreat toward Minsk. During this engagement, which continued for approximately two hours, the Germans lost not only their favorable defense position but also hundreds of men, 4 self-propelled guns, one tank, and several antitank guns.

#### DECISIVE ASSAULT

As the Soviet tanks approached the town and started preparations for an assault, the German situation became very confusing. Three tank groups threatened to drive wedges in the enemy defenses around the town. The approach from the east, with an excellent highway in its rear, was the most menacing to the Ger-



mans, and they consequently concentrated their main forces there.

At dawn, when advanced units of Soviet infantry and artillery arrived, the tanks renewed their operations. First, a tank reconnaissance party was sent out and returned to report that 12 enemy guns, 2 Tigers, and a strong force of infantry were disposed on the eastern edge of the town. The highway was blocked with antitank pillars, and the narrow passage between the antitank emplacements was mined and covered by fire. At a cost of one tank, the reconnaissance party forced its way through this passage and attacked the enemy concentrated on the eastern boundary. They destroyed several enemy guns and both of the Tigers.

While this reconnaissance party was containing the enemy on the eastern approach, Colonel Losiks' remaining units, with infantry immediately behind them, broke into the town from the northeast. The German antitank group, firing from the flank, were unable to stop the drive of the main tank column. The Germans soon found themselves blocked in the center and their flanks turned. Street fighting then started in the outskirts.

#### SOUTHERN FLANK

Minsk would never have been so swiftly cleared, however, had not a simultaneous tank attack been launched from the south by other units. The day before the attack, these units, still 20 to 25 miles from the town, were biding their time in forests and swamps along the river Ptich. The Germans evidently reckoned that these tanks could not cover the difficult terrain so soon, or, if they did reach the Slutsk highway, they would be stopped by the strong covering detachment there. This reckoning proved fatal for the Germans, for the tankmen passed through the swamps at night and at daybreak attacked the German covering detachment from the rear.\*

\*The account of this tank action was told by Colonel Slesarev in his short article, "Tank Assault in Swampy Terrain," July-August, 1944, issue, THE CAVALRY JOURNAL.

The 3000 men that remained of the German infantry division, along with 7 self-propelled guns and 5 tanks, were driven into a forest and there routed. The Germans lost all of their armored equipment and about 1,000 in killed; the rest were dispersed.

Without stopping to mop up small groups of the enemy, the tanks from the south headed for Minsk. Before long they had cut the last road leading to Dzerzhinsk, and the enemy retreated in utter disorder along the country roads westward. Minsk was in Soviet hands.

#### CONCLUSION

In these battles for the capital of Belorussia, Soviet tanks displayed exceptional vigor and employed a variety of tactics.

The success was due mainly to the speed of the offensive, which at times averaged 25 to 30 miles per day. Meanwhile, infantry often occupied vacant tactical spaces without fighting. During decisive assaults, the infantry kept pace with the tanks even after heavy forced marches. The tasks of tanks and infantry were everywhere clearly defined, and both branches came to one another's assistance in good time.

The attack on Minsk was made from three directions, and the enemy was forced to scatter his forces accordingly. If the enemy strengthened his forces on any one sector, the main assault was shifted to another sector.

The tank battles for Minsk prove that the successful employment of tanks requires a variety of tactical applications. The launching from different directions of simultaneous blows, although often characteristic of operations of small tank groups, is not the only way to break enemy resistance in a town. When tanks attack in force and on a wide front the fate of the town may be determined in its rear. Sometimes a combination of these two methods is possible, as was witnessed in the battles for Minsk. The depth of the tank blows may vary in accord with the character of the terrain and the relative force of the opposing armies.

Sovfoto Radiophoto

Tommy-gunners under cover of tanks clear a forest of Germans in the Baranovichi direction. This town, a rail center south of Vilno and west of Minsk, on the First Belorussian front, was strongly defended by the enemy.





# A Tank Battalion Headquarters—On the March and in the Attack

by Major Charles W. Walson

EVERY tank battalion commander has his own ideas as to how he will mount and employ the various members of his battalion headquarters section on the march and during the attack. The following tables indicate one way in which the members of this section may be mounted. It is to be noted that each vehicle in the battalion headquarters is named according to the functions of the passengers in that vehicle.

On the march, the battalion commander must consider certain groupings in order to obtain the maximum efficiency from his staff. See Chart No. 1.

(1) The command half-track contains the operations and intelligence personnel of the battalion and can function as a mobile CP for the battalion headquarters during the march.

(2) The administrative half-track groups the S-1 and S-4 and their assistants and clerks.

(3) The battalion commander and S-3 ride in a 1/4-ton truck. In this vehicle, the battalion commander can either move with the higher unit commander or he can "ride" the column.

(4) In the majority of cases, the S-4 will be in the administrative 1/4-ton truck and not in column.

During the attack, the vehicles are distributed throughout several of the attack installations as indicated on chart No. 2.

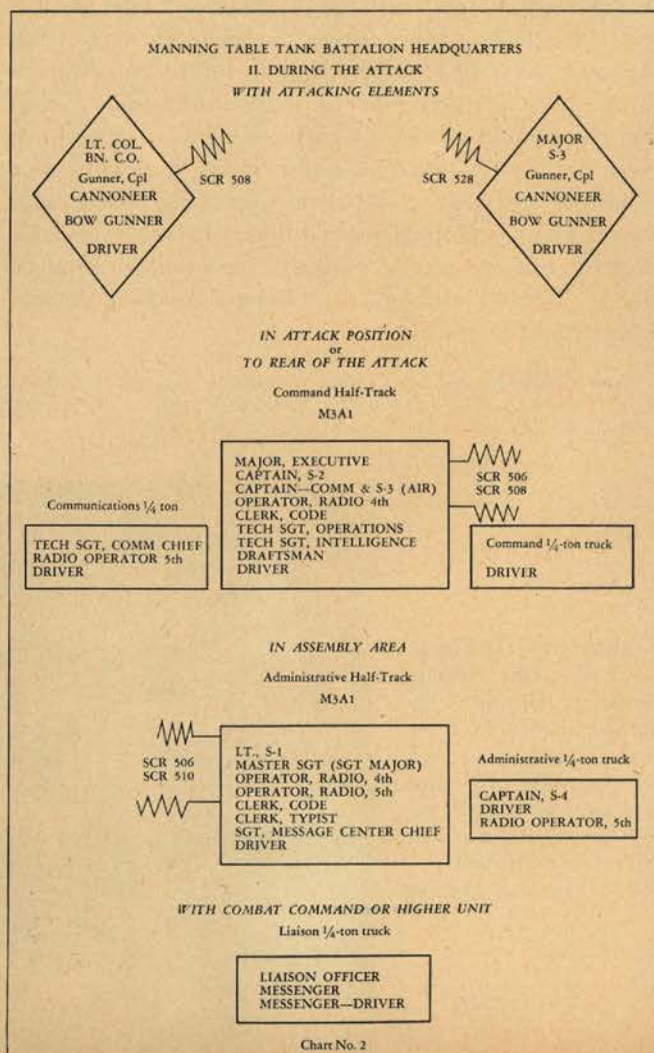
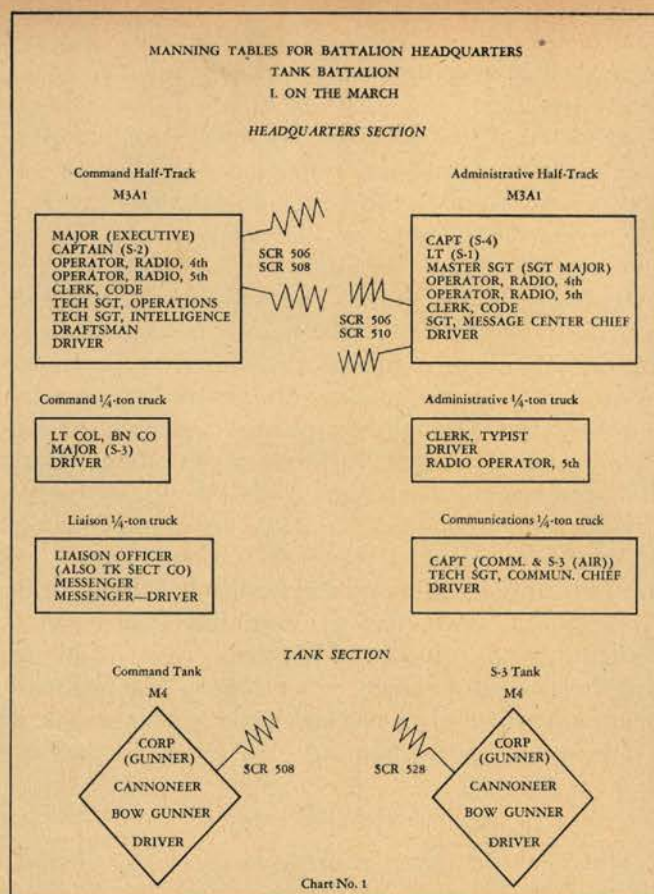
(1) The command tank and S-3 tank are where they are most needed during the attack. They are either at an OP from which the field of battle can be observed or near the head of the support echelon of the battalion.

(2) The command half-track follows the attack from the attack position after enemy resistance has been overcome. It follows the attack by bounds.

(3) The liaison officer is with the higher unit and has to use combat command or other radios to communicate by wireless with his battalion. He visits the battalion command post frequently to maintain the proper liaison.

(4) The executive officer and S-2 are prepared to move forward and relieve the battalion commander and S-3 during lulls or when one or both become casualties.

(5) A complete T/O loading of the command half-track is shown. It is quite probable that a number of the personnel listed as riding in this vehicle will be left at the assembly area so as to provide more room for essential personnel during combat. Since this half-track is a mobile CP, it is necessary that there be enough room for the commanders to assemble for further orders and for proper handling of information.





# Tanks and Tank Destroyers as Reinforcing Artillery

*by Colonel Otis McCornick, G.S.C.*

FOR some time tanks have been used to give close fire support by direct laying for other tanks or infantry. They have been used as artillery support for infantry in many battles.

From experience in combat it became evident that tanks and tank destroyers could be used effectively as reinforcing artillery. The tank battalion is equivalent to 13 4-gun batteries of 75mm artillery. The tank destroyer battalion is equivalent to 9 such batteries. This enormous fire power should not be left idle when tanks or tank destroyers are not in close combat with the enemy.

The primary mission of the tank is to close with and to destroy enemy tanks by direct gunfire.

All tanks, however, are not used all of the time; nor are tank destroyers. Terrain may be unsuitable for tank operation. There may be no enemy tanks to use tank destroyers against. In such cases, why let them lie idle?

## FORCING A RIVER CROSSING

Consider forcing a river-crossing without support of corps artillery. A few tanks, moved up close on the river bank, may be used as direct support. What a mass of fire can be put down by all available tanks of an armored division (39 75mm batteries) and the attached tank destroyer battalion (9 batteries) as reinforcing artillery! Sixteen more battalions of artillery—what a mass of fire! (See Figure 1.)

## ATTACK AND DEFENSE

In an attack a tank battalion may be held in reserve until the very last moment. The attached tank destroyer battalion may also be held centrally in mobile reserve, but if there are no enemy tanks in opposition, that battalion is of no immediate value. The artillery commander, with all of this as reinforcing artillery, could mass a lot of fire. (See Figure 2.)

When required to take up a defense the armored division may present a classic defense—infantry on the line of resistance, artillery supporting, and tanks in reserve ready for a counterattack. Tanks may be used as reinforcing artillery up until the time they are required for launching a counterattack. Tank destroyers may also be used in this rôle. (See Figure 3.)

## TRAINING PROCEDURE

In using tanks as reinforcing artillery, however, it must not be forgotten that their primary mission is to

close with the enemy and destroy him. Otherwise, a powerful offensive weapon has been wasted.

Previous training in indirect fire can be of great value in working out the problems of tanks used as reinforcing artillery. Following is a suggested procedure for training.

Make the platoon the fire unit. The company is roughly equivalent to a battalion but is short in personnel to run a fire direction center equivalent to that of the field artillery battalion.

Conduct fire by axial percussion precision for registration only; by forward observer methods for neutralization only. Limit types of fire to percussion and ricochet. Time fire should not be attempted.

Observed fires for neutralization may be in support of either tank or infantry action.

In firing unobserved fires, limit them to transfer from ground check points. These fires should be prearranged. No attempt should be made to fire other than prearranged missions, as the small fire direction center practicable in the company will not be capable of figuring data rapidly.

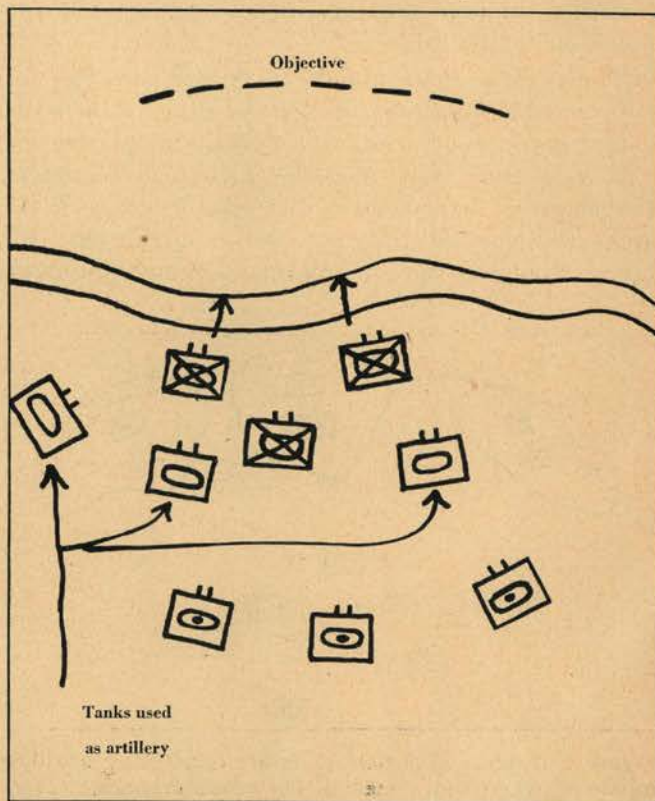


Figure 1. Forcing a river crossing.



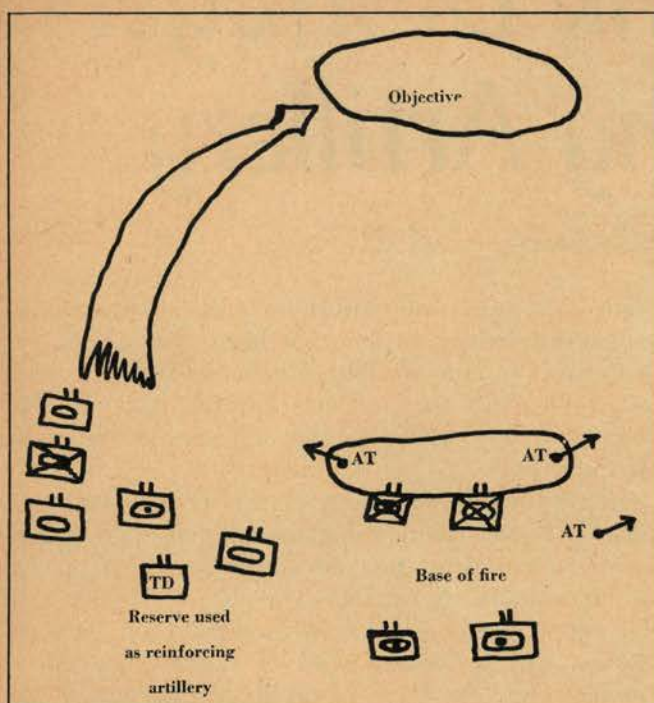


Figure 2. An attack.

In order to coordinate all artillery fires, missions for the tanks and tank destroyers should be assigned by the artillery being reinforced. That is, if a tank battalion in reserve has been assigned a mission of reinforcing a battalion of field artillery, the field artillery battalion commander, in accordance with the general fire plan, assigns fire missions. He selects targets and prescribes the time of firing and the amount of ammunition for each mission.

The artillery locates targets by precise survey of the target area. It will designate position areas for the tanks or tank destroyers. Each tank or tank destroyer company will designate a place mark for each platoon and by simple survey will connect this place mark with the artillery survey and thus tie together all fire units. If time is available, the artillery may designate the place

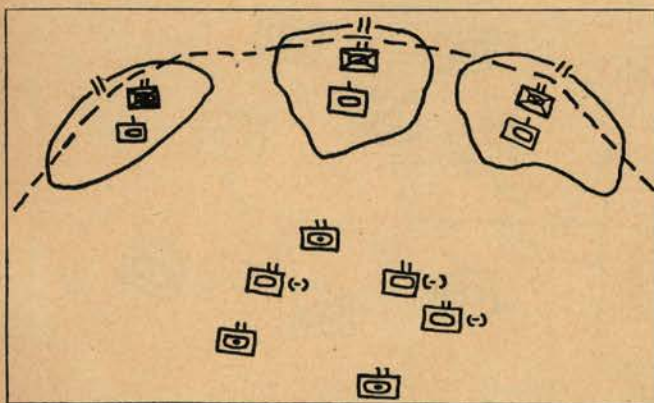


Figure 3. Defense tank battalions fire reinforcing artillery missions when not needed for counterattack. They should fire from reserve positions and should always be ready to perform their counterattack missions quickly.

marks and make the survey. This places a heavy burden on the artillery, however.

The tanks and tank destroyers lay on their targets according to artillery methods. These can be taught very quickly.

The reinforced artillery should be responsible for liaison with the tanks or tank destroyers acting as reinforcing artillery.

#### EQUIPMENT

Additional equipment should be issued about as follows:

Aiming circles—1 per TD platoon (Tanks already have them).

Aiming posts with night lights—2 per tank or TD gun.

CP fire direction set No. 1—1 per medium tank (Co. or TD Co.).

Telephones EE-8—5 per company.

3 miles of wire and axle RL-27 per company.

Telephones will be used for communication as radio silence or interruption precludes use of radio.

#### AMMUNITION SUPPLY

Tanks and tank destroyers must move forward with their full ammunition supply, much of which is armor piercing, whereas high explosive must be used for missions as reinforcing artillery.

Ammunition for all reinforcing fire missions must be dumped on the ground at the vehicle. The vehicular load must be left intact. In some cases the artillery may be able to haul the ammunition. The unit transport can be used for that purpose also. In a pinch all kitchen and personnel trucks can be dumped and those used also. Where a lot of ammunition has to be hauled, additional trucks may be necessary.

#### SUMMARY

Two things must be borne in mind:

*The primary mission of the tank is to close with and destroy the enemy.*

*The primary mission of the tank destroyer is to destroy tanks by direct fire.*

Those missions must be remembered. They cannot be performed unless the crews know how to fire by direct laying, so this is what must be done:

Each member of the crew must know how to aim and fire the gun against both stationary and moving targets. For tanks, they must also know how to fire from a moving tank. The gunner must be expert in this firing and the crews must be perfectly coordinated—must operate like well oiled, perfectly adjusted machinery.

To accomplish this mission training of gunners and crews must be made intensive. Each crew must be able to hit a moving target 50% of the time at a range of 1200 yards.

After crews have passed their direct fire tests, they must be trained for this reinforcing artillery mission.



# SUPPLY DISCIPLINE—

*I desire that you study and remember these notes on supply discipline and use your influence and example to instill in every man the habit of CONSERVING, SAFEGUARDING, MAINTAINING, and SALVAGING food, clothing, weapons, fuel, motor transportation, matériel and supplies of all kinds.*

—BEN LEAR, Lt. Gen., Commanding, Army Ground Forces.

THE experience of our armies overseas has impressed upon them indelibly the importance and necessity of supply discipline. These lessons, learned the hard way, must be impressed upon each officer and enlisted man and never forgotten.

No plan of operations, however good, will succeed unless administration has been emphasized from the start. Supply discipline goes hand-in-hand with military discipline.

In any operation, transportation—whether by sea, rail, motor vehicle or air—will *never* be adequate to meet all requirements.

To request more than you need is inefficient.

To waste what you have is sabotage.

## TRAINING

The training of the individual in supply discipline is as important as any other form of training. Your training program will set aside regular periods for this. Prepare what you have to say, your demonstrations, your practical work, as you would for any other training. The support of the men must be won. Ingenuity will be required. Emphasize the protection of property in guard duty. Remind each man that he is a taxpayer and quote prices.

**Food.** It is a standing order of the Army Ground Forces that no one should help himself to more food than he needs nor leave any on his plate. Greases and bones are used in manufacturing explosives; teach your men the various uses for which garbage is saved.

**Clothing.** Impress your men that a "stitch in time saves nine," and that laundering of socks, fatigues, etc., increases the life as well as the cleanliness of clothing. In battle it is more important to use transportation facilities for ammunition rather than for clothing.

**Weapons.** Teach your men that "for want of a nail a horse can be lost," and that in combat a missing rifle part means not loss of pay or K.P., but immobilization of a weapon.

**Fuel.** Train all handlers of gasoline and oil to avoid spilling a drop when making transfers.

**Motor vehicles.** Have your drivers do first echelon maintenance at stops and periods of waiting instead of only at "motor stables." As long as first and second echelon maintenance is kept up, vehicles will roll.

**"A Unit can go only as far as its supplies will allow."**

**Hygiene and sanitation.** Get your men to observe instinctively the principles of sanitation. The best fighter is no good if he gets sick; unnecessary sickness must be avoided.

Administrative directives are not the sole concern of the supply services. Learn about their contents yourself. It is not sufficient to have a good S-4 or supply sergeant—every man must be something of an S-4 or supply sergeant himself.

## IN COMBAT

The hoarding of supplies and equipment by individuals results in overloading of vehicles and undue wear and eventual breakdown of transportation.

Throwing away prescribed equipment by individuals to lighten personal loads involves resupply at a later date and unnecessary demands on transportation. To prevent this, give thought to confining personal loads to what is necessary for the mission.

The formation of unauthorized reserves and dumps at battery and other positions will result in shortages of supplies where most needed.

To abandon a supply of ammunition, however small, may be equivalent to disarming yourself or your fellow soldiers at a later date.

Vehicles, tools and spare parts are always short of demand. Units which retain more than they are entitled to, prevent the speedy reëquipment of other units.

Cannibalization of tanks and vehicles prevents these tanks and vehicles from becoming available quickly as replacements and disorganizes repair and replacement services.

There must be no unnecessary use of transportation.

Gasoline and oil represent a very large percentage of tonnage to be moved. Trucks and vehicles cannot advance a yard without it. Uneconomical use and spilling is sabotage.

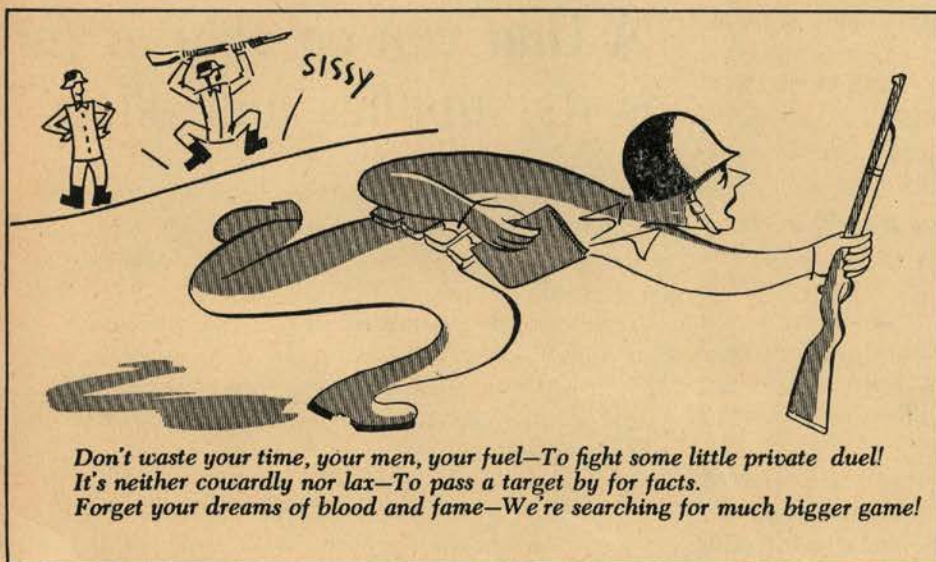
It is of the utmost importance that damaged valuable equipment such as radio sets, weapons and spare parts be salvaged for repair and reissue. New stocks cannot be provided in sufficient quantities without the assistance of efficient salvage.

It is important that captured enemy matériel and supplies of all sorts be reported and brought under centralized control, intact, without pilfering or cannibalizing. Such supplies may prove of the greatest value in planning and speeding an advance.

No matter how hard the fighting, battles will not be won without good supply discipline!

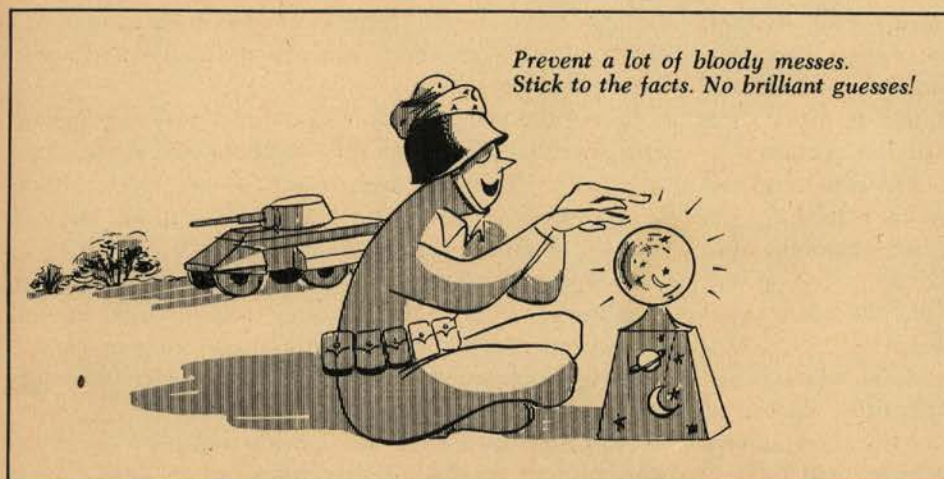
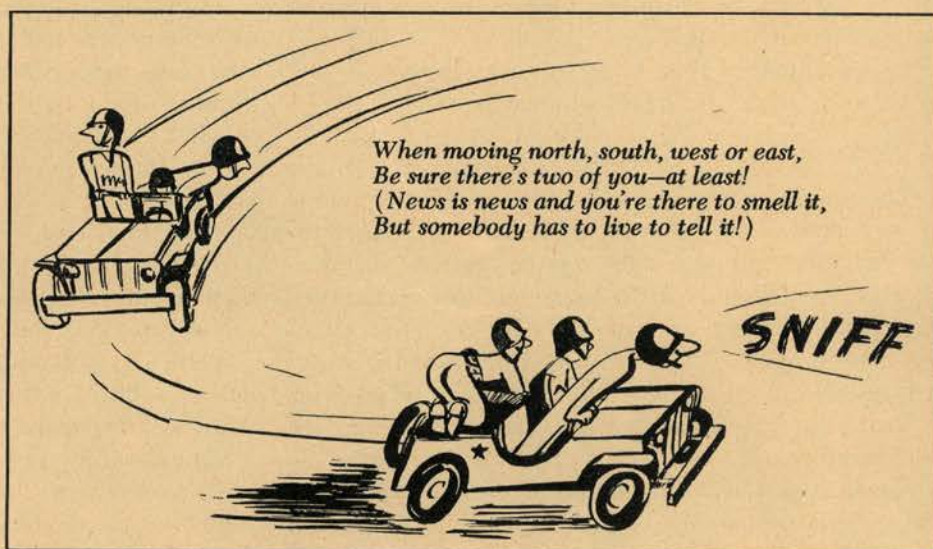


# Reconnaissance—The Eyes and Ears of



Avoid combat, seek to gain information by stealth. Fight only when it is necessary. Dead men make no reports.

Never send out single reconnaissance vehicles—use at least two. The “get-away” man brings back the information.

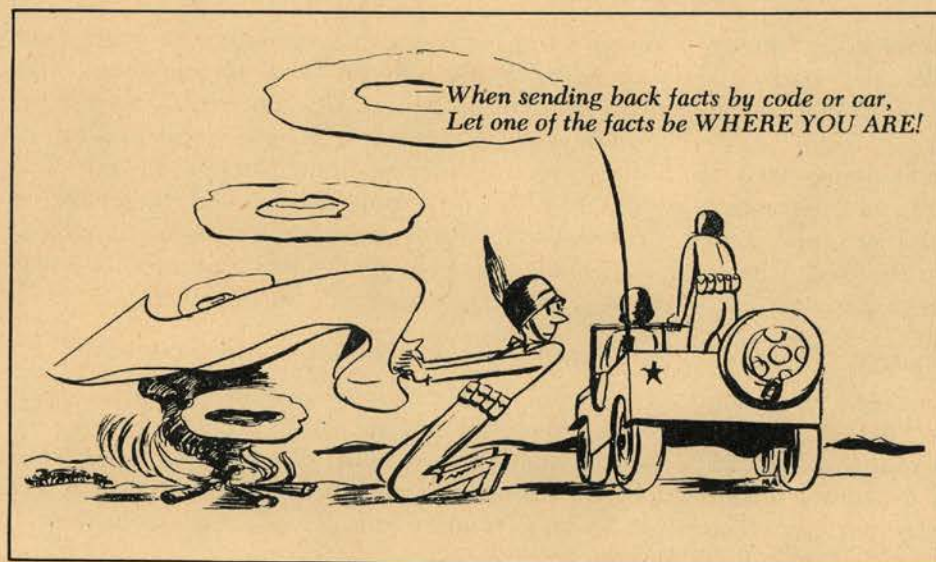


Get the information—but remember—your work is wasted if the information doesn't get back in time to be used.



# the Army

Blindmans' buff is lots of fun--except in time of war. That's why the Old Man sends you out to look his prospects o'er.

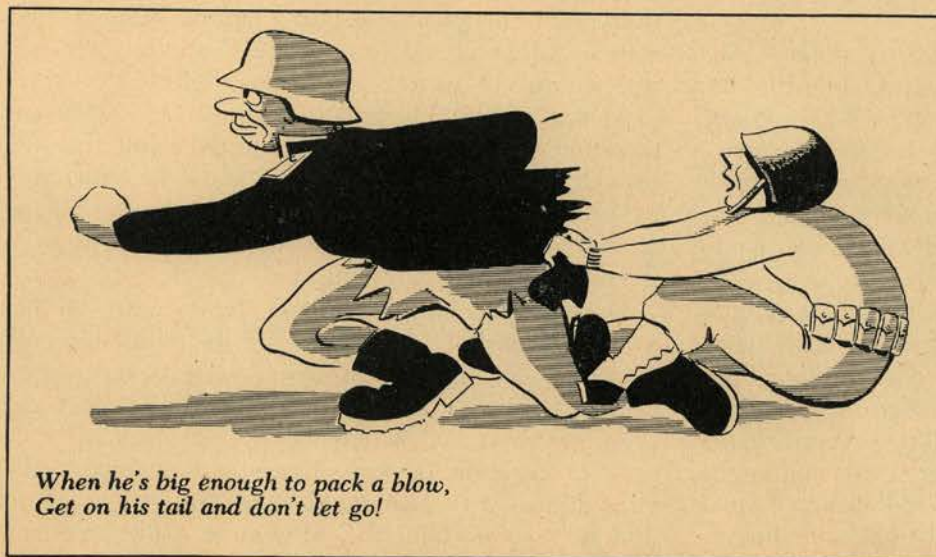


Your location should always be part of every report. You must let the commander know how you're progressing.

To insure the desired results from a reconnaissance mission, your orders must be specific, definite, and complete.



Contact must be maintained with any enemy force which is large enough to interfere with your main body.





# FIGHTING THE UNCOMMON COLD

WHAT the "common cold" is to men, the "uncommon cold" is to motor vehicles—that paralyzing cold of steady, below-zero temperatures so often necessary to cope with in this global war.

The army has now developed an imposing array of winterization equipment to help fight the "uncommon cold." This winterization equipment that is now available will help get vehicles going on the coldest mornings and keep them struggling through the winter.

## WINTERIZATION EQUIPMENT

For general purposes, this winterization equipment is grouped into two general classes. Class A items are termed "improvements to the basic vehicle which will be made on all applicable vehicles for future production." That means that some vehicles may have them already. If they do not, the improvements can still be installed. For example, the brackets needed to install windshield and door port hole covers must be attached to the vehicle as permanent installations, and therefore are called Class A items. The covers themselves, however, are Class B items, or "items which may be quickly and easily installed and which are necessary for vehicles which are expected to operate in sub-zero temperatures."

What should actually be ordered is one of the Winterization Kits, Interim Kits or Auxiliary Cold Starting Aid Kits, depending on the type of vehicle. The Interim Kit, or "quickie" kit, is simplest of all. It is the granddaddy of the other winterization kits, as it has been in common use for a considerable length of time, whereas the Winterization Kit is a much more recent development. The "quickie" kit contains an underchassis heater and a shroud, and all that has to be done when requisitioning is to state the kind of vehicle with which it is to be used. In general, these kits are used for vehicles for which no other winterization equipment is provided.

The Auxiliary Cold Starting Aid Kits, or "slave" kits, are more elaborate than the "quickies," but they are not so complete as the Winterization Kits. "Slave" kits contain heaters, auxiliary batteries and other electrical equipment which is used as an aid to starting in cold weather. Their prime use is for servicing of groups of vehicles which have no specific winterization equipment.

It is the Winterization Kit which will be of most value to personnel operating vehicles in areas where the temperature stays below zero consistently. These kits are very complete, and are designed for specific vehicles. Basic equipment included in a Winterization Kit is comprised of a battery heater, a cab and engine compartment heater and radiator and louver covers—all of which are permanent installations and thus are

always ready for use with a minimum of preparation. Depending on the vehicle, there are numerous other items found in the various kits. Therefore, when requisitioning one of them it will be necessary to look up the listing given in War Department Supply Bulletin 9-16 (SB 9-16), dated 2 March 1944, to find the number of the kit that must be specified for any particular vehicle. Incidentally, this bulletin also lists territories for which winterization equipment will be furnished.

## EQUIPMENT FOR BOMB SERVICE TRUCK M6

Probably the best way to give an idea of the items in the various kits is to cite a few examples of the equipment available for a number of different vehicles. The Chevrolet Bomb Service Truck M6, for instance, is supplied with a Winterization Kit which contains the following items:

- Insulated battery box with heating coil.
- Gasoline heater to heat battery.
- Petcock for bottom of gasoline tank (for easy access to fuel used in the heaters).
- Primer system.
- Engine oil dilution system.
- Crankcase ventilation system.
- Radiator cover.
- Electric windshield defroster.
- Hot water heater (foot-warmer).
- 162° thermostat.
- Fuel pump diaphragm.
- Tarpaulin.
- Underchassis heater.

Before the vehicle is operated it is necessary to warm the oil and the battery to a point where cranking is made easy. This is accomplished by means of the tarpaulin and underchassis heater, which is placed under the crankcase, and the gasoline battery heater, located beneath the insulated battery box. Then the primer system does its job of providing a rich fuel mixture which is injected directly into the intake manifold.

The primer used here calls for installation of a new manifold, designed to accommodate the primer nozzles. In addition, a new accelerator rod and a new metering rod are provided. In some cases, the addition of primer nozzles and a line to the manifold does not require installation of a new manifold.

During operation, the engine temperature is controlled by the 162° thermostat and the adjustable radiator cover, and the battery temperature is kept up by means of a hot water heating coil under the battery and inside the insulated battery box.

After operation, but before the engine is stopped, the oil is diluted with gasoline by means of the engine oil dilution system. Thus the oil is more easily kept in a



# COMMON COLD Winterization Kits For Army Vehicles

fluid state. The crankcase ventilating system serves to take this gasoline out of the oil when the vehicle is next operated and the oil has become warm enough to flow as it should.

## EQUIPMENT FOR THE CHEVROLET 4 x 4

The winterization kit for the Chevrolet 4 x 4 contains much the same equipment as the kit for the Bomb Service Truck. The main difference is that an engine coolant heater is provided instead of the underchassis heater. By starting this heater some hours before the vehicle is to be operated, the coolant is heated to a temperature which warms the engine sufficiently to make starting easier, in combination with use of the other cold starting aids.

The type of heater provided in this case contains a small gasoline burner of the pot type which is fed by gravity from an auxiliary fuel tank. Air for combustion is furnished by the draft produced by a small flue, and installation of this flue, or stack, requires the cutting of a hole in the hood. Templates are included with the winterization equipment manual for use in installing this stack, as well as templates for the reserve fuel tank. This type of heater is lighted with a "torch" and may be burned continuously for periods of hours.

There is another kind of engine coolant heater which operates in a somewhat different manner. In this type, the heater is controlled by an electrical switch from inside the vehicle, and the installation includes a fuel pump unit for supplying fuel from the vehicle's fuel tank to the burner, a blower for supplying air for combustion, an ignition transformer to provide automatic ignition of the fuel, and a motor generator unit (operated by a storage battery) to drive the blower and fuel pump and to supply current to the transformer. Since this heater is much quicker acting than the one mentioned above, it should be burned only for periods of 15 minutes at a time, according to instructions given in the manual.

## SPECIAL POINTS ON WINTER CARE

Miscellaneous equipment includes smaller items, such as plastic windshields for armored windshield slits, ice grousers, half-track idler scraper blades and brackets, and cut-out snow shoes for tractors.

Needless to say, the installation of winterization equipment, no matter how complete it may be, is not a panacea for cold weather operating problems. For, without the proper attention to other phases of operation, no equipment can be expected to perform effectively. Instructions in OFSB 6-11, "Cold Weather Lubrication and Service of Combat Vehicles and Materiel," must be followed faithfully in connection with

the use of winterization equipment. This involves use of winter grade of gasoline and lubricants.

Brushes, commutators and bearings on the generator and starter must be clean. The large surges of current which occur when starting a cold engine require good contact between brushes and commutators. Wiring must be cleaned, connections tightened and all electrical equipment must be kept free of ice.

The distributor must be cleaned and points replaced and checked frequently. Spark plugs must be cleaned and adjusted, and timing must not be unduly advanced or retarded.

Batteries must be kept fully charged, and care must be taken not to add water until the battery is to be put on charge, since added water will stay at the top and freeze before it can mix with the acid, if the battery is not charging.

Brake bands have a tendency to bind when very cold. Vehicles should be parked with brakes released and wheels blocked instead.

Oil lubricated speedometer cables should be disconnected at the drive end when the temperature is below  $-30^{\circ}$ , as they often fail to work properly and sometimes break from excessive drag caused by the high viscosity of the oil with which they are lubricated.

Operation of vehicles on hard, frozen ground causes strain and jolting which may result in screws breaking or nuts jarring loose because of the low temperatures that greatly reduce the shock resistance of metals. All of these items must be checked regularly.

Storage of fuel also requires special attention. Owing to condensation of moisture from the air, water will accumulate in tanks, drums and containers. At low temperatures this water will form ice crystals that will clog fuel lines and carburetor jets unless the fuel is strained. To prevent as much as possible the formation of ice in fuel containers, they should be kept as full as possible, since the more fuel there is in the tank, the smaller will be the volume of air from which moisture can be condensed. Addition of denatured alcohol to the fuel tank each time that it is filled will reduce the hazard of ice formation. Closures of containers should be kept tight to prevent snow, ice, dirt and other foreign matter from entering. Dispensing equipment must be kept clean.

There are many more important details covered in OFSB 6-11 that should be known and practiced—such as parking a vehicle so that it does not face into the wind when there is no shelter available.

Now is the time to get SB 9-16. Allow plenty of time to get the requisitions through and the equipment on its way. Allow time, too, for installation.

Start the new winterization program today and prepare for that "uncommon cold" in advance of its arrival!

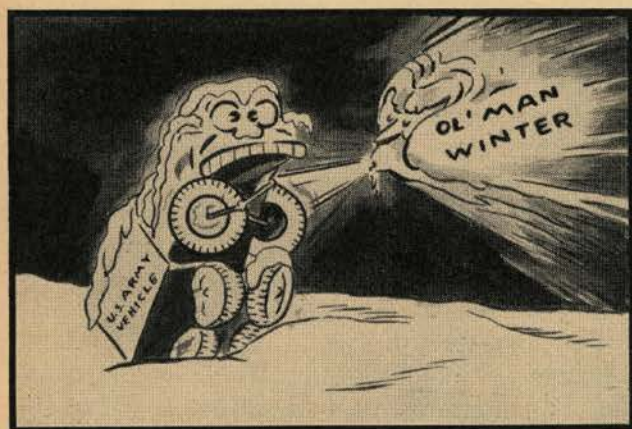


# DOS AND DON'TS ON GLOBAL MAINTENANCE!

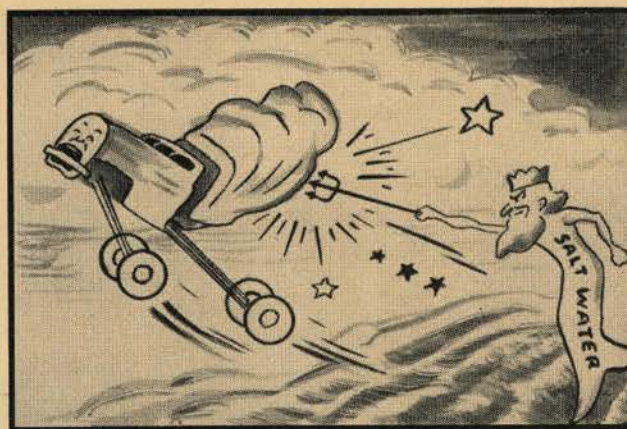
Maintenance is fundamentally the same the world over. But differences of climate and terrain often make it necessary to emphasize certain phases of preventive maintenance. Here are some examples:



**Jungles**—Apply fungus protection, rust preventive, oil and paint as needed. Clean and dry equipment as often as possible.



**Arctic Theaters**—Requisition winterization kits, winter grade lubricants, and anti-freeze early. Check storage batteries, cooling systems, and heating equipment carefully.



**Beachheads**—Guard against salt water corrosion. Keep parts painted and lubricated. Wash frequently with fresh water, and dry thoroughly.



**Torrid Zones**—Inspect temperature gages, thermostats, ventilating systems, and cooling systems. Keep equipment out of the sun as much as possible.



**Deserts**—Clean filters, air cleaners, and screens more frequently. Protect equipment against the ravages of sand and dust by the best storage available.



# Book Reviews

INVASION DIARY. By Richard Tregaskis. Random House. \$2.75.

Out of his experiences with troops fighting in the Pacific, Richard Tregaskis wrote *Guadalcanal Diary*, one of the best books yet published from that area. He joined the U. S. forces in North Africa just prior to the landings in southern Italy. There he studied both British and American troops, military government behind the lines, and active fighting in the most advanced sectors. As a result of his activities he brought back to this country the material for his second excellent book—and a serious wound that delayed publication for months.

Mr. Tregaskis is an analytical correspondent, but by no means a callous one. His accounts of battles, and the men who fight them, are convincing and straight-forward records of facts. His objective treatment of his own experiences as a casualty is a high point of impersonal writing.

The reading public owes a great debt to an excellent neurosurgeon serving in Italy.

✓ ✓ ✓

THE GRAVEDIGGERS OF FRANCE. By Pertinax (Andre Geraud). Doubleday, Doran & Co. \$6.00.

Pertinax has for years been one of Europe's most famous journalists, fearless and clear-sighted. Before the war he was called by the *Manchester Guardian* a man "who usually says today what the French Foreign Office denies tomorrow, but confirms the day after." Faced with a prison term under the Pétain régime, he came to America.

In this exhaustive political history of the years preceding the fall of France, Pertinax turns his penetrating mind to the keen analysis of the characters of the men in power, and hence responsible—the intelligent but weak Gamelin, the appeaser Daladier, the complex Reynaud, the reactionary defeatist Pétain, and their satellites. It is of interest to note that this thorough study corroborates another Parisian's less detailed book, published in 1941, *Seven Mysteries of Europe*, by Jules Romain.

✓ ✓ ✓

PEOPLE ON OUR SIDE. By Edgar Snow. Random House. \$3.50.

Edgar Snow, best known as the author of *Red Star Over China*, has proven again that he has extraordinary perspective and an astute, observing eye to back his able pen.

As a people, Americans probably have less factual information about India, China, and Russia than about many smaller portions of the globe. Mr. Snow does not presuppose that his reader is well versed in the history and character of these nations, but supplies the pertinent information necessary to understand, not these nations, but the discussions about them. In the future many of their problems will affect us, and it is our duty to ourselves to realize the phases through which these peoples have evolved to their present positions in the world.

THE WAR OF 1812. By Henry Adams. The Infantry Journal. \$3.00.

In order to fill the need for an adequate short history of the war of 1812 *The Infantry Journal* secured permission from Charles Scribner's Sons to reprint the relevant chapters of Henry Adams' *History of the United States*.

In a day when reading, as well as every other phase of human life, is streamlined, the average man is wary of attacking a series as formidable as Adams' original treatise. When broken into volumes of convenient size and specific content, the valuable material contained therein is more apt to reach appreciative readers. The publisher has made a definite contribution to a little known period in U. S. history by reprinting this selection.

✓ ✓ ✓

AS A CAVALRYMAN REMEMBERS. By George Brydges Rodney. Caxton Press. \$4.00.

The author was commissioned a first lieutenant in the 27th U. S. Volunteer Infantry after the Spanish-American War. He served in the Philippines and was then discharged. In 1901 he was commissioned in the regular army and returned to Manila, where he joined the 5th Cavalry. He was retired as a colonel in 1932.

Colonel Rodney's reminiscences will not add profoundly to military knowledge, nor are they intended to. They contribute a lightly told account of army life from 1900 to 1930, with frequent interspersions of keen, witty, humor. There is a slight tendency to be sentimental, but this can hardly be considered out of order in a reminiscence.

✓ ✓ ✓

MUCH IN LITTLE ON THE UNITED STATES ARMY. By Ruby Lee Adams. \$1.00.

"Much in Little" very aptly describes this valuable little booklet. It is a chronological record of the military history of our nation with brief comments containing the minimum essentials of names, dates and actions.

✓ ✓ ✓

FOREIGN MAPS. By Everett C. Olson and Agnes Whitmarsh. Harper & Brothers. \$4.00.

In the introduction to this much needed book, the authors have ably described their text:

"This book has been written to meet present-day needs for a concise text and reference on the subject of foreign maps. It includes a discussion of the methods of studying foreign maps, the materials essential to this study, and descriptions and illustrations of representative maps and map series. . . . The organization is such that the book can be used as a text for a course in foreign map reading or as a reference by persons engaged in studies which require the use of foreign maps."

Glossaries, an index, and superb plates and charts complete this latest contribution to the study of maps.



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*A biography of Justice Holmes and his family.*

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THE ARTICLES OF WAR ANNOTATED. By Colonel Lee S. Tillotson, Ret'd. 3rd rev. ed. \$2.50.

COMPANY ADMINISTRATION AND PERSONNEL RECORDS. By Colonel C. M. Virtue. Military Service Publishing Company. 14th ed. Paper, \$1.50; Cloth, \$2.00.

These two books need no introduction to army personnel. They have been revised and brought up to date to meet present-day requirements. The 1944 editions will be welcomed not only by new officers, but by the men whose editions no longer give them the latest information.

1 1 1

MILITARY LAW FOR THE COMPANY COMMANDER. By Julian J. Appleton. National Law Book Co. \$2.50.

In his preface the author states: ". . . it has become plainly evident that the available sources of military law are far too involved for practical utilization by the detachment commander. With high-powered training schedules, night problems, troop schools, reams of paper work and a score of time-consuming details already crowding his day, it is unreasonable to expect the field officer to hie himself to a 'law library'—there to struggle with his military law problems. What obviously is needed is a simple, concise, yet complete handbook covering the part played by the organization commander in the administration of military justice."

The assistant to the Staff Judge Advocate, Camp Sibert, Alabama, has endeavored to meet the need for a simplified guide. He has based his book on the *Articles of War*, the *Manual for Courts-Martial*, and the *Opinions of the Judge Advocate General of the Army*.

1 1 1

OUR ARMY AT WAR. With an introduction by General George C. Marshall. Harper & Brothers. \$3.00.

The story of American campaigns in World War II, as told in official War Department photographs, may be of interest to those who prefer seeing their history to reading it. It covers action in the Pacific and Far East, the Aleutians, North Africa, Sicily and Italy, and the air over Europe.

Many of the pictures are good, but it is felt that a larger percentage of outstanding photos might have been obtained had the choice not been limited to War Department material. The layouts are far from impressive. Pictures bled into one another and unnecessarily split between the two pages tend to confuse the eye. There is still room for a really good book along this line.

1 1 1

THE WESTERN HORSE. By J. A. Gorman. Interstate. \$2.00.

At a time when many older books on horsemanship are being reported "out of print," new and up-to-date books are welcomed in the book department. Major Gorman has written a very good, well coordinated volume on *The Western Horse*—its types and training—including trick training, rodeos, horse shows and racing. Hunting is the only field of horsemanship not touched on.



RIFLES AND MACHINE GUNS. By Melvin M. Johnson, Jr. William Morrow and Co. \$5.00.

Written primarily for the soldier, this companion to *Automatic Arms and Ammunition* is an introductory study of modern military small arms. It is not intended to substitute for manuals on specific weapons, but rather to familiarize the reader with modern weapons other than those normally issued, both Allied and Axis.

More than 60 specific weapons are analyzed and discussed in Captain Johnson's book. The illustrations and photographs are profuse and of excellent caliber. The material is separated into the following categories: clip-loaded rifles and semiautomatic rifles, charger-loaded arms, charger-loaded semiautomatic rifles, automatic or machine rifles and light machine guns, anti-vehicle weapons—calibers .50, .55, 20mm (.78 inch), and submachine guns, carbines, and pistols.

PACIFIC BATTLE LINE. By Foster Haley. Macmillan Company. \$3.50.

THROUGH THE PERILOUS NIGHT. By Joe James Custer. Macmillan Company. \$2.75.

These two books are poles apart in war reporting. *Through the Perilous Night* is a purely personal account of limited action—life aboard the *Astoria* prior to her last battle, during which the author was injured.

On the contrary, *Pacific Battle Line* is an excellent history of the principal naval engagements in the Pacific from December 7, 1941 to November 20, 1943, including landing operations and island warfare. There is only one serious criticism to be leveled at this graphic piece of reporting. It has been robbed of its reference value because it has no index. The chronology published in the back is of interest, but the same space given to an index would have materially enhanced the permanent value of the book.

THE TEMPERING OF RUSSIA. By Ilya Ehrenburg, Knopf. \$3.00.

Unlike Maurice Hindus, Ilya Ehrenburg, one of the most prominent of contemporary Russian authors, is not sufficiently acquainted with the psychology of Americans to be able to write for them to the best advantage. His diary of happenings in the war shows many examples of those qualities of violence and stoicism, oddly married in this half-Mongol people. While the literary portrayal of these traits is not strange to readers of Tolstoi and Dostoevski it cannot be piled on a background of Emerson and Thoreau and be any more comprehensible than Tschaikowsky or Rimsky-Korakov to a palate attune to McDowell. Reduced to fiction, these qualities of character and temperament become more real to the American reader than when merely recounted in short reportorial incidents as in this book.

*The Fall of Paris*, an earlier book by the same author, is apt to find a wider audience than this new volume covering a field already delved into by Hindus and Curie.

Volume III of LEE'S LIEUTENANTS, by Douglas Freeman to be published October 9. Christmas shipping deadline October 15.

## Ernie Pyle's "BRAVE MEN"

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(Show horse breeding and exhibiting)		
Bit & Spur, m., horsey . . . . .	1.50	.15
Bloodhorse, w., thorobreds . . . . .	5.00	.15
Cavalry Journal, b. m. . . . .	3.00	.75
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# Here Are This Month's New Books of Current Interest

As a result of inquiries received in our Book Department, THE CAVALRY JOURNAL is starting a new service. Readers of the JOURNAL are invited to write to the Book Department and give subjects on which they would like lists of authoritative books. Lists containing recognized and new publications, with brief summaries of the text, will be sent at once. Lists of fiction will also be compiled. Books may be selected from these lists for immediate shipment, or at stated intervals.

Any order amounting to \$10.00 or more, regardless of when or where shipped, will be given the 10% discount deduction.

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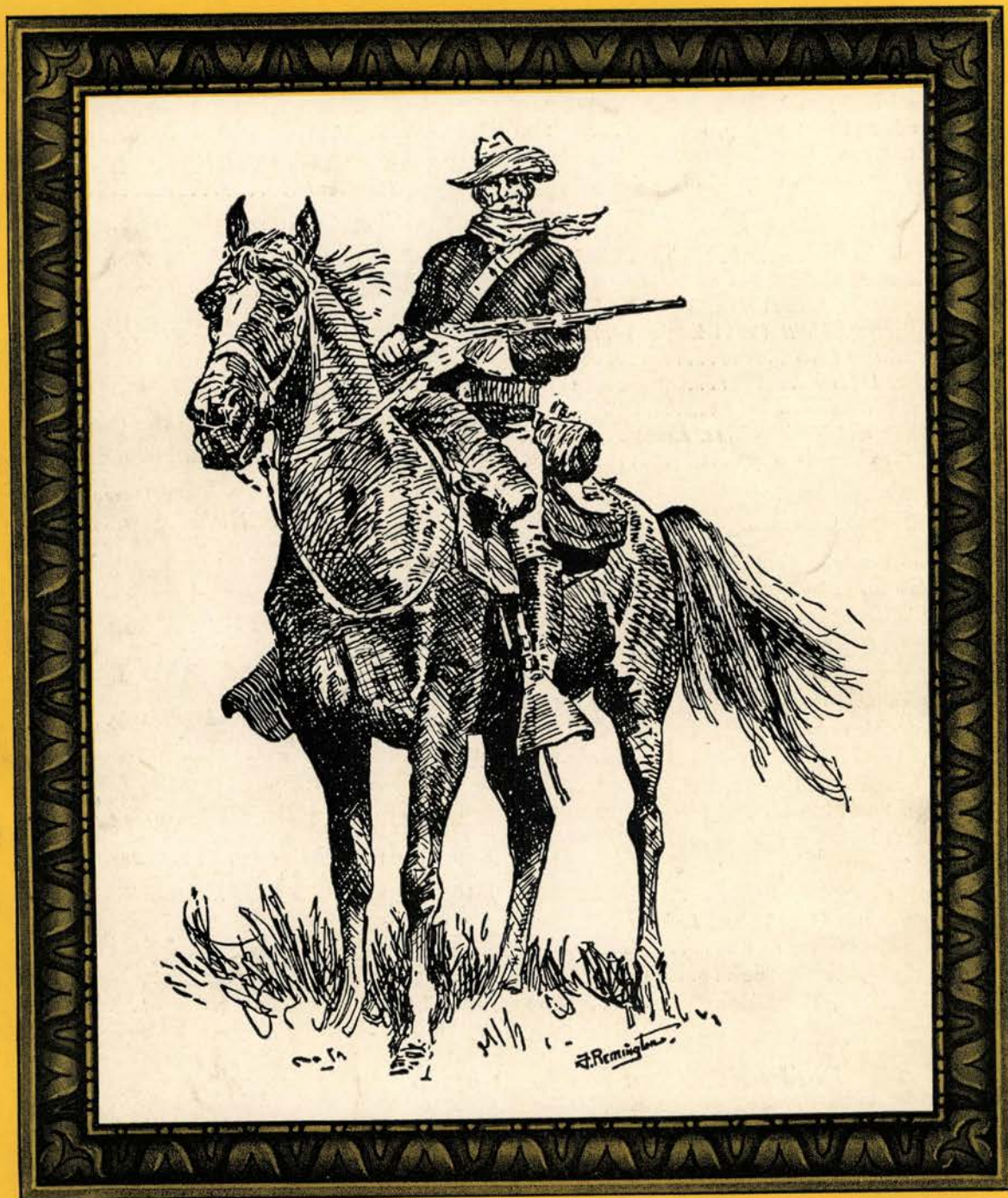
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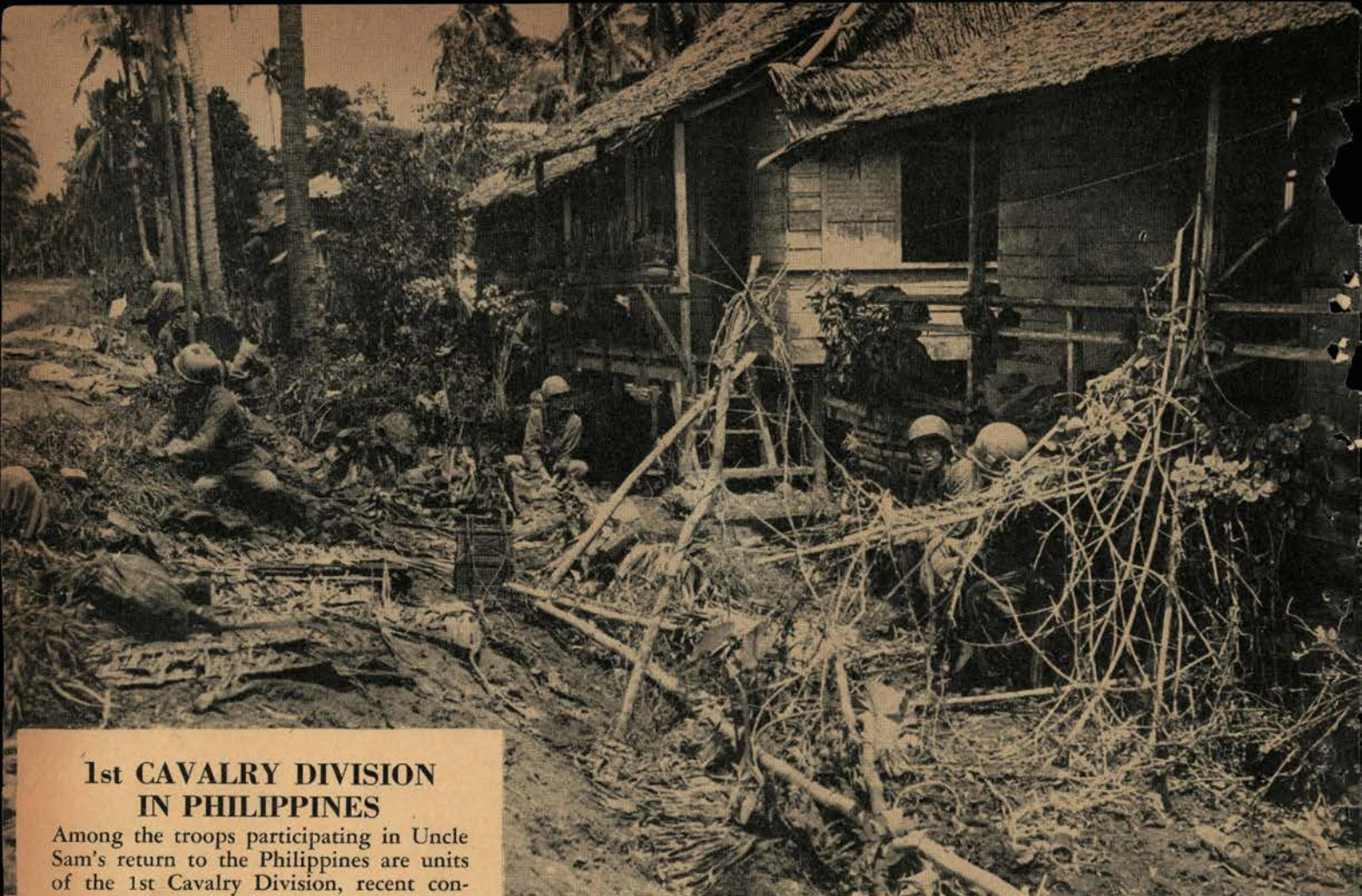
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## 1st CAVALRY DIVISION IN PHILIPPINES

Among the troops participating in Uncle Sam's return to the Philippines are units of the 1st Cavalry Division, recent conquerors of the Admiralty Islands. *Above:* Cavalrymen, advancing along a thoroughfare in the village of Pawing, clean out the last of the enemy from the area. *Below:* Cavalrymen cross a water tank trap, one of the many futile barriers erected by the retreating Japanese on Leyte Island to retard the onslaught of American invaders.





CARDED

# 1st Cavalry Division

## In the Admiralty Islands

**The same troops, whose guidons fluttered westward over the vast reaches between the Little Big Horn and the Rio Grande, now blaze a trail through islands and jungles far across the Pacific**

### PREPARATION

**D**URING early January 1944 the staff of the 1st Cavalry Division convened at Alamo Headquarters to participate in the planning of the invasion of the Admiralty Islands. The first elements of the division which arrived prepared new camp sites, furnished labor at the docks, and underwent meager but intensive jungle training.

Instructions were issued by the commanding general for the staff sections to make a terrain study of the Admiralty Islands, to formulate from all available data an enemy order of battle, to compile logistical data, and to make an estimate of the situation. The commanding officer, 7th Amphibious Fleet was advised and assisted in preparing amphibious training schedules contemplated to begin early in March.

After the GHQ directive was issued for the campaign to take place early in April, planning began in earnest. Frequent conferences were held with the representatives of the fleet and air forces assigned to support the operations. Training became progressively more comprehensive; tempo of the air action became more extensive. The very air seemed to be filled with an effort to outrace time.

Late in February, reconnaissance indicated that areas of the islands were being evacuated, and a radio message implied that the division must be prepared to strike *immediately*. Plans were prepared to make a reconnaissance in force of the Admiralties and to support the reconnaissance force with as many combat elements of the division as available shipping permitted.

### LANDINGS

The stage was set and, on the morning of February 29 the curtain was rent asunder by a devastating naval and aerial bombardment of Los Negros Island. The invasion force which landed immediately following the heavy bombardment was comprised of elements of the 5th Cavalry supported by detachments of 1st Cavalry Division artillery, engineer, AA, medical, signal, and quartermaster units. (See Maps 1 and 2, Page 4.)

The troops quickly secured a beachhead within Hyané Harbor, easternmost harbor of Los Negros Island, near the end of the valuable Momote airstrip, and received their baptism of fire in what the United Press called "one of the most brilliant maneuvers of the war." Only 750 miles from Truk and 1,300 miles from the Philippines, the Admiralties comprise the one remaining link to be closed in the Allies' ever-tightening chain around the Bismarck Sea. The severance of the only remaining line of supply to Rabaul and Kavieng, those two much-heralded, impenetrable bastions of the enemy's defensive system, left 50,000 "Sons of Heaven" to starve, die or rot.

This masterful strategic stroke, combining perfectly coordinated air, land, and sea attacks, caught the enemy completely by surprise. William Courtenay of the *Sunday Times*, London, states, "They (the Japs) had evidently regarded the prolonged air attacks upon Rabaul as a prelude to invasion there, and turned their backs on the Admiralties. Also, when they began to fear that there might be an attack upon the Admiralties, they concentrated their strength and guns around Seeadler Harbor and the north side of Manus Island, at the former seat of government, Lorengau."

Supporting naval forces of a destroyer squadron remained off-shore during the entire operation and, on call from the forces ashore, delivered devastating barrages. Their support of the ground forces was a very material factor in the success of the operation. During the initial approach, gunfire from the destroyers silenced hostile batteries of machine guns and 25mm guns, which were delivering effective harassing fires against the landing craft passing through the narrow harbor entrance.

Although heavy rains greeted the landing force, casualties were described as "light." Up until midnight no organized enemy counterattack had been offered; opposition was confined to sniping and attempted infiltration through our perimeter.

At the close of the first day, the landing force had secured the beachhead and had seized the Momote Airstrip, including dispersal areas. The assault was





Map 1. Encircled area shows strategic Admiralty Islands. Note relation to Rabaul, Truk, Palau, and Philippines.

suspended in order to establish a defensive perimeter against the numerically superior enemy force. (See Map 3.)

#### ENEMY COUNTERATTACKS

On March 1, during early morning darkness, the enemy attempted his first counterattack against our lines around Momote Airfield. Slight infiltration and spasmodic in-fighting occurred all night. In an obvious attempt to drive our forces back from the drome, the Japs made a desperate predawn attack but were repulsed with heavy losses.

Daybreak saw the 5th Cavalry mopping up remnants of enemy infiltration and consolidating its own positions. General Chase's troops were carrying out the instructions of the commander in chief, "You have all performed marvellously. Hold what you have taken, against whatever odds. You have your teeth in him now. Don't let go."

The Japs' second try at cracking our lines gave evidence throughout the night that the fight was on, and that a determined enemy was trying to break through no matter what the price.

On the following day the original landing force was reinforced by the remainder of the 5th Cavalry, landed from LST's on the side of the site of the original beachhead, after enemy positions opposite the American perimeter had been strafed by B-25's flying at tree-top level. The first evidence of the highly propagandized enemy air might occurred when two enemy planes

made a sneak raid on the landing beach with no damage or no casualties resulting.

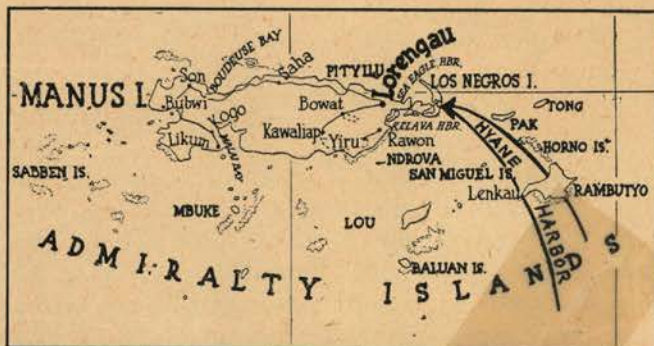
The newly arrived troops, who had been quickly unloaded with equipment and supplies, were briefed on enemy tactics, and prepared to enter the fight. The perimeter was extended to cover the entire eastern edge of the airstrip. During this entire period no enemy naval reaction had occurred. Our destroyers continued to patrol the eastern coast of Los Negros at will and shell targets on call from shore. As the landing ships, which had brought in the reinforcements pulled out, however, they met enemy fire from south of Hyane Harbor entrance.

#### JAP NIGHT ATTACKS

That night repeated Japanese attacks against the North and northwest sector of the 5th Cavalry lines helped add to the enemy's steadily increasing casualties. The Japanese had apparently determined their scheme of maneuver and the sector on which the main attack was to be launched. Repeated failure of their relentless night attacks evidently did not change their minds. They continued hammering away at the same point in a gigantic, all-out effort to break through the perimeter. Their foolhardy, unrealistic determination proved expensive. Their failure was indeed the turning point in the campaign. From that time onward the coordinated attacks of the cavalry drove the Japs backward continually, incessantly, never allowing them to get set, until at the end, the bulk of the enemy force lay prostrate on the field of battle. The scattered, ineffective remnants were left to live like animals in an inhospitable tropical jungle.

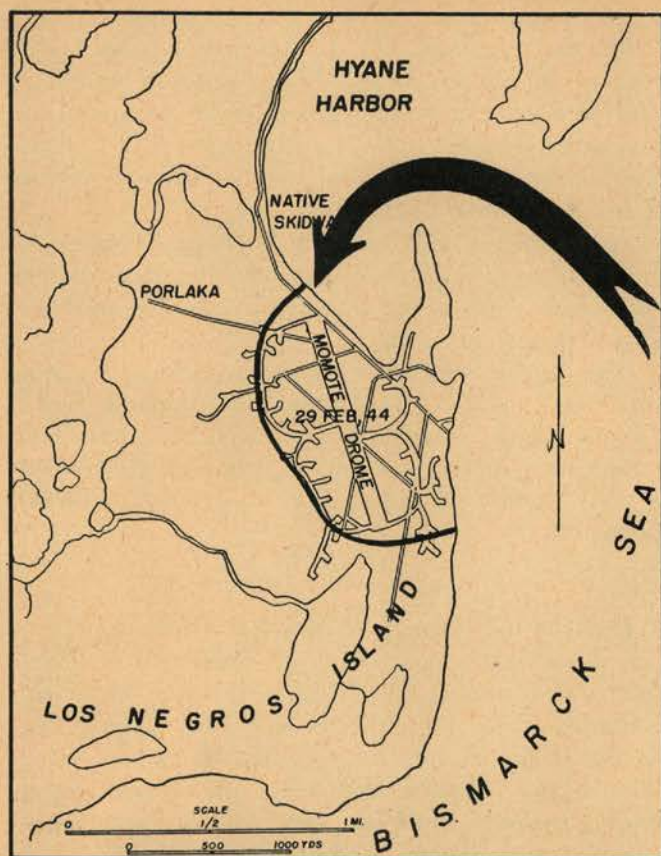
Shortly after noon on March 3, supported by a 75mm howitzer battalion which arrived with the support echelon, our forces attacked and extended their perimeter. The extreme western taxiways and revetments of the airstrip, previously the enemy's front line, were occupied by the advancing 5th Cavalry. At nightfall these newly occupied positions formed the outline of an enlarged perimeter.

By midnight the Japanese counterattacked and penetrated the northern sector of the perimeter as far as the airstrip. The defense of this sector had just been assumed by the newly arrived units of the 5th Cavalry.



Map 2. Arrow points to Hyane Harbor, Los Negros, where elements of the 1st Cavalry Division landed February 29.





Map 3. Close-up of Hyane Harbor and Momote Airdrome. Black line is perimeter of defense at close of first day.

Their first night on this isle was a far cry from the storied versions of languid tropical nights bathed in soft moonlight and covered by a peaceful, serene, star-studded sky.

The Jap began to use some of his widely publicized ruses, frequently drawing our automatic fire by catcalls and noises, then attempting to exterminate our positions by chattering machine guns. One desperate charge was made by a force running and singing "Deep in the Heart of Texas," apparently trying to give the impression that they were having a good time. When the shooting was over 100 dead fanatics were counted near one revetment.

During the night, the Japs tried another favorite trick when they tapped the phone wires connecting the mortar batteries with our forward observers. A clear voice in perfect English called, "For God's sake, lift your fire; you're hitting your own troops." Unfortunately for the Jap, the party on the other end of the line was wise to the ruse, and called for an even heavier concentration.

Corporal Bill Alcine, *Yank* staff correspondent, accompanying the 5th in the landing, offers the following story:

"The dead Japs were big men, Imperial Marines, and fresh troops. All were in good condition and well equipped, cool, tough and smart. A large number of them could evidently speak English."

By the early hours of March 4 Japanese night attacks

had reached a point of desperation, and our successful defense, especially on the northern sector by that part of the 5th Cavalry which had landed only the day before, obviously left the enemy forces seriously depleted. Following the wild attacks Jap carcasses were piled up three and four deep in front of the cavalry position.

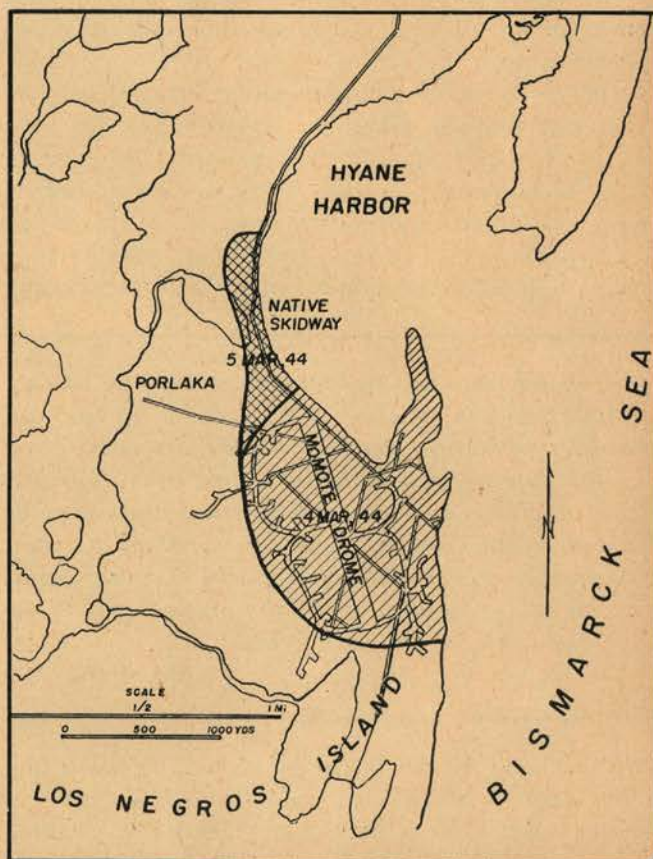
Just before noon elements of the "Gary Owen" 7th Cavalry landed at Hyane Harbor, and were sent immediately to relieve the 5th Cavalry units which had been in combat continuously for 4 days and nights.

#### EXTENDING THE PERIMETER

An attack north along the causeway, planned for the following morning (March 6), was to be supported by elements of the 12th Cavalry, scheduled to land early that morning. But the division commander decided that it would be advisable to clear the causeway before the arrival of the 12th for fear the enemy might repair their damaged bunkers during the night and be strongly entrenched by morning. The general thereupon directed an immediate attack to the north, and by dark the ground north and west of the airstrip was firmly secured. (See Map 4.)

Meanwhile, patrols from the 5th Cavalry scoured the extreme southern end of the island and west toward Porlaka in preparation for an attack against the latter place the next day.

Concentrated enemy mortar fire continued all night



Map 4. Checked area indicates region of attack north along Native Skidway in preparation for landing of 12th Cavalry.



long, but a definite lull in enemy counterattacks in force had taken place. Our forces were now in a position to drive an ever-widening wedge, split the enemy's forces, and effect a clearance of Los Negros.

On the morning of March 6, the 12th Cavalry landed ready for battle and immediately moved northward to pass through forces of the 7th Cavalry advancing toward the Mokerang peninsula. These combined forces succeeded in clearing Salami Plantation and in securing an excellent beach in Seeadler Harbor for the landing of the remainder of the division. This action precluded an unwieldy and perhaps disastrous congestion in the restricted beachhead at Momote. A new base for vigorous offensive action against fortified garrisons was established on the south side of Seeadler at Salami.

A *Yank* staff correspondent gives the following description of the advance over the Skidway for Salami Plantation: "Eager for a fight, the men stormed through the sniper-infested territory, averaged an incredible 3½ miles an hour, arrived at Salami at 1630, and then established a beach where LST's carrying other units of the division were to arrive later."

In the attack to capture a bridgehead at the landing beach on Salami Plantation, the cavalrymen discovered that the Japs had again been taken by surprise and caught with their backs turned. All fortified positions, including machine guns and heavy weapons, strongly dug in, faced toward Seeadler Harbor in anticipation of an amphibious landing. The enemy was unaware of the direction of attack until the cavalrymen had moved in on top of his defenses and quickly wiped them out.

The Japanese battalion, known as the Iwakami Battalion, in position along the Native Skidway, lost 600 of their strength, and the remaining 200 were directed to retreat to Papitalai Mission. Our advancing troops encountered most of the remnants of this battalion, together with about 100 other miscellaneous troops, desperately running into the water in an attempt

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*"General Marshall has sent me a message of congratulations on the skill and success of the Admiralties operation, and expressed his admiration for the manner in which the entire operation was handled. He requested that his congratulations be handed on to General Krueger, General Kenney, Admiral Kincaid, and particularly General Swift and his officers and men for the magnificent showing they made in the first fight.*

*MacArthur."*

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to reach the Papitalai beach by swimming and using native canoes. So disorganized was their retreat that many of the panicky Japs were frantically paddling their canoes with their hands, not having had time to secure paddles from the beach and from the native

huts. No more than 80 of this unit reached Papitalai.

On their advance west of Momote airstrip toward Porlaka our troops uncovered large stores of equipment and provisions, including quantities of Japanese beer and sake. The beer was quickly disposed of. So was the sake, but in a different manner; the cavalrymen didn't think it very palatable.

As soon as the 5th Cavalry had occupied Porlaka, the Jap positions at Papitalai Village and Papitalai Mission, 500 yards west across the strait, were bombed and strafed by our air units.

The Japanese position there constituted a serious threat to a rapid culmination of the campaign on Los Negros Island. If given time, the enemy could easily render his position, protected as it was on the front by a wide expanse of unfordable water, well nigh impregnable.

#### AMPHIBIOUS LANDINGS

Early on the morning of March 7 a volunteer patrol was dispatched to gain vital information in sufficient time for an attack to be launched before the enemy could reorganize, regroup and deploy his forces to meet it. The reconnaissance force crossed the strait between Porlaka and Papitalai Village in rubber boats, under hostile fire and gained knowledge of the disposition of enemy troops, which enabled us to press our attack successfully. (See Map 5.)

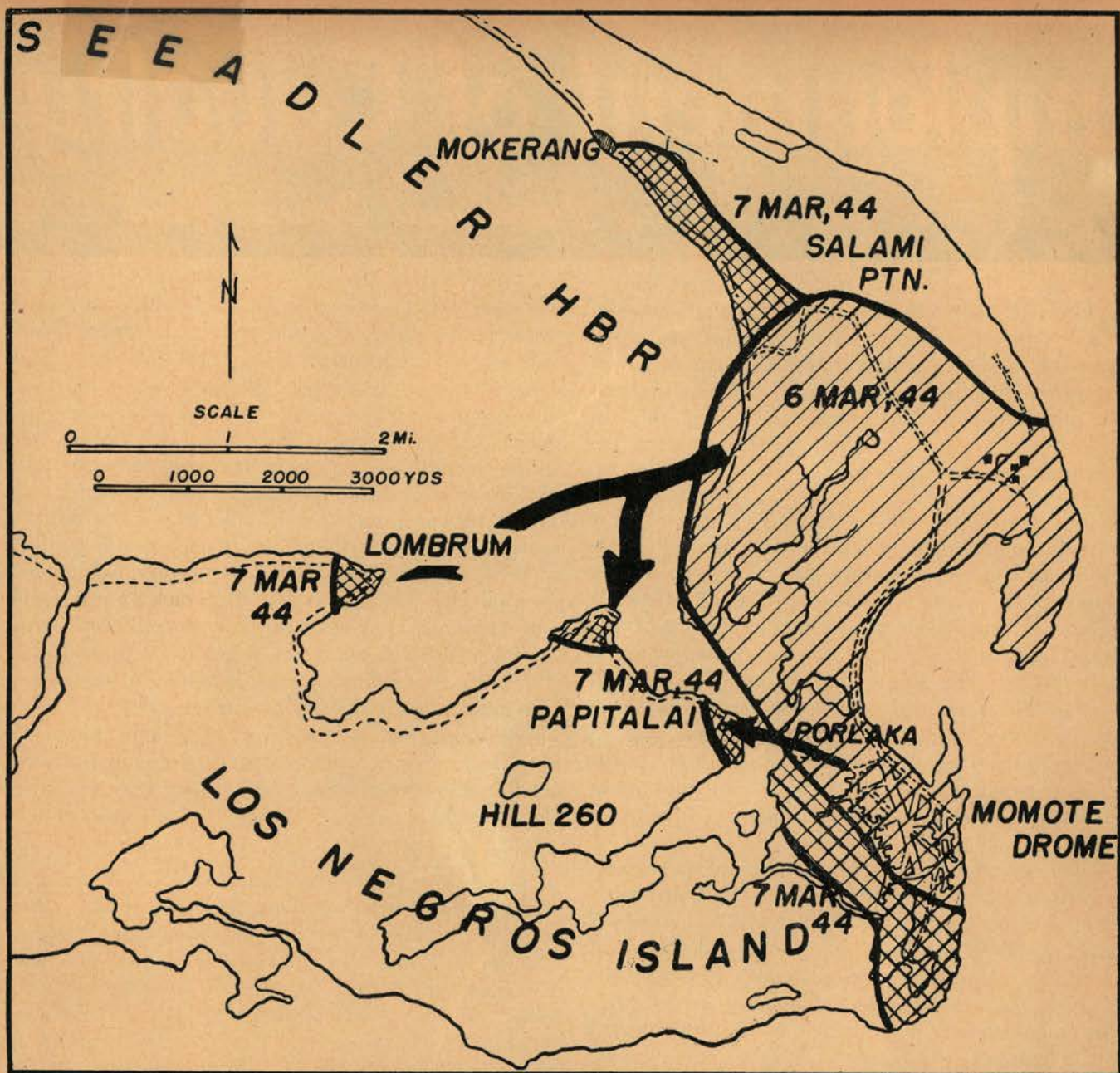
The approach to Papitalai Mission Station was made in amphibious tractors. Upon reaching the beach, an advance patrol located a trench in which an enemy machine gun crew was lodged and, by killing the occupants, enabled the remainder of the platoon to occupy the beachhead without casualties.

Withstanding a severe counterattack, the platoon held the beachhead against a numerically superior force which was striving determinedly to drive the cavalrymen back into the sea. Its ability to hold that line for almost an hour before supporting units could be placed on the shore was the difference between a slow, steady, methodical performance and a brilliant overwhelming success.

Following heavy mortar and artillery barrages, which literally flattened the ground and coconut trees on Papitalai Village and Papitalai Mission, additional elements of the 12th and 5th Cavalry landed from rubber and canvas assault boats. Large quantities of supplies and a well-equipped hospital were captured.

In the afternoon, units of the 7th Cavalry moved over water and occupied Lombrum Point. These actions secured two additional critical terrain features from which the Japs could make untenable the greater portion of Seeadler Harbor and render any landing in the Salami Plantation area extremely costly. The areas now occupied were Salami Plantation, Mokerang Plantation, Papitalai Mission, Papitalai Village, Porlaka, and the greater part of Momote Plantation on the southern end of Los Negros.





Map 5. By end of the eighth day an airfield had been captured, the island cut in half, new beachheads established and Seeadler Harbor secured. Landings at Papitalai and Lombrum were made by elements of 5th, 12th and 7th Cavalry.

#### MOPPING UP

The following day our troops advanced 800 yards west of Papitalai in their drive to mop up the remaining Japanese strong points on the island. Daylight operations consisted mainly of patrolling, while intermittent enemy attacks occurred during the nights. Mortars and artillery concentrations were constantly placed on enemy positions located by the patrols. Large numbers of enemy dead, evidently from this supporting fire, were found. Strong opposition was met by one patrol attempting to reach the high ground commanding Papitalai Mission but the rate of enemy casualties continued to mount.

The enemy's disorganized retreat under heavy fire during the next several days degenerated into a rout and the cavalry had an opportunity to consolidate the

territory now occupied and disperse patrols in all directions. Large dumps of Jap food and equipment, abandoned intact west of Papitalai, indicated his hasty withdrawal. The first prisoner of the 1st Cavalry Division's campaign in the Admiralties was captured in this area by a reconnaissance patrol.

In order to intercept the Japanese retreating westward from Papitalai, elements of the 7th Cavalry pushed inland from Lombrum Plantation.

On March 9 the commander of the 1st Cavalry Division watched the "grand opening" of Seeadler Harbor, as a convoy of LST's, escorted by men-o-war, glided through the northern channel to the harbor. Aboard these ships were the remaining units of the 1st Cavalry Division, prepared to finish the conquest of the Admiralties.

(Next issue: Conquest of Manus Island.)



# Employment of Cavalry A

*by Lieutenant Colonel Paul L. Burke*

ACTUAL experience has shown that judicious use of both advocated methods of employment will invariably prove the value of the M-8 assault gun in terrain ranging from close-packed hedgerows and narrow sunken roads, to open plains and rolling hills. Instances cited are presented for illustration only. The conclusions are for the reader.

## DIRECT FIRE EMPLOYMENT

In this organization, when the situation is fluid, assault guns and tanks are most often employed in close support of the reconnaissance troops. Under these circumstances, one platoon of assault guns and one platoon of tanks is normally attached to each of the reconnaissance troops. The assault guns are employed in the main for direct fire at targets of opportunity on the respective troop front rather than as a mobile pool for indirect fire in general support of the squadron. In this manner, timely fire power of the assault guns is immediately and always available to the units which need it most.

Conversely, the vulnerable assault guns are provided with security through their proximity to the reconnaissance elements which they support. In many cases, it is this margin of fire power which can and does break a stalemate and turn the tide of battle. How well this theory works in practice is evident from the following illustrations chosen at random from three consecutive days of activity.

September 6:

1st Platoon (2 M-8 tanks with 4-men crews), attached to squadron headquarters, used covering fire methods in the vicinity of Rienne, Belgium, and by direct fire caused heavy casualties among foot troops.

2d Platoon, attached to Troop C in the vicinity of Louette St. Pierre, Belgium, engaged a German Panzer Kw VI (Tiger) tank with direct fire at 2,800 yards.

\*Executive officer, "X" Cavalry Group (Mecz), Western Europe.

## "X" CAVALRY GROUP (MECZ)

How can cavalry assault guns be employed most effectively against the enemy? Answers to this question produce two schools of thought from officers of "X" Cavalry Group—the "direct fire" and the "indirect fire." Both theories are equally justified by results achieved in continuous combat with the enemy in Europe since June 6.

One assault gun, covered by the second, blew off a track with the first HE round and registered a direct broad-side hit with the second round—an HE AT shell. This latter round set the Tiger tank on fire, causing it to blow up within a few minutes. Similar tactics were employed later in the day in the vicinity of Gedinne, Belgium. In this case, an enemy half-track personnel carrier was observed just as it pulled into position. Two enemy crewmen, engaged in camouflaging the vehicle, were destroyed with the vehicle by the assault gunfire.

While attached to Troop A in vicinity of Membre, Belgium, the 3d Platoon took up a direct fire position under cover of darkness on the crest of a hill overlooking an enemy 150mm rifle position previously located by a Troop A reconnaissance patrol. At first light, one assault gun fired on the position while the second gun covered. Infantry, moving through the position later, found 38 dead, a number of wounded, and the enemy gun and a half-track vehicle behind the gun position completely demolished.

September 7:

The 2d Platoon, while attached to Troop C, covered roads leading to and from Our, Belgium, while a reconnaissance platoon moved in to reconnoiter and outpost that town. An enemy self-propelled 57mm gun and half-track vehicle were destroyed by direct fire at 1,800 yards when observed approaching the town from the opposite side. In the vicinity of Maissin, Belgium, identical tactics were employed. Here, both guns opened direct fire on two heavy ration vehicles and a third, smaller enemy vehicle. During this action, 6 Germans were killed and three were captured as a direct result of the assault gun fire.

The 3d Platoon was outposting Troop A command post in the woods along the main road leading out of Paliseul, Belgium. The town was under mortar fire and a platoon of Troop A plus an infantry complement was moving on the next town. The assault guns changed position to engage two enemy half-track personnel carriers moving into the town from another direction. Both of these vehicles were destroyed by direct fire at 100 yards. There were many observed enemy personnel casualties. One enemy self-propelled 150mm gun, attempting to move into Paliseul through a back trail was engaged with direct fire at 300 yards. A direct hit on the recoil cylinder of this gun knocked it out of action and forced its crew to abandon it.

September 8:

While the 1st Platoon was attached to Troop C,



# Assault Guns



Signal Corps Photo

Members of a cavalry reconnaissance unit move their M-8 assault guns into position to fire on retreating Germans near Heure-La-Remam, Belgium, only one and a half miles from the Netherlands border. Picture was made September 9.

during an advance on the village of Villance, Belgium, the reconnaissance elements were halted by heavy mortar fire. Locating the enemy observation post on the crest of a hill, the assault gun crew immediately opened fire and knocked it out. The mortar fire ceased and the platoon was able to move on. This was repeated on the other side of the village when the same assault guns knocked out an enemy machine gun nest so that the reconnaissance elements could again advance. Later, on the same night, elements of Troop C were stopped by a road block, with covering enemy fire by bazooka, machine gun, mortars, and artillery. Our assault guns laid direct fire at enemy gun flashes. This counter fire permitted the reconnaissance elements to withdraw safely. Next morning, infantry and reconnaissance elements in that area found 4 destroyed enemy half-tracks and 11 enemy dead as the result of the 75mm fire of our guns.

## ADVANTAGES OF INDIRECT FIRE

Although the assault guns may be employed very effectively for direct fire, certain of these "direct fire" missions can be accomplished as well by indirect methods of fire, with a great deal less risk to personnel and equipment. Points in favor of employment for indirect fire are:

1. The entire fire power of the assault gun troop may be brought to bear on a single target.
2. The assault gun troop is able to cover and support the entire squadron front and possibly its flanks.
3. The guns are not exposed to enemy fire and obser-

vation. (Counter-battery fire on this front has been negligible against this type of self-propelled artillery.)

4. The guns are able to repel enmasse any sudden threat on the squadron front or flanks.
5. Indirect artillery fire gives a distinct psychological advantage to the user. It breeds confusion, fear and panic among enemy troops because they cannot see what is shooting at them and consequently cannot combat it instantly.

## EMPLOYMENT OF INDIRECT FIRE

In this organization, normal employment of assault guns for indirect fire missions consists of placing the 6 guns of the troop in battery position in support of the entire squadron. Radio communication directly between the reconnaissance platoons and the assault gun troop can be established on the channel frequency of the assault gun troop. In this manner, reconnaissance platoons request supporting fires direct from the battery and the reconnaissance platoon leader acts as the forward observer.

When the advanced elements of the squadron have moved out almost to the effective range limit of the guns, one platoon of two guns is sent forward several thousands yards to take up a new battery position while the balance of the troop remains in position, supporting the squadron. The remainder of the troop follows as soon as the forward platoon is in position. Excellent results have been obtained by using this leapfrog method. Some examples follow.



On July 10 in Caumont, France, the forward observer (platoon leader) reported a tank and personnel moving along a road. A concentration was fired with direct hits on tank and personnel. Casualties were used and the tank was halted. An infantry patrol in the area the following night reported that the tank had been knocked out and burned.

July 26 in St. Pierre le Semilly, France, the forward observer in battery position fired preparation for and supported a dismounted cavalry attack on St. Pierre le Semilly in the break-through from the beachhead in Normandy. Hedgerows were the dominant terrain features. HE superquick and tree bursts were used for the preparation fires. Light tank sorties were supported by time fire. In the afternoon, attacking forces were pushed back by a German counterattack. Heavy WP fire was placed so as to blind and burn the enemy. This enabled the attacking force to reoccupy the hedgerows and road. Dead Germans—17 found along hedgerows, 5 along the road, and 3 in the village; 7 wounded evacuated through division aid station; and a large number of dead Germans evacuated by their own troops before the village was taken—indicated the effectiveness of the fire. The bodies of many of these casualties had been hit with shrapnel or burned by WP.

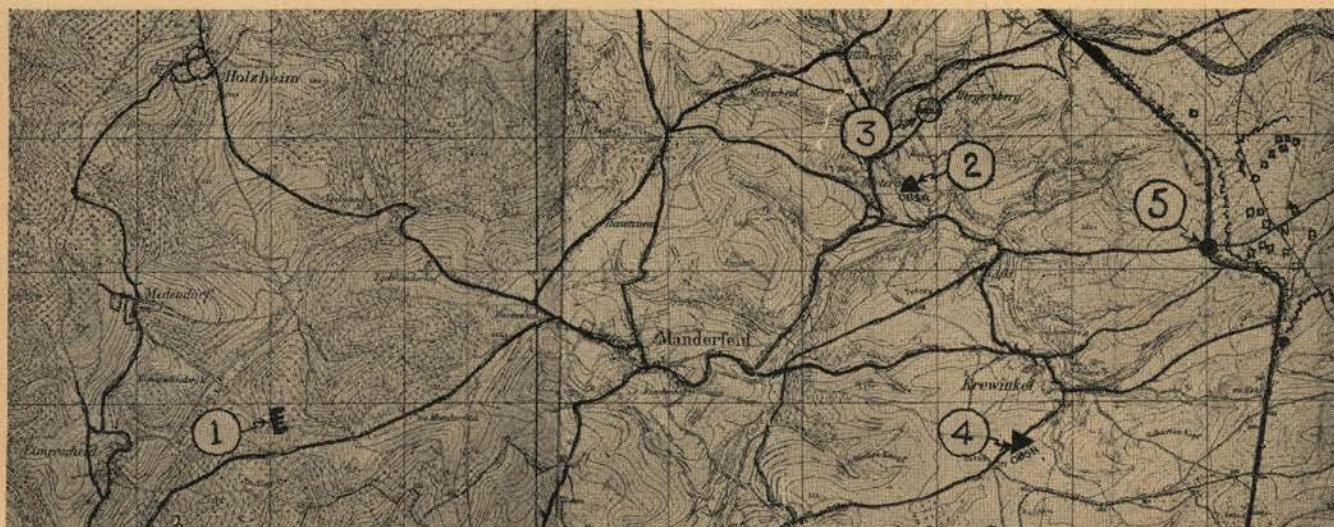
On July 27 in St. Pierre le Semilly, France, the forward observer picked up an enemy column entering a wood. Fire was adjusted on the column. Direct hits were observed on two half-tracks, one cargo truck, and one command car. A column of personnel observed leaving this same wood toward the front also received direct hits which caused casualties. Effects of a further concentration on the wood itself could not be observed.

On August 3 in Etouvy, France, the 3d Platoon laid a smoke screen to prevent the enemy from observing the effect of his 88mm fire on the squadron during the attack on Etouvy. No vehicles were lost after the screen was laid. Shortly thereafter, a friendly artillery observation plane dropped a note tied around a wrench, giving the coördinates of a self-propelled gun which was firing on the squadron. Fire was placed on this

location without observation. The gun was later reported to have been knocked out. Fire was also laid on other known enemy gun positions but the results could not be observed.

On 5 September in Hargnies, France, two reconnaissance troops, one platoon of medium tanks, and one assault gun troop (less one platoon) attacked the town of Hargnies which contained a complement of between 300 and 500 known enemy SS troops, reinforced by 4 or more tanks and self-propelled guns. Terrain was not suited for a mounted attack. The only avenue of approach was down a road containing a mined road block which had stopped a medium tank. These circumstances prevented the use of direct fire. The assault guns were placed in battery position near the top of a hill to the west of the town. Though the only map available at the time was of 1/250,000 scale, the town was shelled by the assault guns and the enemy driven from it. Two enemy tanks were also driven by this fire from positions defending a road block near the town. One of these tanks, firing into the woods over squadron personnel, had been obtaining tree bursts and causing serious casualties. Additional fire from the assault guns drove 50 enemy from a road block on the far side of the town and allowed a reconnaissance troop to enter the town from that side. Casualties were observed from the observation post, but it was not possible to determine them exactly because many were evacuated by the enemy before the town was taken. Net result of the assault gun fire was that the squadron succeeded in occupying the town after dark and was able to move on through it after daybreak.

On 9 September at Champlon, Belgium, while the squadron was advancing to the west from St. Hubert, the assault gun troop (less one platoon) arrived in the vicinity of Champlon. Here word was received that the first platoon of a reconnaissance troop (reinforced by one platoon of light tanks) had been cut off and the enemy was closing in on its position. The reinforced platoon had already lost one light tank. The assault guns immediately went into battery position







The back of a jeep serves as a desk for these officers of a cavalry reconnaissance unit as they determine the placement of their M-8 assault guns for firing on German positions "somewhere on the continent," September 9.

and opened fire, with the platoon leader of the endangered platoon adjusting the fire. The attack was driven off. Two tanks and a personnel carrier were driven out of town to the platoon leader's front. Direct hits were obtained on enemy infantry to his rear, causing casualties and driving them to the northeast. Additional hits were observed in a concentration of enemy transport in a wood to the south. Thirty enemy vehicles were seen leaving the wood after the shelling.

On 14 September, south of Manderfeld, Belgium, the outposts of a reconnaissance troop reported a platoon of enemy infantry digging in on a hillside above their outpost line. Fire was brought to bear on the target and the enemy was driven over the top of the hill. Observation was very bad because of fog, but 6 or more casualties were seen.

On 25 September at Manderfeld, Belgium, a reconnaissance troop outpost in front of the Siegfried Line observed a platoon of enemy in the vicinity of some houses. Fire was adjusted on the position. Those enemy not hit, took cover in one of the houses. Additional direct hits were observed on the house. In all, 9 casualties were observed. [Positions of battery (Point 1), observer (Point 2), and target (Point 3) are shown on accompanying map.]

On 27 September at Manderfeld, Belgium, an outpost of a reconnaissance troop observed a large enemy patrol forming near a small wood and a haystack. A concentration fired on the patrol caused a number of observed casualties, set fire to the haystack, and disclosed a camouflaged vehicle which was also destroyed. [Position of battery (Point 1), observer (Point 4), and target (Point 5) are shown on accompanying map.] This same outpost adjusted fire upon a house where enemy were seen. Two direct hits were obtained. Stretcher bearers made 7 trips from the building.

Assault guns have returned generous dividends throughout their employment in attack, defense, and pursuit. Their true value may be measured by the fact that they have never been idle during this campaign.

## Mechanized Cavalry Retains Tradition of Slashing Advance

by LEWIS HAWKINIS

*Associated Press War Correspondent*

WITH THE 3d ARMY IN FRANCE, Nov. 1 (Delayed).—Overtaken from the rear by the front line, a group of grounded cavalymen are fighting a foxhole war here for the first time.

This is the 2d Cavalry Group, the unit which made a story-book dash across France and always moved so fast it never had to dig foxholes.

The group evolved directly from the 2d Cavalry Regiment, which rode first in 1836. While the horsemen of those days would gape in amazement at today's armored cars and jeeps and light tanks, they would applaud the skill of these youngsters in the use of the cavalry's traditional weapons of speed and surprise.

Since it wheeled into action August 1 as a reconnaissance spearhead for the 4th Armored Division in the break-through at Coutances, the 2d Cavalry Group has traveled 160 miles some days and almost certainly has killed 6,000 Germans and taken more than 1,500 prisoners, although it has no means of handling large numbers of captives.

Against the awesome destruction piled on the Germans, the 2d's own losses have been fantastically small. Up to a few days ago its dead numbered fewer than 40 and only 18 were missing.

Units of the 2d were on the Loire River three days after the Brittany break-through, and among towns they reached first were Vitre, Toul, and Luneville.

The odyssey, which ended in a bitter but successful struggle to hold Luneville against a counterattack led by German Tiger tanks September 18, brought the group 25 Bronze Star and six Silver Star awards for bravery and there are that many additional recommendations now pending.

Reading through the thick sheaf of pending and approved awards and talking to the men whose feats they describe, it is easier to understand their lopsided victories.

Take the case of Staff Sergeant Edmond Testa. He was acting as sergeant for a platoon of armored cars and jeeps and more than a score of men on outpost near Bar-sur-Seine one evening. First they knocked out a gun crew, killing one, wounding two and capturing three. Then they killed two motorcyclists and with a single searing volley killed all but three of 25 Germans in a half-track. Sergeant Testa then moved his little band toward his command post at Chaource only to run into a long enemy column.

This presented a problem which he solved in typical fashion. His own description was:

"I ordered my platoon to open fire with all guns, and we raced down the road pouring it into them at 40 miles or more an hour. The column was at least 3 miles long and we went its whole length, killing at least 100 Germans and knocking out 10 vehicles for sure. They were shooting at us with everything from rifles to 88s, but they were so surprised and we moved so fast they couldn't do much."

Sergeant Testa and his men hid out that night in enemy territory and returned to their own outfit the next morning. His casualties were two wounded.



# Reconnaissance in Normandy

## "Y" Cavalry Reconnaissance Squadron (MECZ) June 6–July 1

IN the early predawn of June 6, four enlisted men, each armed with only a knife, swam to what was supposedly an enemy-held shore on two small channel islands, four miles east of the Cotentin Peninsula, Normandy, and marked the beaches for the landing of a reconnaissance detachment. They were the first American soldiers of the ground forces to land in France on D Day.

At H minus 2 hours a detachment from "Y" Cavalry Reconnaissance Squadron followed these men ashore and investigated the islands. No enemy was encountered, but the islands were found to be heavily mined. Initially, the detachment was slowed up by the mine fields, but despite casualties and the uncertainty as to the presence of the enemy, the unit had all elements ashore and the islands fully occupied by H minus 1 hour, and dispatched the first message to corps headquarters from ground troops.

The detachment held the islands until noon of the following day when it was relieved by an AA unit. The reconnaissance unit then proceeded to its main beach and reported to corps CP in the vicinity of Audouville La Hubert, where it provided local security and patrolled for snipers.

On D plus 10 the remainder of the squadron was landed, and dismounted patrols were immediately dispatched to report enemy dispositions in the vicinity. These patrols infiltrated through German positions and far to the enemy rear to obtain necessary information upon which subsequent operations depended. One patrol (dismounted) infiltrated through German positions as far north as Valognes in one night and returned the following morning to report important information concerning enemy installations between Montebourg and Valognes.

### BATTLE OF ROCHEVILLE

The squadron's next assignment was to reconnoiter the zone between two adjacent infantry divisions and to maintain contact between them on the advance to the corps objective. From the village of Nehou, one group advanced northwest and one due north. The advance was continued rapidly until leading elements were exposed to hidden enemy artillery, mortar, and small-arms fire. A dismounted reconnaissance disclosed what was believed to be the principal enemy delaying force, estimated as a reinforced platoon, with 2 AA guns, occupy-

ing positions on the edge of and in the village of Rocheville.

A coordinated attack soon reduced the enemy to impotence, and resistance was wiped out. That evening a company of friendly infantry moved into the town.

It had been the first pitched battle for the assault troops of the squadron, but they conducted themselves exceptionally well—fighting from building to building, and wiping out all enemy encountered. During this action, one lieutenant not only led and directed the employment of his tank platoons from the open turret of his tank but, entirely disregarding enemy small-arms fire, sprayed enemy occupied buildings and positions with the AA .30-caliber machine gun mounted on the turret of his vehicle.

### DISMOUNTED ATTACK

Two days later, while still in Rocheville, the squadron was attached to an infantry division, with the mission of occupying high ground near les Flagues for the purpose of protecting the division flank. On its approach march, the rear of the column came under enemy small-arms fire. This fire ceased when vehicular .30 caliber and .50 caliber machine guns opened up.

The advance proceeded until the lead elements encountered a road block covered by antitank guns, rockets, and small arms. Preliminary attempts at reducing this obstacle were repulsed, and the troop in assault was forced to withdraw.

The squadron then withdrew to the south in the vicinity of Breuville, from which place it prepared to attack dismounted and seize the high ground near les Flagues. After the artillery preparation the attack jumped off at 1630, with the squadron commanding officer leading the dismounted personnel of Troops "A" and "C". By 1730 the objective had been overrun in the face of heavy fire from small arms and mortars.

### PATROLS

Shortly after dark the squadron was ordered to relieve an infantry battalion in position and from that position protect the left flank and rear of the division in its assault on Cherbourg.

Anticipating a delay in the relief of dismounted elements of the squadron, the group commander assembled the reserve troops, "E" and "F", and marched them to CR 022198 via les Pieux and Vasteville in order to



# Normandy - -

avoid a late start on the new mission. Relief of the dismounted elements of the squadron, which was to have been accomplished by midnight, was completed at 0600 the morning of June 21. They then marched at once to rejoin the rest of the squadron at CR 022198 and arrived there at 1000.

The squadron commander and the squadron executive officer made a personal reconnaissance of the prospective position, contacted the units to be relieved, and planned the actual occupation operations. These positions near Vasteville were occupied for about 8 days, during which time mounted and dismounted patrols were sent daily into and behind the enemy's position.

The following are examples of the patrolling during this period:

One patrol, reconnoitering toward Beaumont Hague, penetrated the enemy's position and located three artillery pieces which had been shelling the squadron's position.

Another patrol led by a lieutenant threaded its way through mine fields, penetrated, and passed through the enemy's lines, and established an observation post and listening post adjacent to the Ste Croix-Beaumont-Hague highway, then being used extensively by the enemy. The lieutenant spent three days and nights in this position, the last two of which he spent alone after having sent back information of enemy movements by all other members of his patrol. The lieutenant, a replacement officer, and his patrol, which consisted primarily of newly joined replacements, were commended for their initiative and the manner in which they immediately contributed to the successful accomplishment of the squadron's mission.

An armored car patrol led by a sergeant had its car overturned when it struck several enemy mines. The sergeant lay for the remainder of the day suffering with two badly mangled feet. The following morning he crawled toward his lines a mile away, when he finally reached friendly troops.

## FLANK GUARD

The squadron next received the mission of advancing on the left flank of the division by assaulting to the northwest abreast of the leading infantry regiment from the vicinity of l'EpINETTE along the axis-l'Pinette-Rue de Peaumont-Bouchard-Camp Romain. The objective was to eliminate enemy resistance in the Cape Hague Peninsula subsequent to the fall of Cherbourg.

At 0600 June 29 two troops of the squadron advanced on Objective 1 (see map) which they occupied with no opposition other than enemy artillery and mortar fire. On Objective 1, contact was established with the infantry on the right flank of the squadron zone.

Patrols were dispatched immediately to Objective 2 where they drew enemy artillery and small-arms fire from Objective 3. During the day these patrols were reinforced to the strength of two platoons, and they were able to locate several enemy gun positions on Objective 3, against which they directed artillery fire. By dark the division had partially occupied the high ground south and southeast of Beaumont Hague, and all elements of the reconnaissance troop had reached Objective 2. Patrols which were sent to Objective 3 brought back 76 prisoners.

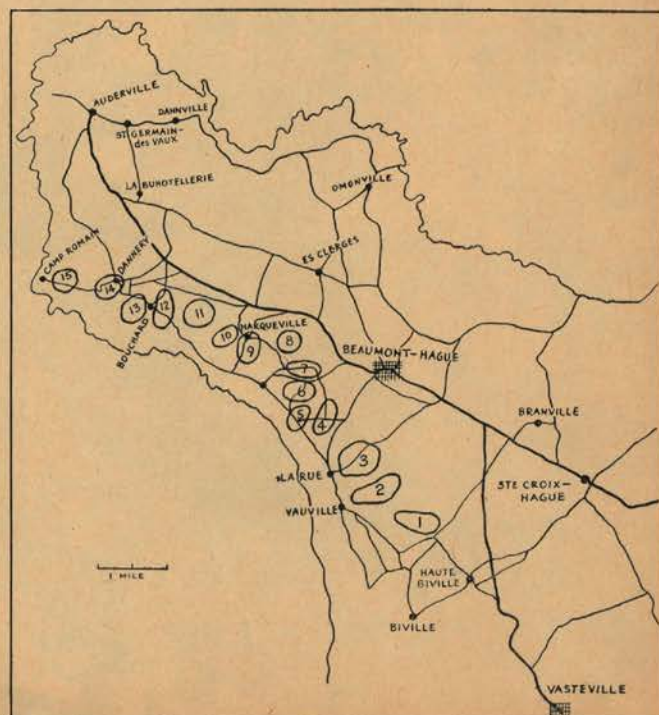
The mission of the squadron remained the same for June 30: namely, protect the left flank of the division by seizing successively Objectives 3 to 15 (see map) as the division advanced.

At 0700, after a 15-minute artillery preparation, the dismounted elements of the squadron attacked Objective 3 in column of troops. Friendly artillery, continuing to fire on Objective 3, pinned the enemy down in his position, which was a strong one, and thus facilitated the success of the attack. Enemy resistance was eliminated and over 200 prisoners captured. The position was consolidated; mopping up continued until noon.

An excellent OP was established on Objective 3 from which observers directed very effective artillery fire onto the enemy retreating on Objective 4.

Against only scattered enemy resistance, the advance to the northwest was continued to Objective 8, where the squadron was temporarily pinched out by the infantry moving almost to the coast in preparation for its attack on Herqueville. As this attack moved out, the squadron continued its advance to Objective 11 where it arrived just before dark.

After dark the squadron continued to the village of Thiebot, captured 19 Germans, and occupied the village until daylight July 1. Then in a dense fog the advance was resumed toward Objective 15.





Further assaults on succeeding objectives was consummated with little organized resistance, and the squadron assembled in Bouchard with light casualties and a long record of successes.

The squadron did not confine its operations exclusively to land and sea but also had a troop function in an attached rôle with an airborne division in the initial assault. As a result of several successful combat missions many prisoners were taken, and many casual-

ties were inflicted. One platoon distinguished itself particularly when it surprised an enemy column on the march. Firing all vehicular and individual weapons, the platoon ran down the column and killed several hundred of the enemy, while its own casualties amounted to only one man wounded. The remainder of the time that the troop's attachment was effective, however, its activity was confined exclusively to reconnaissance.

## "Z" Cavalry Reconnaissance Squadron (MECZ) July 7-10

ON the evening of 7 July the "Z" Cavalry Reconnaissance Squadron (Mecz) crossed the Vire et Taute after the engineers had put in a bridge, and the squadron, followed by group headquarters closed along the trail just south of the bridge and leading to the vicinity of Goucherie.

The mission of the cavalry group was as follows:

Relieve an infantry division in its zone on corps order, occupy and defend the zone, and on corps order cross the Vire River and/or Vire et Taute Canal; move to the right flank of the infantry division; destroy and capture the enemy in the vicinity of Graignes to the canal; maintain contact with the division, and establish and maintain contact with the corps. This mission in effect placed the group between the left flank of the corps and the right flank of the infantry division.

The squadron in the lead was supposed to move rapidly over the trail in the vicinity of Goucherie. This road, however, was in terrible condition. In some places mud was four feet deep. The squadron moved out in order of march with an advance guard of one light tank and assault gun, followed by a reconnaissance platoon. Because of terrain conditions, the entire unit was forced to move in a solid column; it was possible to leave the road only by demolition on hedgerows or by using openings through the hedgerows to get into adjacent fields.

The column had moved but a short distance when it ran up against an enemy platoon with light automatic weapons entrenched, but was dislodged by use of assault gun, 37mm canister, which was very effective.

Light tanks left the road through hedgerows (after demolition had been executed on the hedgerows) and

A Reconnaissance unit passes through Theux, Belgium. Belgian flags are hung in welcome.





moved in on the flank of the enemy position. Reconnaissance platoons attacked dismounted along the hedge-rows covered by the fire of the mechanized vehicles.

Several similar actions took place during the march to the vicinity of Goucherie. The squadron closed late in the night of the 7th in the "er" in the word Goucherie. A 75mm enemy gun was discovered in this vicinity and was knocked out by firing canister from tanks which were later supported by assault guns. Available information regarding the enemy at that time was that the line Sur-le-Mont-Graignes was occupied by poor class Todt troops, with most of the SS 38 Panzer Grenadier Regiment in the le-Mesnil-Angot area.

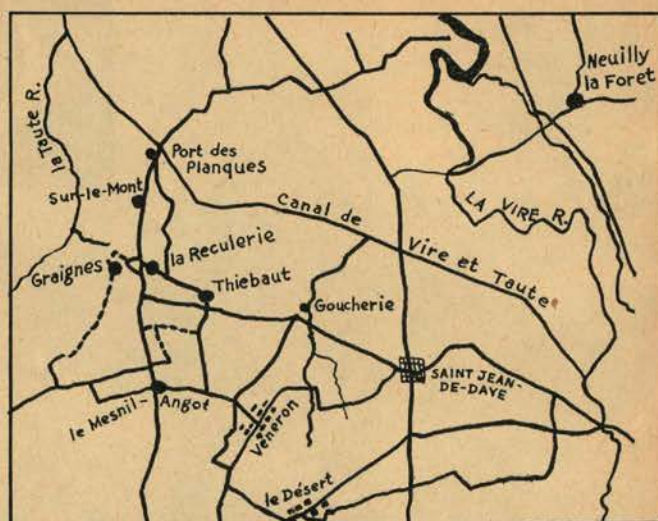
At 0700 on July 8 the squadron moved to the attack on Goucherie. Attack was made dismounted by the reconnaissance troops with Troop A, with a squadron of engineers attached, and reinforced with tanks and assault guns forming a base of fire. Troop C moved in on the south flank of the town with machine guns, mortars and using 510 radios. Troop B was held in reserve. On the south flank Troop C encountered determined and strong resistance, but eventually drove the enemy out and entered the town shortly after Troop A. Eight prisoners were captured, 5 enemy killed and two enemy machine guns, rifles, pistols and other equipment were captured. During this attack corps artillery furnished supporting fire.

Upon entering the town Troop A consolidated its position, while Troop B then mounted up in its vehicles and moved around through St. Jean De-Daye to Goucherie and pushed on west to just east of Thiedaut. Although its advance was opposed by a company of the 38th SS Panzer Regiment, Troop B killed 70 Germans, wounded 55; they suffered in turn one seriously injured and one wounded.

In the afternoon Troop A received a heavy counter-attack by dismounted enemy supported by 75mm anti-tank guns and flame throwers. Forced to fall back, the troop experienced much difficulty in moving their vehicles to the rear and were closely followed by the enemy. Troop B was pulled in to help on the right flank. After Troop A had taken a position just south of Goucherie the attack was stopped and the enemy withdrew.

Meanwhile Troop C had been brought into town to await orders. About dark the group elected to take position along a creek running north and south through Goucherie to carry out the mission of protecting the flank of an infantry division. Troop C, left in town with the engineer platoon, was bothered greatly during the night by the action of enemy snipers, who were extremely difficult to locate and get out of the way during darkness.

Early in the morning of July 9 the group was attached to CC "B" of an armored division with a mission to hold the line just west of the north and south road through Goucherie, with reconnaissance to a line a mile and a half to the west to cover the crossing of elements of the



9th Division. This mission was performed successfully. Only small dismounted enemy groups were encountered and driven out by the action of the small dismounted units supported by tanks and assault guns.

Late in the evening the group was attached to the 9th Division. At 1630 orders were received for the group to move to the north and south line through le-Mesnil-Angot and then move north to seize the bridge at Port des Planques. The attack, to be launched at 1800, was to be supported by a medium tank company from the armored division. Troop B, reinforced by one light tank platoon, one medium tank platoon and one squad of engineers was to move along the road, while Troop A, with the same reinforcements as Troop B was to move north of the road.

Troop B's move on the road west from Goucherie was stopped by two well organized enemy companies. Troop A was able to push on to la Reculerie. Late in the evening the enemy blew up an antitank gun; sniper activity completely ceased; and some movement was observed in the enemy rear. It appeared that the Boche was going to withdraw.

The morning of July 10 the squadron again moved out optimistically. Troop A sent a strong patrol, reinforced with a tank section and assault gun section to the north, while another patrol, similarly organized reached a point just north of Graignes, where it ran into friendly artillery and was forced to retire.

At about this time the enemy launched a counter-attack from the southwest, followed later by an attack from the west supported by 4 or 5 antitank guns. The enemy attacked with two companies of infantry with many automatic weapons and mortars. Part of Troop B became isolated at the town of Thiebaut, which forced Troop A to take up a position just north of Thiebaut. During the intense fire fight, which lasted for 30 minutes at extremely close range, Troop B fought and held. The situation was looking bad when an infantry regiment arrived and attacked with two battalions. The advance was then pushed forward to the original western objective.



# Comm



Signal Corps Photo

Vehicles of an infantry division move through the ruins of St. Lo, France, July 29, 1944.

## **"Normandy, Brest and the Present"**

From "Q" Cavalry Reconnaissance Troop (Mecz)  
Captain Edward G. Jones, Jr., Troop Commander:

**L**EADERSHIP is really the key to it all. As a leader you must make sure that orders are carried out to the letter.

Special attention to details is very important. When a unit goes into operations, it should not let down on these things; if anything, it should place more emphasis on them. During operations, troops are not always active; there are periods when nothing is going on. Unless things such as appearance, wearing of equipment, care of equipment and vehicles are stressed, there is a tendency to relax and not uphold the standards previously taught.

Training in tactics, employment of weapons, and the policy of having everyone in the organization know the other man's job are not only sound in principle, but absolutely essential in battle. Enemy fire is no respecter of persons. If a radio operator is hit someone must take over immediately. The same applies to drivers, gunners, or leaders.

While training is very important, if men do not practice conservation of matériel and equipment—in fact, supply discipline—then the training is no good. It would take a QM regiment to haul replacement stocks to one careless troop. It has often been said that there is no accountability in combat but any loss or damage to equipment because of carelessness will mean someone's life. That is the only accountability. It is the duty of all leaders, down to and including the squad leader, to make this point clear. If equipment is damaged, salvage it; if equipment is found, turn it in or put it where it will be found by the follow-up troops.

Inasmuch as communication is the spine of a reconnaissance troop, all personnel should have a reasonable working knowledge of the organizational radio sets. This troop was so trained prior to entering operations and it was found that such training paid dividends in battle.

The German is still making the best possible use of terrain, camouflage and observation. Furthermore, he is now fighting in his own "backyard." He knows the ground, and too, he is fighting for his own home. The tendency, therefore, is for him to fight harder than ever.



# ts from Combat

**1st Lieutenant Henry Strickland, Communication Officer:**

In general, communications in this troop have been good, and very little time has been lost on repeats.

The question of a quick flexible code for reconnaissance elements has been quite a problem. By using a separate base plate from that used by division the slidex method proved very successful. The M-209 was found to be entirely too slow and caused delay in traffic.

Whenever two or more radio units are mounted in the same vehicle, a minimum component parts list should be specified. It was found that the combination of two large radio sets in an M-8 constituted excessive equipment and required a necessary reduction.

Rainy weather in France caused a break in communications; transmission was out about one-fifth normal distance.

In training of radio operators, more stress should be placed on practical common-sense repairs, which could be performed by the operator himself. Too many times an operator knows how to pound brass and give the correct procedure but is completely lost on simple repairs to his equipment. This applies especially to reconnaissance and tank units out in front of division.

**1st Lieutenant William S. Murdoch, Platoon Leader:**

All cavalry replacements should have training in the removal of mines.

With almost no exceptions, it has been found that the enemy is very free in his use of Teller mines. Whenever he withdraws he leaves most roads and trails mined. These mine fields are of various patterns, and about one-fourth of the mines laid are booby trapped. Most mine fields are easily spotted because of the enemy's haste in laying them. The fastest and safest way to remove mines is to pull them with long ropes.

Several M-8 armored cars have run over Teller mines, but with the protection of the armor plate on the floor very few casualties have resulted; whereas, if this protection had not been added it is felt that hitting mines would have caused a great many more casualties.

**1st Lieutenant Clarence Gebhardt, Platoon Leader:**

Inasmuch as a reconnaissance platoon operates quite often by sections, usually in front of or in between all other troops, every man must know and carry out his job to a "T."

In Normandy we bitched about the hedgerows, but from experience in the open country since then, it is generally agreed that the hedgerows had their advantages for us as well as for the enemy. The M-8 armored car is not an off-the-road vehicle, and in open

terrain it is sometimes very important to travel cross-country.

Of the three campaigns—Normandy, Brest, and the present—the terrain around Brest was by far the best suited to reconnaissance vehicles. The hedgerows in the Brest area were thinner and more widely separated than in Normandy. The roads had fair cover, and the hills in most places were easily crossed or by-passed without exposure to enemy fire.

It sometimes pays when in actual contact with the enemy, even on a reconnaissance patrol in vehicles, to use every weapon available as soon as exposed or fired on. At the same time, it should be borne in mind that the 37mm gun is not to be used against heavy pillboxes or tanks—especially Tigers! It is like hail on a tin roof. Its most effective use is against a machine-gun nest or personnel in groups. On the other hand, the .50 caliber is very effective against personnel and light vehicles. It should be used on the lead jeeps as well as on the armored car.

Hermann, the German GI, fights to his last chance, and then comes out with a big smile on his face, looking for sympathy and cigarettes. This was noticed especially during the Brest Campaign.

**S/Sergeant Edward H. Duane:**

Upon arrival in France, the supply stock was very low, with only necessary and organizational equipment. By starting immediately upon strict supply discipline and requisitioning items as needed, the amount of equipment drawn by this unit has been comparatively small.

Upon landing, the equipment was distributed in three half-tracks and trailers. At the first opportunity, these vehicles were reassigned and a half-track and trailer designated for signal supply and repair, one for ammunition and small-arms repair, and one for supply. This arrangement left two half-tracks practically empty. These have been used to transport food and equipment to the platoons in the field and to draw supply and food from the supply points.

With a good crew, such as this supply section has, by cooperating and pitching in to accomplish whatever necessary, most obstacles can be overcome very early.

It is believed that by substituting the three half-tracks for one 2½-ton 6 x 6 and two weapons carriers the section could overcome its transportation problem. By using the 2½-ton 6 x 6 for a supply room and small-arms repair shop, and the trailer for all equipment not in frequent demand, a more efficient supply room could be established.



Because a half-track uses a considerable amount of gas, makes a lot of noise, and gets around slower than a weapons carrier, it is believed that the weapons carrier could be used to transport food and equipment back and forth from supply points and to the field more easily and quickly. Thus the two trailers attached could be used as a signal supply and a maintenance shop.

S/Sergeant Clarence L. Robertson, Platoon Sergeant:

*Versatility*, Joe! The more you know about the other guy's job in this war, the more chance you have to get through. Of course, this is said with reservations, but take it or leave it, a slight working knowledge of all units and their weapons is a must. This reconnaissance troop was trained with this idea, and it has been useful, because at various times the troop has fought as infantry, artillery, reconnaissance or what-have-you, and it has been able to step in at any time at any job. Versatility creates an element of surprise for Hermann, who has you tabbed as a specialist. So ask plenty of questions, and be curious as hell about the other Joe's job.

## France—Rear Echelon Personnel

Private John A. Maitland:

**F**OLLOWING hot on the heels of an American army in France, this ordnance ammunition company has on several occasions been very close to the German lines. Most of the following comment is "old stuff" but cannot be stressed too often.

*Information*. Whenever possible, all personnel should be given a true picture of things happening. Failure to do this is a main trouble. We just do our duty—not knowing, when, where, or why. This can be altered by following the Five Paragraph Field Order.

*Orders*. Make all orders as direct as possible. Don't let men obtain any information by the "grapevine" method. This pertains to any movements. N.C.O.'s should inform their men correctly and not keep things to themselves until the last minute. Men are not mind readers.

*Equipment*. Be certain that all equipment is in good condition and have the right things for the right job. Don't over-burden yourself by carrying anything extra.

*Mines and Booby Traps*. "Curiosity killed the cat." Don't worry about what is in the other field or on the roadside. You will know in time.

*Rumors*. "Just heard the latest. . . ." Watch out, that is dangerous. Men have died by failing to check up on stories. If you hear or pass on any information be certain that it is true and comes from good authority.

*Bivouac Areas*. Obey all things taught regarding rules, regulations, camouflage, layout and bivouac security.

*Maps*. If possible, study maps of the country you may visit. It will help greatly, for you may be out on detail alone, as often happens here.

*You*. Know yourself, your job, your vehicle and weapon well and always be a minute man. Remember

the unpredictable always happens in war. Be ready for anything.

It has been our job to see that various units get their ammunition correctly and as fast as possible. We shall soon be in Germany.

## South Pacific—Quick on the Trigger

1st Lieutenant William W. Chiprin, Tank Bn.:

**I**N many, many instances the *physical* condition of a soldier will spell the difference between life and death. Upon that premise thousands of soldiers will stake their lives, just as thousands will learn in the hard school of warfare—and many will die because of being a "bit soft."

In one phase of the Kwajalein Campaign I witnessed a scene which will long live in my memory. One early morning during February, 1944, I was leading my platoon of tanks to the front when we were stopped by an infantryman who needed some help on a pillbox. Just as I stuck my head out of the turret to hear what he had to say, a Jap, who had been very well concealed, arose on all fours and flew through the air in a manner that reminded me of a Marathon runner. As he dashed toward the infantryman, whose back was to the Jap and, incidentally, only 10 to 15 yards distant, my mind froze for a second. Simultaneously, the Jap raised a two-armed saber.

Desperately I pointed and yelled, "Behind you, behind you!!"

Finally catching the meaning, the sod pusher turned swiftly and, firing his M1 rifle from the hip, in the same instant jumped to one side. When he fired, the saber was just beginning its downward arc toward his head or shoulder. As the Jap fell, his saber slashed through space and the infantryman fired another shot, then finished the Jap with a few bayonet thrusts.

If the infantryman had not been in good physical condition, he would not have turned fast enough, nor pulled the trigger in the right split second, and in a case such as that there is only a split second between life and death.

Good physical condition quickens thought and reaction; poor physical condition slows them. In the above instance, although the soldier did not comprehend my signal in the first split second, when he did understand, his reaction was instant.

In addition to physical alertness, the above incident also illustrates another point of value. Tank commanders, armed with pistols in addition to or instead of tommy guns, would often find such side arms of inestimable value.

Tommy guns are too clumsy to be utilized from a tank. The tank is merely a storage place for the guns until the tank crew actually dismounts. If a situation requires that an individual weapon be used from a tank, what could be faster than for a man literally to snap out a pistol and fire instantaneously? Naturally,



he would have to be adept in the use of the weapon and thoroughly trained.

Another incident which occurred illustrates this point even more emphatically than the above experience. One tank commander had opened his turret to dispose of his brass, when he found himself face to face with a Jap who had jumped up on the rear deck and was about to throw a hand grenade at him. The tank commander whipped out his pistol, which he had acquired by a "midnight requisition," and shot the Jap.

One trick that the Japs tried to put over—and almost succeeded—was tried on my tank on two different occasions. Two Japs, waving a white flag, would come out of a foxhole and approach the tank. Just as they were about to be accepted as prisoners, the first one would suddenly go down on his hands and knees, while the Jap in rear would pull the trigger of a machine gun strapped on the first Jap's back. Fortunately, the first time my shots were truer than the Japs; the second time, the trick was stopped earlier.

Modern cavalry—in tanks—need to be as "quick on the trigger" as rough riders ever were.

## Burma—"The Jungle Isn't Half Bad"

Lt. Colonel D. E. Still

IN 6 months of operations with "Merrill's Marauders" in Burma I have seen two snakes (garden variety), one scorpion, and that is all. Without even trying, anyone could do as well in one afternoon along the Texas Border. At certain seasons of the year the jungle is a bit warm, but it is certainly not any hotter than Fort Clark in the summer, or for that matter, Fort Riley in August. There are, however, quite an assortment of trees, bushes, and vines. In fact, for the most part, on careful inspection, one finds that the Burma jungle is composed of that and little else. To this there is one important exception; there are trails, villages, and clearings.

These latter terrain features are all important. No one (not even the natives) does much fighting, carousing, or loitering in the jungles proper; that is, not for any extended period of time. Everyone travels on the trails, makes his living off the clearings, and lives in or near the villages. Likewise, most all of the fighting is on or near roads, trails, and villages. Of course, during the excitement of battle, and for tactical reasons too, a certain amount of fighting occurs in jungle terrain adjacent to trails and villages—but it is very adjacent.

Most writers on the jungle seem to fill up space with the unusual and rare features of jungle terrain and jungle fighting but fail to mention the commonplace and day-by-day usual items.

As far as fighting is concerned, the Burma jungle imposes limitations on the usable range of weapons, increases the relative importance of short range automatic weapons, and increases the difficulties of observation for artillery and mortars. Maneuver is restricted of course.



Signal Corps Photo

Supreme Allied Commander of Southeast Asia, Admiral Lord Louis Mountbatten, visits the forward Burma area 25 June 1944. Note thick jungle growth bordering trail.

Usually, troops move more slowly and for shorter distances. Obviously negative air information must be closely checked.

He who controls the trails, towns, and water courses controls all the rest of the local scenery. If the Japs prefer to forsake these and go in the jungle, don't become impatient. They will get disgusted and hungry enough to come out. If they stay in the Burma jungle long enough, and in sizeable numbers, the Emperor will probably be forced to form another new cabinet.

As for living off the Burma jungle, forget it. Stick to K or C rations, however monotonous. If bad becomes worse, bum some chow off the natives. If lost, and unable to find your way around blame yourself for not learning basic scouting and patrolling, which is as applicable in Burma as in Kansas or Texas. Then, after this period of self recrimination, swallow your pride and ask directions of a native as you would of a San Antonio traffic cop or a local farmer in Louisiana.

Seriously, all that one has to do to survive the jungles of Burma is to be sensible, adhere to basic principles, and snuggle up close to your own artillery and air support. If you do this, you will find that the jungle isn't half bad.

What have you learned in combat?  
Write it down—100 to 2,000 words.  
Tell your own story; tell it your own way.  
Write about what to do—what not to do—to save lives, time, weapons—how to outwit and out-fight the enemy.  
Write what your unit did in battle—what the enemy did—and what lessons were learned.  
Send your story through your Public Relations Officer for "field clearance." Mark it for THE CAVALRY JOURNAL, 1719 K Street, N.W., Washington 6, D. C.  
Let others benefit from your experience.



# THE "BUFFALO" PLAN

## 1st Armored Division on

"BEFORE I will report to the Fuehrer that this division is unbattleworthy, I will pack the remnants into one truck and take them home." So said Lt. General Heinz Greiner in March as he brought his newly organized 362d Infantry Division into the German line opposing the Anzio beachhead.

On May 23, in an attack called "Buffalo," the 1st Armored Division made the first part of the general's threat come true. It can safely be assumed that the general saved one truck from the three-day battle that wrecked his division.

To wipe out a division, penetrate a line of fortifications which the Germans had spent 4 months preparing and so disorganize a German army that it was forced to begin a 200-mile retreat the attack required careful planning, unquestioned teamwork and an element of surprise.

The over-all planning of the Fifth Army attack from the Anzio beachhead consumed two months, but the

finer stages of the preparations were not reached until the final month. For those 4 weeks, the commanders and staff, and unit leaders down to squads and tank commanders, pored over two attack plans—one aimed at Cori in the northeast, the other at Littoria, to the east.

The plans were "Buffalo" and "Grasshopper." Plan "Turtle," the only other of the many considered to survive to the semifinals, was discarded at the last moment because of reportedly heavy German defenses on the road to Albano.

For both the "Buffalo" and "Grasshopper" plans, artillery positions were dug and stocked with ammunition; final assembly areas were selected and reconnoitered; complete air reconnaissance was made of both sectors; and personal reconnaissance was undertaken by unit commanders. German troop dispositions and strengths were discovered and studied. Every possible obstacle that the enemy might throw in the path of either attack was considered and measures taken to combat it.

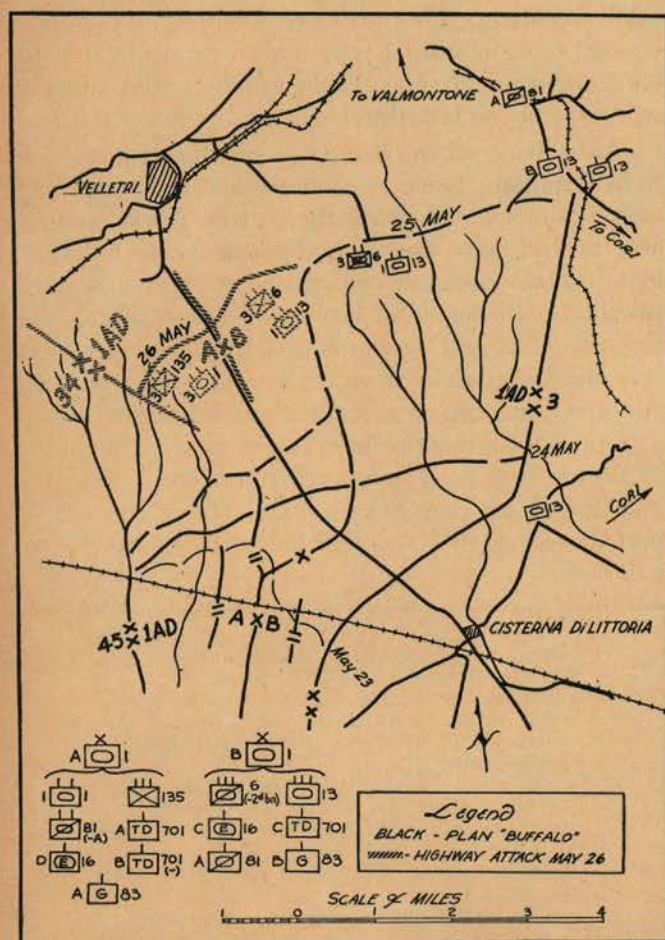
### SWEATING AND SWEARING

The teamwork was achieved by the 1st Armored Division through weeks of attack problems rehearsed down to the smallest detail. The training area was so close to the front lines it could be observed with a three-power binocular and shelled with an 81mm mortar.

The teamwork was not achieved by last minute exhortations by commanders to cooperate, but resulted rather from much sweating and swearing through the same attack problems time after time until every man knew his job. In the problems particular stress was placed on communication between platoon leaders and company commanders of tank and infantry units. The individual infantry squad leader was taught not to wait for radio communication if it were not immediately available, but to approach on foot the nearest supporting tank and in person request fire on the strong point or machine gun nest holding up his advance. The foot soldiers were the "eyes" of the tanks.

Numerous times in the actual attack on May 23, infantrymen sought out their supporting tanks and from a perch behind the turret directed them into the firefight.

Artillery preparations for the attack were plotted for virtually every inch of ground in the division sector. Through a series of phase lines, artillery could be concentrated in a single band completely across the division front.





by 1st Lieutenant  
Richard K. Gottschall

# Road to Rome



Signal Corps Photo

By plotting the numerous houses that dotted the Cisterna plain, and assigning to each a number, it was possible for every soldier in the division attack to call for, and get, artillery support where it was most needed. Probably more than in any other attack of the division, artillery fire was called for not by battalion and higher commanders, but by platoon and squad leaders, all of whom knew the numbers of the houses directly to their front.

As a further aid to planning, the division's armored engineer battalion constructed a 30-foot square terrain board covering the sector of the intended attack. This board was studied by all officers and noncommissioned officers of the attacking troops.

Surprising an enemy who had been expecting an attack for weeks was difficult to do, and especially so when every assembly area was under observation. Strict camouflage discipline and last-minute grouping of forces were the only ways that offered any hope of deception.

Since the direction of the attack was not finally decided until May 21, there seemed little likelihood that the Germans would be able to get positive information of the plan long enough before H-hour to do them much good. To confuse German intelligence, however, during the week preceding the attack officers and men wearing 1st Armored Division patches were sent on patrols with an infantry division in the sector to the northwest, along the "Diagonal" road. British aid was

enlisted to simulate increased troop movement on the opposite flank of the beachhead. Some British artillery was moved into position in that sector and dummy tanks were spotted in the area.

Final phase of this "cover plan" was a demonstration by infantry on the morning of the actual attack. The demonstration, which consisted mainly of noise but included short advances, was carried out on the "Diagonal" road in the sector that 1st Armored Division men had patrolled shortly before.

It seemed logical on May 22 that an attack so carefully planned and thoroughly rehearsed would succeed—but the final judge would be General Greiner, Commander of the German forces.

## "H" HOUR AND THE SNAKES

The morning of the attack was marked by an artillery and aerial bombardment, but the artillery barrages were only slightly greater than those of preceding mornings. For a week before the attack, the "Sunrise Serenade"—as it came to be called—was fired daily at slightly varying times, but always close to dawn. When D-day came, the Germans assumed that it was simply another occasion when the Fifth Army artillery was taking its customary morning constitutional.

The attack jumped off at 0630 hours May 23 after an intense aerial and artillery bombardment. On the left Combat Command "A" reached the Cisterna-Campoleone railroad at 1300, several hours before Combat



Signal Corps Photo

↑ A 1st Armored Division light tank crosses a road block, blasted-in ten minutes before by the Germans in a vain effort to delay troops from reaching Rome.

← From Anzio through Rome to Viterbo, armor led the way in a well-planned attack over good tank country. Left, reconnaissance cars of the 1st Armored Division, move past an American tank, knocked out during the drive on Rome.



Command "B", which had been assigned the right half of the 1st Armored sector. By dark, when CC "B" had reached the railroad, CC "A" had pushed up to 1,000 yards beyond.

The difference in speed between the two combat commands was due partly to heavier enemy resistance on the right, but mainly to the use of 6 demolition "snakes" employed on the left to blast paths in the heavy mine fields rimming the German defenses. These "snakes", used for the first time in combat, not only cleared gaps wide enough for tanks but killed or stunned enough enemy troops in forward strongpoints to permit the assault infantry to mop up with little opposition.

The "snakes", as constructed by the division engineer battalion, were 400-foot flexible steel lengths packed with more than two tons of TNT. Towed as close as possible to the mine field by a medium tank, each "snake" was pushed into its final position and detonated by machine-gun fire from the tank.

Only one light tank, which accidentally strayed from the safe path, was lost through antitank mines the first day in the CC "A" sector. Because of tank losses through mines in the CC "B" sector, it became necessary to attach a platoon of tank destroyers as replacements.

The CC "B" losses should not be considered as high, despite the necessity for replacement of vehicles. In the case of both combat commands, the surprise achieved by the attack was complete, and constituted a real advantage over the enemy from which he never really recovered.

The attack was continued the following morning, and by 1100 hours tanks from both combat commands had cut Highway 7 north of Cisterna. Both forces

This German quadruple automatic 20mm flak gun, damaged by a direct hit from United States mortars in the Cori area, was captured during the breakout from Anzio.



Signal Corps Photo

reached their objectives and secured them before dark.

The day's attack cut off Cisterna, caused the evacuation of Cori and destroyed a large amount of enemy matériel. Prisoners of war for the day totaled 850, a figure nearly equivalent to the fighting strength of one of General Greiner's infantry regiments.

#### DEAD END STREET

On May 25, enemy resistance and unsuitable tank terrain slowed the CC "A" advance on the left, while weakened resistance and adaptable terrain speeded the attack of CC "B". The Cori-Velletri road was cut at 1300 hours, and CC "B" was ordered to halt and secure its position.

The day's operations indicated that the enemy had suffered so many casualties he was forced to withdraw on the division's right, while stiffening resistance on the left indicated the enemy had regrouped the remnants of his forces to make a determined stand in the Albano hill mass.

After detaching a medium tank battalion and an infantry battalion for operation with the 3d Infantry Division toward Ardena, the 1st Armored Division was grouped in assembly areas near Cisterna. At 1100 hours on May 26 the attack astride Highway 7 jumped off over unsuitable tank country against a strong enemy position. Mine fields and enemy guns stopped the attack cold, and by dark the forward troops were still 2,000 yards short of Velletri.

Relieved by an infantry unit, the division dropped back to assembly areas for two days of maintenance. On May 29, the attack was resumed still farther to the left, and the day's operations were both costly and fruitless. Owing primarily to poor coordination between the 1st Armored Division and the infantry division on its left, 37 tanks were lost. The enemy was permitted to infiltrate tanks and infantry behind our own assault tanks and attack the friendly infantry from the flanks and rear.

During the following two days the attacks were continued with better coordination but little more success. Tank and personnel losses had been high, little damage had been inflicted on the enemy—in proportion to that done in the first days of the break-through—and the 1st Armored Division was withdrawn from the line.

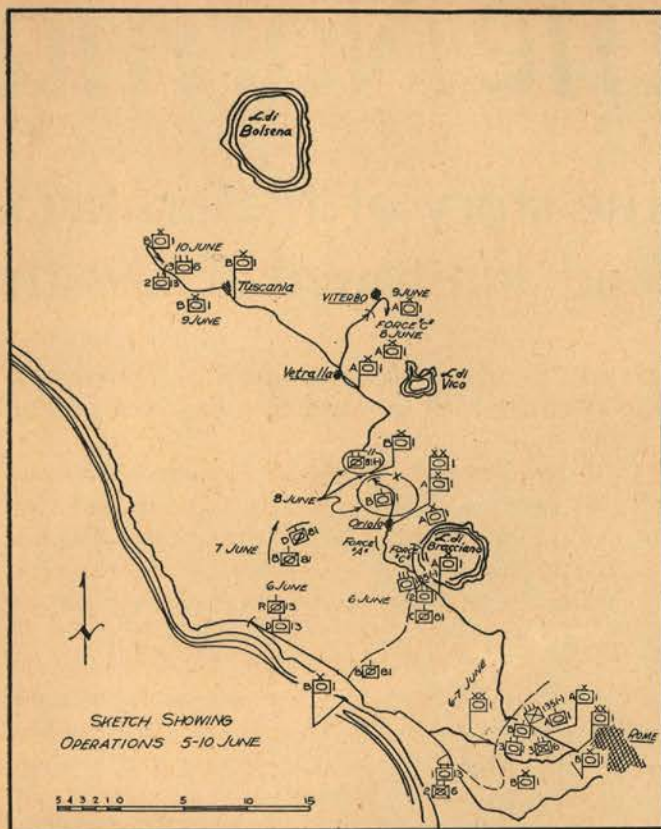
#### THE CAPTURE OF ROME

On June 3 at 1330 hours both combat commands launched another attack along the Anzio-Albano axis. The battering that the German forces had taken in the past several days had so reduced their combat strength that they were forced to withdraw, and opposition to the attack consisted mainly of mines, demolitions and scattered strong points.

Several thousand yards of ground were gained during the afternoon, and orders were issued to push the attack through the night to secure Rome.

A flying column of a company of light tanks and a





platoon of tank destroyers was sent ahead toward Rome at 1330 hours. An hour and a half later three task columns of CC "B" were dispatched to secure crossings of the Tiber River immediately south of Rome. The first elements reached the city limits of Rome at 1615 hours.

Combat Command "A", which had been ordered to secure the Rome bridges across the Tiber, was delayed in accomplishing its mission until 2400, mainly because of the throngs of enthusiastic Romans filling the streets, and unfamiliarity with routes through the city.

In the pursuit north of Rome to Canino and Viterbo, launched the following morning, considerable difficulty was encountered just across the Tiber because of the extensive demolitions. At one point, contact was made with an enemy strong point by an infantry division's artillery, which crossed (in march column) in front of the reconnaissance elements of CC "B." Considerable confusion resulted in the CC "A" sector when a second infantry division discovered that it had taken the wrong route and was forced to countermarch on the road which CC "A" was employing for a main axis.

In the earlier full-scale attack through the German defenses around Anzio and the subsequent attacks on Velletri and Albano, the medium tanks followed by tank destroyer units, had been sent well ahead of the main body of the combat command to provide the maximum shock action. Then the infantry following in mopping-up operations, had been closely supported by the di-

vision's light tanks which had reduced any strong points passed by the initial waves of armor.

For the the pursuit, conducted on two parallel routes north of Rome, a considerably different formation was used. Small task forces were organized. These consisted of a company of medium tanks, a company of infantry, and a platoon each of engineers, light tanks and tank destroyers. Since most of the strongpoints and road blocks encountered had to be attacked frontally, the infantry was carried on the medium tanks so that the full strength of the force could be developed in a minimum of time. To speed the operation further, a second "pursuit task force" of the same strength passed through a road formation as soon as the first force had reduced the strong point or road block.

### THE BOX SCORE

In the breakthrough and pursuit of the German forces 120 miles north to Canino and Viterbo, 2,805 prisoners of war were taken by troops of the 1st Armored Division. Destroyed or captured were 77 tanks, 115 trucks, 50 self-propelled and antitank guns, 17 artillery pieces and 6 armored cars.

In contrast to this, personnel losses within the division were light in proportion to the gains made. Equipment losses, although occasionally as high as 25 to 50 per cent of tank strength, were counterbalanced by the exceptional work of the division's ordnance battalion. On H Hour, tank strength was invariably above 90 per cent.

Although the largest single loss to the division's prisoner of war cages was the German commander, General Greiner, virtually every German unit—in rear as well as forward echelons—lost some men. The roster, made up at the end of the campaign, included nearly every unit that the Germans had had in that sector of the Italian front. Captured were numerous artillerymen, clerks pressed into front-line service by the heavy battle casualties, antiaircraft artillerymen, and even some representatives from hospitals and a quartermaster baking company.

General Greiner's division furnished 1,312 officers and men to the prisoner of war cages. Of these, 634 were from that division's 956th Infantry Regiment. Captured almost intact was one of the general's infantry battalions.

If War Department experience tables are taken as a key to enemy losses, the casualties inflicted by the 1st Armored Division alone on the 362d total approximately 6,500 men and officers killed, wounded or captured. From a D day strength of approximately 10,000 General Greiner had few combat troops left on June 10.

EDITOR'S NOTE: *The January-February CAVALRY JOURNAL will carry a third article by Lieutenant Gottschall on the employment of tanks in Italy. In it the author will discuss the day-by-day armored attack from Grosseto to Volterra—probably the worst tank country in Italy.*



# Miracle of the Normandy

NO more extraordinary and dramatic tale of naval construction and operation has ever been told than the story of the two artificial harbors, built in Britain and towed across the English Channel in sections to Normandy.

Detailed dimensions of the harbors are not given, but it is stated that each was designed to be "roughly the same size as Dover." Also speaking roughly, Dover harbor covers some 760 acres—a very useful sized port indeed.

The Germans had always thought that the capture of a port was necessary before a properly equipped army could be deployed for action. In Normandy, 4 Allied armies were landed and equipped, and within 11 weeks the battle which decided the fate of France had been fought and won. This was accomplished, it appears, without help from matériel landed at any French port.

Many months before the invasion it was realized by the administrative planners that even if French ports in working order could be captured quickly, the stores required for the armies would far exceed the capacity of the ports. It was, therefore, planned to land, over the

## The story of the artificial harbor land and towed across the English Channel

beaches, an estimated daily quantity of 12,000 tons and 2,500 vehicles of all sorts and sizes for a period of at least 90 days.

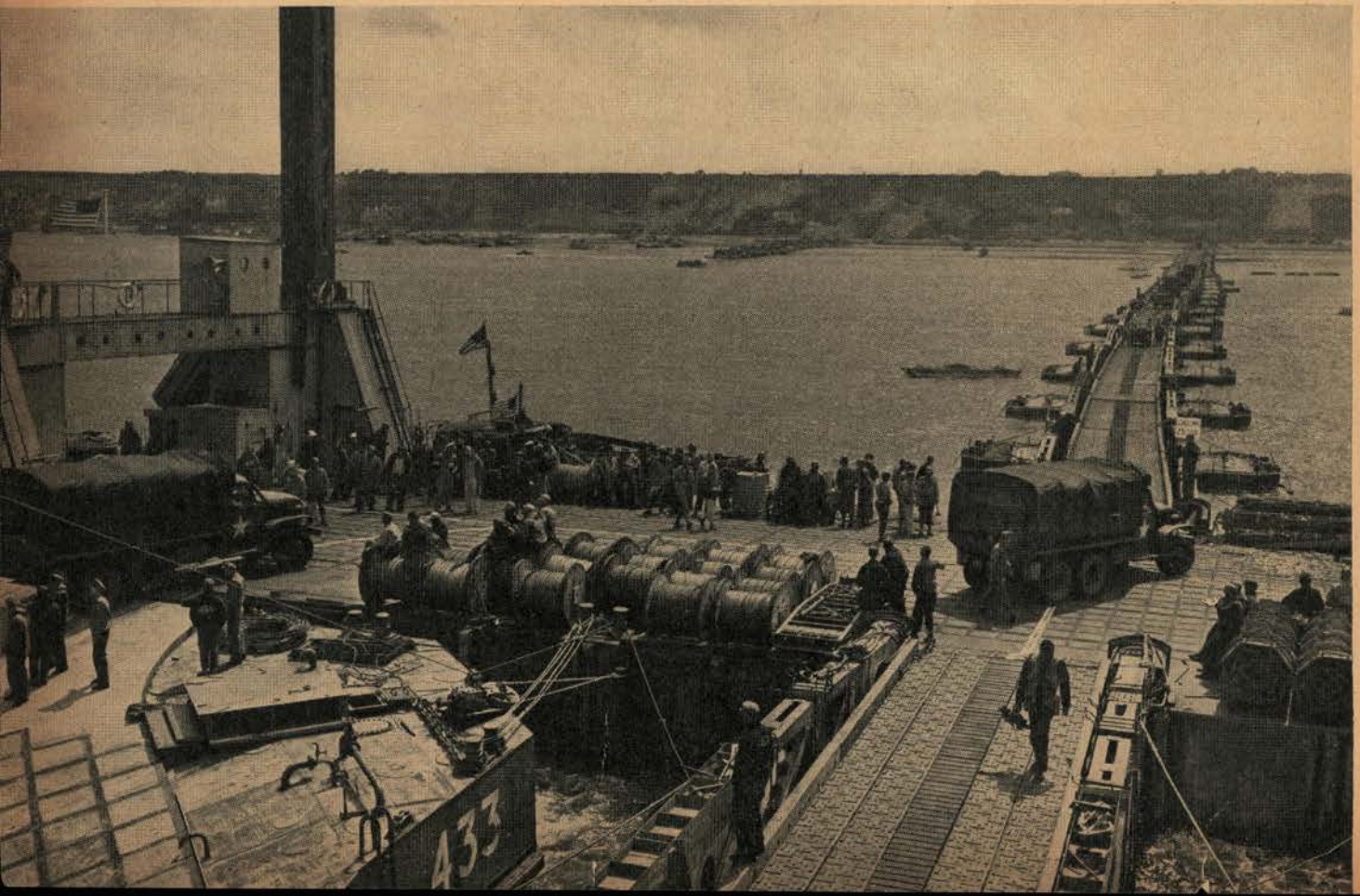
In the whole history of the world nothing like this has ever been done before, and to this fulfillment of what must have seemed a fantastic dream when the plan was first proposed must go a huge share of the credit for the brilliantly successful strategy of the European invasion.

### BRITISH LABOR

All the units composing these gigantic structures, including those required for the American part of the project, were built entirely in Britain by British labor. The construction of the concrete caissons alone necessitated the employment of 20,000 men; many thousands more were engaged on the other structures; and large

One of the most remarkable engineering feats of all time was the provision of two prefabricated harbors on the coast of Normandy without which the liberation of western Europe would not have been possible. These artificial ports, each the size of Dover, provided the invasion forces with the necessary stream of supplies and reinforcements. This unloading scene at the U.S. Mulberry occurred before the gale caused work on the United States harbor to be discontinued.

Official U. S. Navy Photo





# dy Beaches

ports, prefabricated in English Channel to Normandy.\*

numbers of workers in the steel and cement industries were switched to supplying the vast quantities of matériel needed.

A tremendous strain was placed on workers in the building and civil engineering trades, whose ranks were already heavily cut by military needs. The only men left in those trades were engaged entirely in war work or essential maintenance. To meet the new demand, therefore, workers had to be withdrawn from airfields, factories, military depots, grain silos and other construction work of equal importance. Skilled men were temporarily released from the army and vital industries.

All this had to be accomplished according to an unalterable schedule to meet the D Day deadline.

The work had to be done in special sites near deep waterways and equipped with dry docks where these could be spared from urgent shipping demands. This meant transporting the workers sometimes hundreds of miles from their families, often at a few hours notice. It also meant finding temporary housing, transport and feeding facilities for them.

The men—whose ages ranged up to 72—had to face the difficulties of getting to their jobs, which were sometimes a considerable distance from roads, over waterlogged country. Most of the work was done in the winter, in wet and muddy sites. In the final stages of the job, the men had to work at great heights over water.

During the construction period, London, where most of the work was done, suffered a series of air raids. This meant that artificial lights, under which work was being carried on throughout the night, had to be extinguished—leaving the workers groping in the dark on the scaffolding under the light of enemy flares.

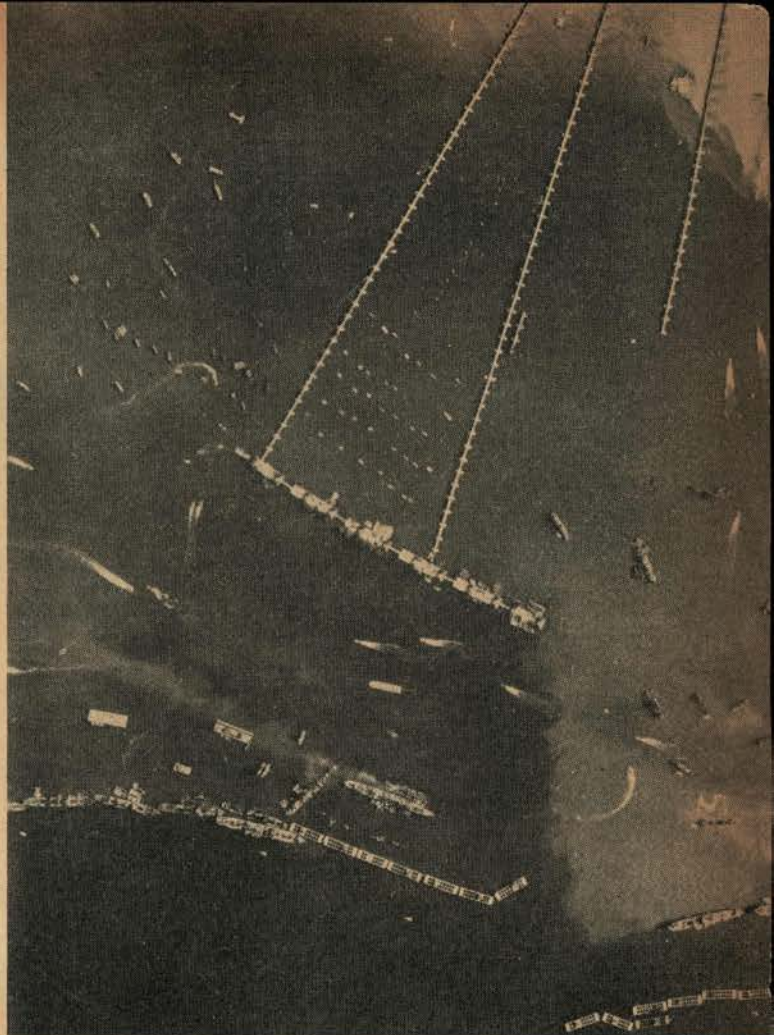
Despite all of these handicaps, the men worked willingly, long hours. How well they did their job has since been proved by the course of events in Europe.

## THE TASK UP TO D DAY

The construction of the prefabricated ports was a race for time. The main undertakings were:

1. The construction of the concrete caissons under Ministry of Supply arrangements, more fully described in Appendix A.
2. The prefabrication of the pier equipment and its

\*From SHAEF releases, through British Information Service.



British Official Photo

This aerial view of a section of the British prefabricated harbor on the Normandy coast shows two steel roadways supported on special floats leading from the shore to a wharf formed by spud pierheads. In front of the wharf is the special breakwater of concrete caissons and blockships.

assembly into towing pieces, more fully described in Appendix B.

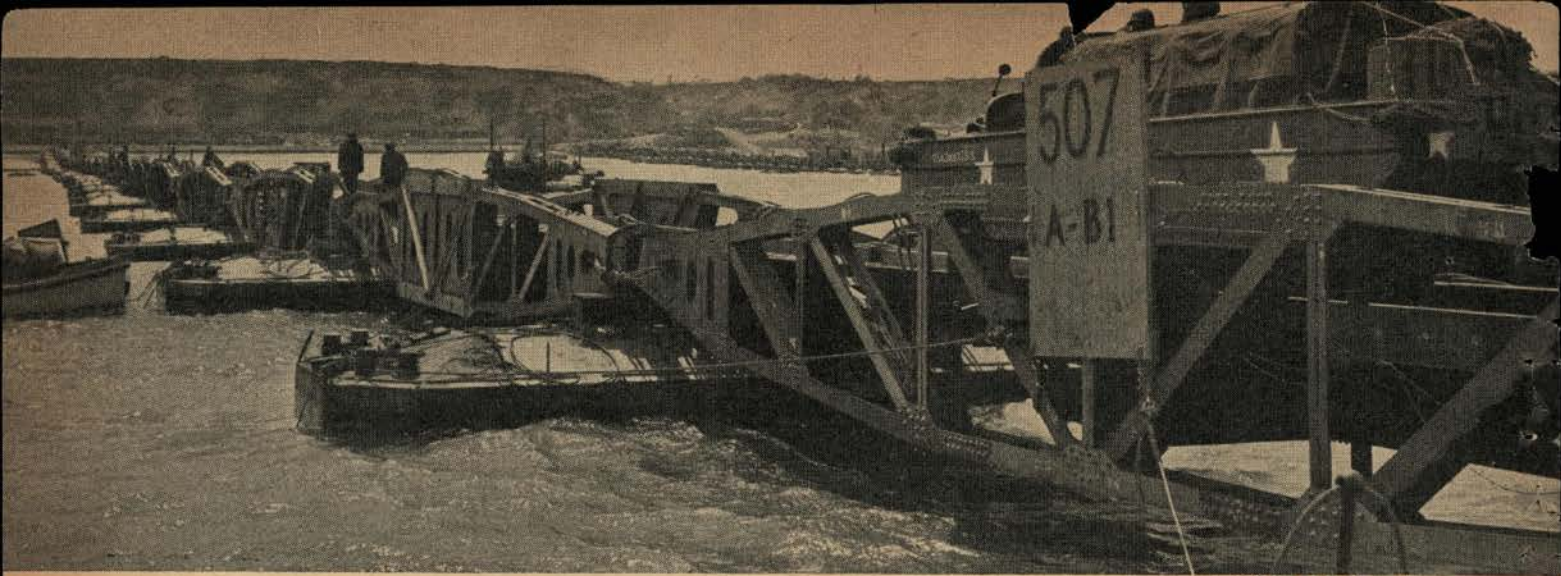
3. Construction of the floating breakwaters, more fully described in Appendix C.
4. Preparation of the blockships so they could be sunk easily and rapidly on an even keel.

These four in themselves were an enormous task in the time, without taking into consideration other tasks, such as:

1. Towing caissons, floating breakwaters and pier equipment from construction sites to assembly parks. In all, this amounted to 500 tows, some from ports as distant as Leith or Glasgow to the south coast.
2. Servicing and general preparation of the tug fleet for sea.
3. Forming and training the staffs and personnel of the Royal Navy, U. S. Navy, and Royal Engineers to carry out the operation.

The time was, in fact, inadequate to complete this program, but the essential equipment with a suitable proportion of reserve was assembled and ready to go on





Official U. S. Navy Photo

Close-up shows side view of the prefabricated steel roadways, hundreds of feet long. It is built of a series of small steel bridges joined by special means to give flexibility and supported on floats that rise and fall with the 20-foot tide.

the right date, although the personnel had not been able to complete a full program of training.

For technical reasons, the concrete caissons could not be placed in water deeper than  $5\frac{1}{2}$  fathoms, which meant that only a limited number of ships, such as the Liberty type, could use the harbor. It had been decided, therefore, to make an outer floating breakwater.

In order to provide immediate shelter for the host of small craft, it was then decided to make five short breakwaters, formed of blockships, along the invasion coast. These could be provided quickly and would give immediate shelter. Two of them would be incorporated in the artificial ports. Sixty ships of varying sizes and types were earmarked by the Ministry of War Transport for this purpose. These, including some warships such as H.M.S. *Centurion*, the French battleship, *Courbet*, and the Netherlands cruiser, *Sumatra*, formed a total length of about 24,000 feet of breakwater.

#### THE OPERATION

On D Day the first arrivals on the Normandy shore were the blockships, all of which, in spite of their age, made the crossing close behind the assault forces and arrived safely.

The ships were sunk by explosive charges, and their Naval and Merchant Navy crews were then returned to the United Kingdom. The whole of this part of the operation was completed successfully during the 5 days following D Day, and provided some very valuable shelter on the beaches during this critical period.

Meanwhile, the concrete caissons, floating breakwaters and piers were being towed across at an average speed of 4 knots, the total distance being over 100 miles. All the pieces towed very well in spite of their awkward shapes, except for the length of pier which had to be treated very tenderly in the choppy weather experienced.

The tug fleet available for towing the equipment totaled 85 vessels varying from very large U. S. tugs of over 1,500 H.P., to small tugs of 600 H.P., not generally used in the open sea. A minimum of 210 tows was

required. Allowing for a few losses by enemy action, the tows were expected to pull a weight of over 1,000,000 tons, and each round trip was expected to take three days. Luckily there were very few losses of tugs, and they carried out this unusual, strenuous and sometimes dangerous task with great patience, courage and skill.

On arrival, the concrete caissons had to be sunk accurately in places selected as a result of surveys made by a special party landed on D Day. In spite of the difficulty of picking the exact spot, the operation was carried out very successfully and very few caissons were out of alignment. By D plus 12 more than half the caissons were in position, and the harbors were already an impressive sight.

Similarly, advanced parties in special ships arriving on D Day had laid heavy moorings in deep water, to which the floating breakwaters were attached as they arrived. This operation was completed by D plus 8.

Meanwhile, port parties of Royal Engineers (or of Seabees in the American harbors), landed on D Day, cleared mines, cut ramps in the esplanades and prepared roadways down to the beaches ready to receive the shore ends of the piers. The port party also included a naval beach commander and a detachment from the Royal Marines.

In the setting down of the harbor the navy and the army worked hand in hand; soldiers were sailors and sailors were soldiers and Royal Marines were both. This operation was half finished by D plus 12, by which time one pier, hundreds of yards long with several pier-heads, was complete, and coasters could be unloaded at any state of the tide.

#### THE GALE

Up to D plus 12 the operation developed according to plan. Very few accidents of the sea had occurred, and air superiority was such that enemy interference had caused little trouble.

But on D plus 13 a gale blew up from the north-east which continued for three days—the worst June gale experienced for 40 years. Moreover, it came from



the worst possible direction as the harbors were exposed to its full force. Unfortunately, it caught the harbors at the half-way stage. The American harbor suffered most severely, as it was in a more exposed site, and the breakwaters were largely broken up, so much so that this, combined with the capture of Cherbourg, caused work on this harbor to be discontinued. The British harbor, protected to some extent by the Calvados Reef, suffered far less damage, and it was soon recovered and completed.

The gale took a heavy toll of shipping and craft, but this was largely damage rather than dead loss, except in the case of the experimental floating breakwater, which broke up and ceased to give protection. The shelter provided by both harbors and the three additional blockship shelters, which stood up well in the gale, undoubtedly saved great loss of life and equipment. Unloading on the beaches elsewhere was quite impossible, but during this critical period a small but important trickle of stores could be landed in the harbor. Even on the worst day 800 tons of gasoline and ammunition, as well as many troops, were landed over the piers.

All the pier equipment which was on the voyage across when the gale started was sunk, but only one concrete caisson failed to weather the trip. After the gale subsided, the work of construction continued as before, though a long spell of rough water prevented pier equipment from being towed over, so that the harbor was not unloading to maximum capacity until well into July.

Finally the artificial harbor was complete, and a port bigger than many with famous names had been built in a few weeks against a lonely French beach. Day after day, in all weathers, scores of ships of all sizes have moored within its shelter or berthed in unbroken lines alongside its quays. As a result, hundreds of thousands

The wharf at the British prefabricated harbor on the Normandy coast consists of seven specially designed "spud pierheads"—steel pontoons with a displacement of approximately 1,000 tons. Each pierhead is a "ship," complete with crews' quarters, generating sets, storage accommodations, etc. Running out from the shore to these remarkable pierheads are two flexible floating pier roadways.

British Official Photo



of tons of vital supplies, scores of thousands of men and many thousands of vehicles have been put ashore in the most rapid military build-up ever undertaken.

The prefabricated port made possible the liberation of western Europe.

#### APPENDIX "A"—CONCRETE CAISSONS

These caissons were made in 6 different sizes to suit various depths of water up to 5½ fathoms. The largest size had a displacement of 6,044 tons; the smallest, a displacement of 1,672 tons. When floating, the whole looked rather like a Noah's Ark without its roof; while, viewed from above, the cross walls made it look like an egg crate, as there was no deck.

Each caisson contained crews' quarters for use during the passage. The crews consisted partly of naval personnel for handling the ship and partly of the Royal Engineers (or Seabees) for carrying out the operation of sinking.

At a late stage, Bofors guns, 20 tons of ammunition,



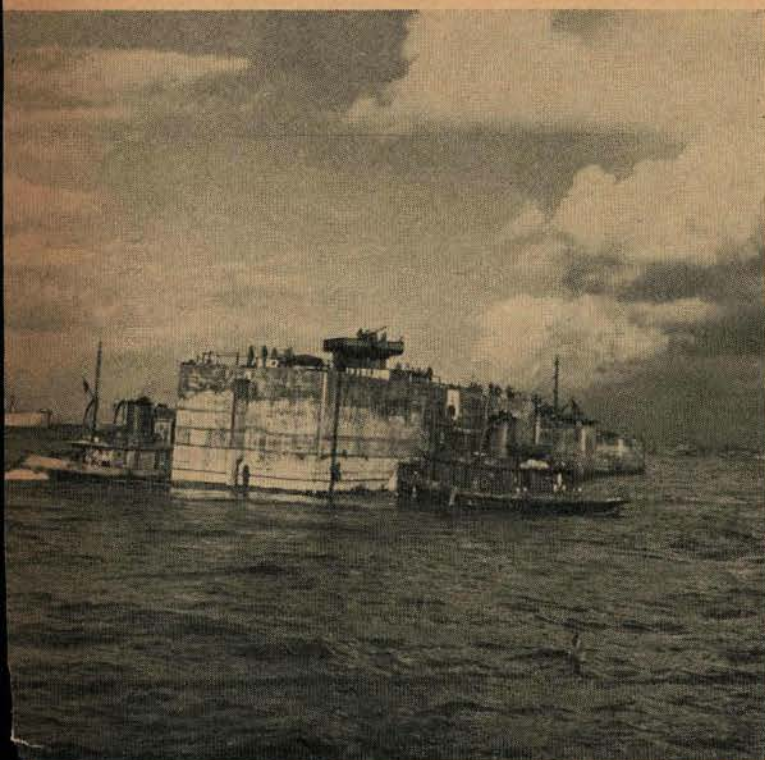
Official U. S. Navy Photo

View of the damage wreaked by the terrific channel storm which broke on June 19, directly after the completion of the American Mulberry near Colleville, France. Boats and ships of all sizes were strewn about in a jumbled mass of inchoate wreckage. Much matériel was irrevocably lost.

and rough shelters for a gun crew were placed on the top of most caissons as additional AA protection of the harbor.

Caissons were towed empty across the English Channel by one large tug (about 1,500 H.P.). On arrival they were maneuvered into position with the help of small tugs, and then the opening of special valves allowed water to fill the ship and sink it in place. Valves were left open so that the water level remained the same inside and out. It took roughly 22 minutes to sink the largest size caisson.





Official U. S. Navy Photo

Tugs jostle phoenixes into position before the seacocks are opened and the phoenixes sunk. In the background can be seen some of the vast flotilla of ships which thronged the channel off Omaha beach, waiting to unload matériel.

The number of caissons produced in various sizes were 60 (largest), 11, 25, 23, 17, and 10 (smallest), a total of 146. Construction was carried out in various ways:

	<i>Number Constructed</i>
In 8 dry docks .....	57
In 2 wet docks .....	18
In 12 basins .....	48
In 4 slipways .....	23
	<u>146</u>

The basins were holes excavated beside the Thames, in which the lower layer of the caisson could be built as in a dry-dock. A channel was then cut to the river and the caisson floated out to be completed in a wet dock berth. The required wet-dock berthing space amounted to 12,000 feet.

Construction sites were mainly in the Thames and Southampton areas, but outlying ones were as far distant at Birkenhead and Hartlepool.

The Ministry of Supply employed many of the leading firms of consulting engineers to assist in the project, and the actual work was carried out by 25 large contracting firms.

In all, it is estimated that the following main materials were used:

330,000 cubic yards of concrete, nearly 600,000 tons;

31,000 tons of steel  
1,500,000 super yards of shuttering

#### APPENDIX "B"—PIER EQUIPMENT

The piers consisted of a single steel roadway, carried on steel girders similar in many respects to an ordinary bridge, but so designed that there was such flexibility that the heaving and twisting effect of the sea could be withstood. Each bridge span was supported on special floats, some of steel, and others of concrete, also designed to withstand the sea and also to sit down on rock or sand when the tide receded. Sections of pier were joined together by special means to give flexibility and to ensure easy and rapid connecting up.

There was no limit to the length of a pier, other than the depth of water for successful anchoring; for towing, lengths of 480 feet were joined together.

At the shore end these piers were joined to a very stout steel shallow-draught float which could be pulled right inshore at high water.

At the outer end, they were linked to specially designed spud pierheads, which consist of a steel ponton with a displacement of approximately 1,000 tons. Each pierhead is a "ship," complete with crews' quarters, generating sets, storage accommodations, etc. Coasters berth alongside and unload direct into trucks on the pierheads.

The same pierhead with some extra fittings can be converted for use of L.S.T.'s. A sort of false beach piece made of steel is provided, and onto this the L.S.T. runs its bows and lowers its ramp. Vehicles can be discharged very rapidly by this means.

Pierheads were built as ships in various ports on the coast, from Leith round to Glasgow; 4 were built by the Royal Engineers at military ports in Scotland. Most of the remaining equipment was prefabricated all over the country and then assembled at army depots at Southampton and Richborough. Some 240 contractors were employed on this task, so that it is impossible to estimate the labor force involved. In all, 50,000 tons of steel were used.

#### APPENDIX "C"—FLOATING BREAKWATER

The floating breakwater consisted of steel floats, moored end to end in a long line and designed to have a damping effect on the sea in winds up to Force 5 which might be expected during the summer months.

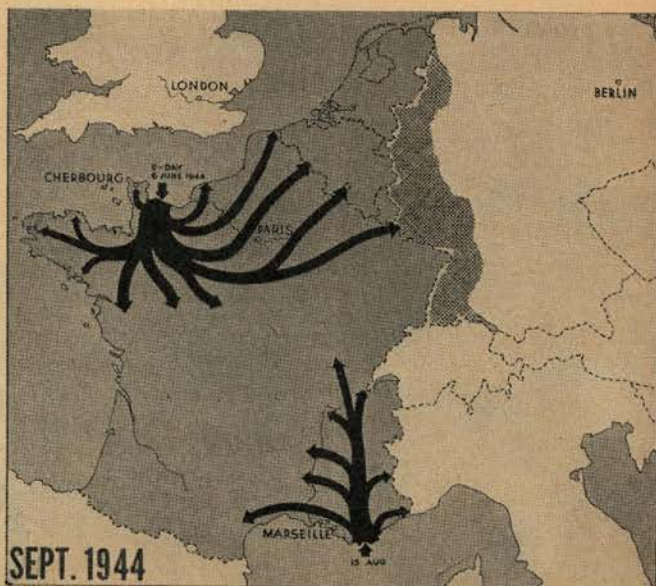
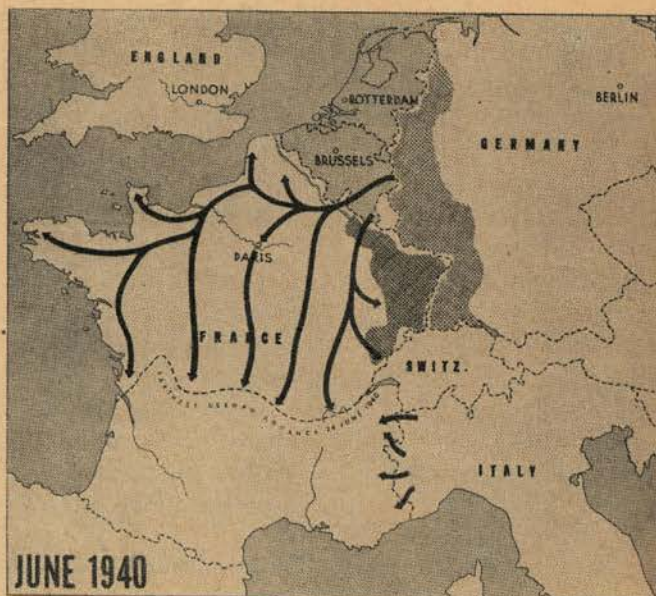
By March two rows had been completed and moored under constant observation off the south coast. From then until D Day, the weather was generally calm so that, although the breakwater gave great promise, no one could be certain how it would behave in really rough water.

Units were prefabricated, and then assembled at Southampton, where a labor force of 2,000 men was employed. It is difficult to estimate the number of men employed in other areas on prefabrication, but this is probably about 6,000. A total of 15,000 tons of steel was used in this construction.



# Conquest and Liberation of France

France built her Maginot Line in the ten years before 1939 with the idea that she should never again be invaded by the Germans. Opposite it the Germans threw up the Westwall or Siegfried Line. In the months between September, 1939, and May, 1940, troops in both fortifications maneuvered but contacted each other only in patrols. Nazi troops hit France at the northwest border after overrunning Poland, Denmark, Norway, the Netherlands, and Belgium and struck where the Maginot Line ended and its weaker extension at the boundary of Belgium began. Fast motor columns drove for the Channel and split the Allied forces in two. A week after the Nazis reached the sea May 21 came the miraculous withdrawal from Dunkerque in which 325,000 Allied troops escaped the German trap. At this helpless moment France was attacked from the south by Italy on June 10. The Germans entered Paris four days later and while some units pressed southward others swung around behind the Maginot Line. By June 24 the fighting was over. The armistice split France into occupied and unoccupied areas, put more than half the French population under German rule, placed the cost of supporting the occupying forces on the French people and gave Germany the best industrial and agricultural areas. In November, 1942, when the Allies invaded North Africa the last pretext of a French government was swept away as the Germans moved into Southern France. The freeing of French soil was begun June 6 and the plan that was opened with the Channel crossing is still unfolding. The invasion of Normandy, the drive through Brittany, the landings on the south coast of France, the invasion of Germany are only continuations of what started long before.





# BLITZ THROUGH F

## 4th Armored Division Spearheads

**I**N 9 weeks of combat (from July 17 to September 20) the 4th Armored Division, commanded by Major General John S. Wood, spearheaded the armored advance of the U. S. Third Army from the hedgerows of Normandy into the German-annexed territory of Lorraine.

In those 9 weeks an 800-mile right hook was thrown from Normandy through Brittany across France, into Lorraine, and over the Reich's self-proclaimed frontiers. During the advance, tanks put up to 1,900 miles on their mileage meters, destroyed 400 enemy tanks (up to September 27), captured 15,000 counted prisoners, killed 5,000 Germans, and knocked out 1,500 miscellaneous vehicles and 140 large artillery pieces.

The 4th Armored Division (activated April 15, 1941) was a part of Lt. General George S. Patton's Third Army as organized in Great Britain before the invasion. After landing in Normandy the week of July 12, it was temporarily attached to the First Army until the Third was activated during the fighting in Brittany.

Jumping off from Raids, Normandy, on July 27 after an intense air and infantry attack on the enemy front, the division cut off the Brittany peninsula in 10 days of lightning movement and fighting that outblitzed the best German panzer achievements. Racing through Periers, it took Coutances and Sartilly and after savage fighting captured the key city of Avranches and plunged into Brittany. It then marched alone for 140

miles to contain Rennes and capture Vannes on the south coast of Brittany and seal off the peninsula.

The division, again a part of the Third Army, also took Nantes and contained Lorient in a move that trapped thousands of Nazi navy personnel.

When the armor penetrated Brittany, the supporting infantry were left far behind. Actually, the division became an armored island in the midst of thousands of Nazi troops. The enemy which escaped destruction were disorganized and bewildered by the penetration, during which marches of from 50 to 100 miles were made in less than a day.

Enemy units contacted and defeated included the 5th Paratroop Division, the 17th SS Goetz V Berlichingen Panzer Grenadier Division, the 2d SS Das Reich Panzer Division, the 116th Panzer Division and the 77th, the 243d, 265th, 266th, 353d, and 709th Infantry Divisions, and supporting and attached units.

After contact with the 4th Armored, the Nazi 77th, 91st, and 243d Infantry Divisions were considered destroyed, the 6th Paratroop Regiment was wiped out, and three regiments of the 5th Paratroop Division were severely beaten. The 56th Security Regiment, which fought in the Vannes area, and the 281st OST Cavalry Battalion were liquidated.

With its extended supply lines in Brittany, however, the 4th Armored Division was under constant threat, and it was necessary for tanks and armored cars to shepherd supplies.

A U. S. tank of the 4th Armored Division churns deep into the mud as it makes a crossing of a canal in France, Sept. 20.





# RANCE

## Third Army

After sealing the peninsula the division turned to the east. Making a 153-mile march in two nights and a day, Combat Command "A" moved on Orleans from Nantes on August 15. The city fell to the armored thrust after sharp fighting in which two German regiments of artillery and infantry were both virtually destroyed. As a result, Paris was outflanked from the south on a line along the Loire River.

Assembled in the vicinity of Orleans, the division then resumed its drive to the east on August 21. By the afternoon of the same day CC "A" sped to Sens and drove into the heart of the city. Catching the garrison by surprise, with officers on the streets in dress uniform, the tankers eliminated the enemy and captured enormous stores of fuel, food, and military equipment. Then quickly securing the city and moving across the Yonne River to secure the bridgehead, CC "A" met and destroyed an SS brigade on the outskirts of Villeneuve.

Meanwhile Combat Command "B," moving to the south, captured Courtenay and moved on Montargis from the east. A large enemy pocket of infantry and artillery was reduced north of Montargis and the evacuation of the city forced on August 23.

The division next secured a bridgehead across the Seine River at Troyes August 26 after fierce fighting in which one column of CC "A" routed an SS brigade. The attack was made in vehicles spread in open desert formation down a 3½-mile slope under heavy enemy fire. According to a prisoner of war, only 40 per cent of the 51st SS Brigade was left after the armored attack.

Three days later the division made three crossings of the Marne River and captured Vitry le Francois. Chalon-sur-Marne, St. Dizier, and Ligny fell rapidly. An assault led by a light tank company driving through a torrential rain at 40 miles an hour took Commercy, captured the bridge across the Meuse, and seized the high ground east of the river.

Halted by command of higher headquarters, the 4th Armored held the ground for consolidation by infantry which followed and prepared for an assault on the Nazi defenses of the Moselle River.

On September 11, supported by doughboys of the 35th Infantry Division, the tanks burst across the Moselle south and then north of Nancy. Routing Nazis who had been ordered to hold the Moselle line throughout the winter, the division's two armored columns swept into Lorraine to come together east of



Nancy in a move instrumental in forcing the enemy from that city.

As CC "B" forced the south crossing at Bayon, some tanks forded the 25-foot deep dry canal and the river before engineers could span the blown bridges. The north crossing at Dieuleuard was effected by CC "A." The pincers closed in the vicinity of Arracourt and cut across RN 74, main highway northeast from Nancy.

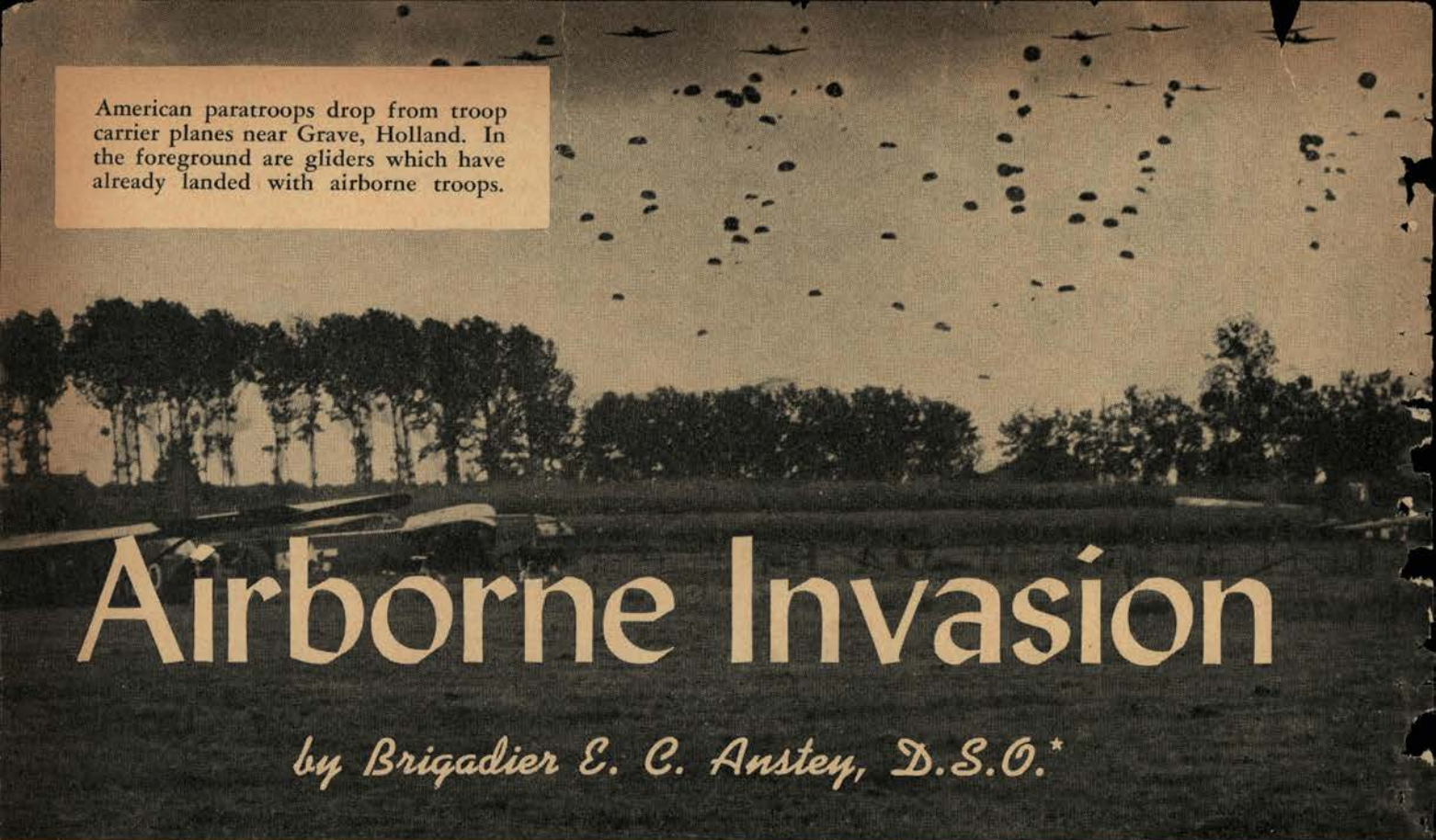
While the massive Moselle bridgehead through Nancy was being consolidated the division withstood the heaviest German tank attacks launched in the battle of France. In two weeks of the unabated armored battle (up to September 28) Mark IV, Mark V, and Mark VI tanks, supported by Grenadiers were thrown back with heavy losses to the enemy. The American tankers destroyed as many as 350 German tanks, many of them Mark V Panthers, at an average rate of 8 enemy tanks to one of their own.

The Germans, who first described the division in broadcasts as "The American Elite 4th Armored Division," soon used less complimentary phrases in describing the division as a band of ruthless fighters. The German soldier knows it as the "4th Panzers."

A German colonel of SS troops who was captured by the 4th Armored near Lemoncourt when the division broke into the German rear areas across the Moselle, said:

"Having been a commander of army units in Russia, covering an area of approximately 1,500 miles, I must admit that the American troops are not only equipped with the best matériel, but what strikes me especially is the excellent organization under which these men function."





American paratroops drop from troop carrier planes near Grave, Holland. In the foreground are gliders which have already landed with airborne troops.

# Airborne Invasion

*by Brigadier E. C. Anstey, D.S.O.\**

Signal Corps Photo

THE use of airborne armies is the latest offspring of the military art. Its birth was slow and painful. The conservatism of military thought was slow to adopt a novelty. It is curious that the Russian originators of the concept have confined themselves solely to parachuting, while their German disciples, who added air transports and gliders to their flying armies, were so disheartened by their first great airborne operation in Crete—successful though it was—that they refused to face again such losses as they then suffered and have since employed their picked and highly trained paratroops as infantry. It was left to the British and Americans to develop the airborne division of all arms.

A great deal of thought and experiment was necessary to devise the best organization and equipment for an airborne division, and to settle the principles of its employment. More and more, as time passes, logistics dominate military practice. Supply and transport have always controlled military operations; but in this war their problems have become more acute, more complex, and more dominating than ever before.

This is as true in airborne operations as in any others; logistics have dictated both airborne strategy and tactics. The simplest way of appreciating these logistical problems is to work backwards from the tactical to the administrative.

Tactics demand that the troops should be landed in the shortest possible time in a concentrated space so that the enemy's defenses should be surprised and the full airborne force ready for action before the enemy's reserves can arrive. From this it was deduced that it

would be necessary for air transports to arrive on each landing ground at the rate of one aircraft every ten seconds. That was the fastest rate of landing believed possible to attain, and then possible only in daylight.

From the airman's point of view it was desirable that the whole landing operation should be over in half an hour so as to avoid a heavy concentration of enemy fighters gathering against the air fleets. As one machine-gunner-10-seconds was the maximum speed of arrival, it followed that the size of the airborne force which could be landed in half an hour depended on the number of landing plots or areas available. An airfield or open zone of good size could, of course, be divided into several landing areas. Such, therefore, were the tactical conditions which air administrative staffs had to meet. They had to arrange for a stream of aircraft flying into each landing area, at intervals of 10 seconds.

At first sight the problem appeared insoluble, for it was not possible for heavy transport planes to leave any airfield, however large and well-equipped, at 10-second intervals. When the problem was being studied, the minimum time taken by heavy bombers to leave the ground in succession was three minutes. By combined study, training in Britain, and the strictest ground discipline and control, the time was cut to 30 seconds. It was an astonishing feat of efficiency; but it was clear that it was the highest speed that could be attained.

A system was accordingly devised by which the aircraft taking off at thirty-second intervals, flew in the opposite direction to their objective for perhaps 10 miles and then turned on to their true course in formation on a timetable of seconds, which brought them into file ten seconds behind one another. So far so good.

\*Military correspondent of the *Sunday Times* and *Daily Sketch*, London.



The next problem was to ensure that the squadron arrived at its objective in exact time and fitted into its proper place in its own stream without jostling anybody else. Obviously, on the basis of one stream per landing area, and the larger the force, the more numerous the streams; and consequently the more numerous the points of departure. For the Eindhoven-Arnhem operation, for instance, 25 airfields in Britain were used as airports of departure. Moreover, the fighter and fighter-bomber escorts had to be considered.

They were planned on a very large scale, for transport machines flying in low are extremely vulnerable, not only from fighters in the air but from flak on the ground. Escorts had to be provided both above and below the air fleets, fighters above and fighter-bombers below. It is not sufficient to attain general or local air superiority in the theater of war. Superiority has to be asserted and maintained during the whole operation.

Accordingly, while fighters accompanied the fleets and patrolled at high altitudes, fighter-bombers not only attacked and silenced the ground defenses before the transports arrived but, weaving in and around during the whole operation, kept the guns silent. Enemy gun crews were not only driven under cover but were kept there. That was why the percentage of loss amongst the air transports during the initial landing was as remarkably low as only 2 per cent.

It can be seen, therefore, what a massive operation the Eindhoven-Arnhem landing was. The British division was given the task of capturing and holding the most advanced point, the Arnhem bridgehead; the supporting forces of the operation were carried out by American and Polish troops. The 9th American Transport Carrier Command and the British 38th and 46th Groups provided the machines. They used 25 airfields, from all of which the streams had to converge like tributaries joining a river until they should flow evenly and punctually onto the landing fields in Holland.

That is a problem with which military staffs are familiar. On land it presents small difficulties when roads are adequate. But the air staffs controlling the air armada were dealing with aircraft of 12 different air speeds. The airfields from which they came covered a large area, in which wind conditions varied. Nor would these conditions be known accurately until the hours of start approached. Schedules had to be drawn up, therefore, accounting for all these conditions. Routes were chosen on to which the streams converged, avoiding enemy antiaircraft defenses, zones in which his fighters might be active, or areas where other Allied air forces might be coming or going on other missions.

On these routes 9 control points, easily recognizable from the air, such as the North Foreland—a promontory on the Kentish coast—were chosen and the hour, minute and second at which each machine should pass the point were tabulated.

At the last possible moment the direction and strength of the wind for each route was ascertained and

notified, and the necessary adjustments made to the timetables.

A little thought will show that these tables, on which the accuracy of the whole operation hung, could not be completed until the landing grounds in each zone were known. Those grounds had to be decided in concert with the airborne staffs, for their choice was governed, so far as air technique allows, by tactical considerations. The soldier says how he would like to be landed; the airman explains how far those wishes can be met; the soldier then amends his plans accordingly; and the two staffs begin to work out their orders.

From that moment, some time elapses before the expedition is ready to start. It will suffice to say that it is anyhow more than 24 hours. If any change is made in the army plan after the final conference, confusion and delay may be caused. This preparatory period is longer on the army than on the air side because the army detail is greater and more complex.

It is essential that every man in the airborne divisions should know exactly what his job is and what his commander's intentions are. Similarly, the briefing of air crews must be so thorough that every member knows all there is to know about the operation.

From this brief survey it is evident that an airborne operation takes time to arrange. Many which have been prepared since the landing in Normandy have been cancelled, either because the land forces overran the objectives before the air forces could arrive, or because of bad weather or some other disturbing cause.

The air staff work has been brought to such a pitch that the orders of a group for an airborne operation can now be produced in 24 hours. But the military side is bound to take longer than that. It is possible, however, that experience will reduce it. In that case the value of an airborne force to an army will be greatly enhanced.

The first two British gliders to touch down at Arnhem September 17. Damage to gliders was caused by wing tips interlocking. In the foreground are a trailer and jeep which have just been unloaded from the glider. Nearly 2,000 British troops of the Airborne Division were evacuated from Arnhem after their stubborn eight-day fight.

British Official Photo





# Greece—A Résumé, October, 1940-October, 1944

*by George Haniotis*

TODAY the Germans are pulling out of Greece as fast as they can, and one Greek city after another again breathes the air of freedom. Another dark parenthesis in the long history of Greece is closed, and the free people of the mountains and valleys, forgetting the miserable conditions in which the Germans left them, are celebrating their new freedom with an enthusiasm touching hysteria.

History will record the resistance of the Greeks to the Axis powers as an outstanding example of patriotism. When Greece was attacked by Mussolini's legions in October, 1940, the situation in Europe was such that any attempt on the part of a small people to defy one of the Axis partners seemed to be sheer folly. Poland, Norway, Belgium, Holland and France were prostrated under the Nazi heel. England was being bombed constantly by the Germans who hoped to break the nerve of the British people, and there was no indication of what the outcome of the war would be. This situation alone would have been enough to make any nation think twice before attempting to defy the armies of Mussolini and Hitler. Greece, with a little less than 8,000,000 inhabitants and with an army, small in number, poorly equipped and inadequately trained for modern warfare, and with almost no hope of getting any substantial help from any quarter, had to face the mechanized might of Mussolini, behind whom stood the German war machine—considered at that time to be unbeatable.

Moreover, the Greeks did not have a wealthy country to defend, nor did they have even a tolerable standard of living. Most of the soldiers who were to fight had no worldly possessions to fight for. A compromise with Mussolini, who demanded bases in Greece for his war against the democracies, could hardly have found any critics if material values alone were to be taken as a criterion. But the Greeks did not stop to ponder on the inequality of the struggle nor to compare war logistics. Their country was attacked and that was a very good reason to fight. It has happened often before in their long history.

This determination to die rather than yield had far-reaching consequences. For several days the Greek forces fought a delaying action until mobilization was completed. Then they counterattacked and rolled the invaders back beyond the Greek frontier and deep into Albania.

The Italian attack was a masterpiece in its conception. Instead of attacking at the northern end of the Greek-Albanian frontier, using Koritza as a base and driving to Salonika (a plan that Greek headquarters had long anticipated) the Italian command chose to attack through the Pindus Mountain Range to reach Metsovo,

thence across the plain to the rail center of Larissa, and cut Greece in two. At the same time, sent they another column driving southward toward Jannina.

The bulk of the Greek forces covering the frontiers were up north in the Koritza sector. Thus the forces defending the Pindus were very small. Early on October 28, 1940, Italian columns penetrated into the Pindus region against weak opposition, while in the Koritza section farther to the north they were held at a standstill. According to a high foreign military authority, the Italians had a masterly plan—but no soldiers to put their hearts into it. The Greek headquarters had guessed wrong—but had soldiers who were ready to die in defense of their homes. In the Metsovo and Jannina sectors there were cases of Greek battalions having to face whole divisions.

The most dramatic episode of the war (which has not been sufficiently known) was the penetration, almost unnoticed, of an Italian column through a ravine of the Pindus Mountains to within ten miles of Metsovo. The capture of Metsovo by the Italians would have brought them onto the Larissa plain and would have ended the war disastrously for the Greeks in a very short time.

As the Italians approached Metsovo, however, a miracle occurred. The Greek defenders climbed up the steep mountains around the valley and, flanking the Italian column from both sides, fought for three days without relief, while the women of the near-by villages helped the men by bringing ammunition high up to the

Greek sentries guard a vital pass in the Pindus Mountains during the Greek-Italian war. Italians were turned back.





peaks where only goats were thought to be able to climb. In view of the danger, a cavalry regiment was dispatched from the northern sector and, after a forced march, arrived in time to support the defenders. The Italian column, which consisted of the Italian Julia Division and other mountain elements, was then ultimately forced to retreat in confusion. *That was the turning point of the Italian invasion.*

With this precious time won, Greek mobilization was completed. Greek citizens offered their private cars and commercial vans to carry the troops to the front. The Greeks then counterattacked and by November 10th, two weeks after the invasion, the Italians were in full retreat.

By the end of February, 1941, the Greek army had captured many Albanian towns, many thousands of Italian prisoners and abundant matériel. The captured matériel, which the Greeks had needed badly, was used to advantage against the Italians.

It is worthwhile mentioning that when the Italians attacked Greece, the Greek air force did not even number 100 planes and most of them were obsolete. The military achievements of the Greek soldiers were not, as is apparent, the result of preparation, but rather the result of the will to fight for their country.

For six months the Greeks kept their country free from the Italian invaders until the Germans, losing patience, broke through Bulgaria and Yugoslavia into Greece. With the Germans breaking into Greece behind the troops fighting the Italians in Albania, collapse was inevitable. The help sent Greece by the British after the German attack was "too little and too late," and in spite of the gallant fight of the British troops, the last Greek territory was occupied by the Germans by the end of May, 1941. Thus the Greek army had kept the Axis busy for seven months.

The Nazis never forgave the Greeks for upsetting their timetable. Greek resistance to the Italians and the inability of the latter to finish the job obliged the Germans to send their troops to eliminate that small country which was serving as an obstacle to their plans. Military critics believe that Greek resistance gave valuable additional time to the Russians. But one should not forget the moral effect of the determination of a small people to face death rather than accept slavery at a time when the Axis was astounding the world with its military successes.

There were no means of evacuating the Greek forces before the Germans occupied the country. When the Greek soldiers received orders to disband, they took their rifles with them and hid them in cellars and caves, waiting for a chance to use them again in organized guerilla bands. Guerilla warfare has been a tradition of the Greeks since their war of independence against the Turks in 1821.

By using British boats many soldiers managed to escape, and even after the occupation many more slipped through the Nazi lines and reached Egypt, where the nucleus of a new Greek army was being formed by the Government-in-exile. Both inside and outside Greece



Greek troops rest in the mountains of Albania in 1940-1941. The picture gives some idea of the physical difficulties of campaigning in the wild snow-covered countryside—further tribute to the magnificent morale of the Greeks in their sturdy, determined resistance to Axis aggression.

the fight continued. Two infantry brigades were formed in Egypt. These, together with the Greek air force and the Greek navy have rendered valuable service to the Allied cause in the Mediterranean theater of war. Greek troops fought at El Alamein, in Tunisia, and recently captured Rimini in Italy, and the Greek navy participated in the operations in Italy and southern France.

Meanwhile, Greek guerillas at home were relentlessly harassing the Germans. The population of occupied Greece, in spite of privations, mass executions, and starvation, kept the fire of liberty burning in their hearts.

On October 12, 1944, the Athens radio station again acquired its own soul and its own voice and announced to the world that "Athens is free." A few days earlier British detachments and air force units had landed to the south in the Peloponnese and had cleared the region. As soon as the situation farther north in the Balkans presented serious threats of entrapping them in Greece, the Germans started concentrating their troops in various centers for evacuation. They were harassed and attacked by Greek guerillas, who by their action precipitated the evacuation.

The sun of freedom which has arisen again over Greece, shines over material ruins. Seldom in history has a people attained in such a short period so much glory in the way they defended their freedom, and so much misery in what they have suffered. The lack of food, the unparalleled inflation, the complete disorganization of transportation, the lack of medicines, and so many other results of the German occupation present a very serious problem. Nevertheless, the Greeks are jubilant over their freedom and hopeful for their rehabilitation.



# Christmas Message

To the Officers and Men of the Army Ground Forces:

This is our fourth Christmas at war, and I should like now to reassert my pride in our war Army and my gratitude for its splendid accomplishments.

On our first war Christmas, while both our enemies roamed almost unchecked across the lands and seas they had marked for plunder, virtually none of our ground combat forces had yet left the United States. Today the story is happily different. Nearly all our ground forces are arrayed in massed strength in every corner of the world—not as green recruits thrown hastily into a last-ditch defense, but as a well-trained, highly skilled, mighty combat Army dedicated to the destruction of hostile forces, the liberation of conquered nations, and the establishment of lasting peace.

The cost of victory is never small, and we have had to pay a fair price so far. It is the lot of the ground soldier, and particularly of the Infantryman, to come to closest grips with the enemy, and both our enemies—strong, cunning, and resourceful—have clearly shown their intention not to yield without having first exacted all toll possible of our men.

In the campaigns of the last three years, many of our ground soldiers, including General McNair, our great former commander, have given their lives in battle. For them, there can never be another Christmas. For those of us who must carry on the fight for which they gave so much, no Christmas can be truly merry until we have finished the job they started.

I know that you American ground soldiers will finish that job, and finish it well. I have seen you grow old and wise in the ways of war, out-smarting our enemies, winning the admiration of your allies and the everlasting respect of your fellow countrymen. You deserve a fine Christmas. To those of you who are still waiting your turn to meet the enemy and hasten our victory, and to those of you who have already achieved so many great triumphs, I extend my sincerest congratulations and wish you the best Christmas a soldier can have.



COMMANDING GENERAL, ARMY GROUND FORCES.



# Editorial Comment

## Our Fourth War Christmas

Our fourth war Christmas finds a war-weary world still embroiled in a titanic struggle—a bitter life and death struggle brought about by a group of maniacs who sought world domination and the enslavement of peace loving nations. Many countries have been ravaged by this ruthless enemy. Cities, towns, and villages have been demolished in wanton carnage.

You in our armed forces overseas have seen the death and destruction in countries there and are making certain that a similar fate will not befall your own home and loved ones. You are doing your utmost to bring the war to a speedy and victorious end. You are imbued with an indomitable spirit and determination to win the fight regardless of the difficulties involved. You will continue to fight and gain that victory because you have something within you that the enemy does not have. It is faith in God—faith in your country, faith in yourselves, and faith in prayer.

So to our fighting forces everywhere we send our Christmas Greetings with a humble prayer to Almighty God to give you continued strength and courage until victory brings you safely home to a "Peace on Earth," resolutely won and firmly established.

1 1 1

## Message from Japan

The following 100-word letter from Brigadier General Clinton A. Pierce, received by his cousin Walter E. Blythe on August 10, 1944, is published here as a matter of interest to old friends of this one-time cavalryman.

As a colonel of cavalry, General Pierce commanded the famed 26th Cavalry Regiment (P.S.) during its valiant rear guard action in the Philippines. He was later promoted to a brigadier general during the fighting on Bataan, served with General Wainwright throughout the Philippine defense, and with the surrender of Corregidor became a prisoner of the Japanese.

General Pierce's letter is one of the few received from cavalry officers who are held as prisoners of war in Japan.

13 October 1943.

Dear Cousin:—

Your sketch and note sixteenth April, 1943 received. Many thanks news, wishes, cartoon. Congratulations, Grandpappa—my best Ruth, Clinton.

Health good; climate dry, temperate, working on farm, studying, reading spare time.

Glad Mother well. Are allotments her continuing and sufficient? No mail from her. Have written.

Remember Clark Lee, Luzon and Bataan. Glad he got out. Would like read book.

Nice you contacted Al and Herb. Trust they received my letters Stotsenburg, antebellum. Margaret mentions Herb and Rogan Morrison.

Please circulate. My best Elizabeth, Uncle Gene, you. Chin is up. Plan for happy reunion.

CLINT,  
CLINTON A. PIERCE  
Brigadier General  
U. S. Army.

To Walter E. Blythe,  
9123 — 112th Street,  
Richmond Hill, New York, U.S.A.

1 1 1

## Horses on Leyte

With 6th Army Forces on Leyte, P. I.—Nov. 2—(Delayed)—(AP)—Among the more prominent repatriates on Leyte are 7 army horses. . . .

For almost 18 months since the 1st Cavalry Division came overseas it fought on foot like many an infantry division. . . .

Soon after landing near Tacloban on October 20, the dismounted cavalymen fought their way across Tacloban's race track, and not a man in the outfit missed the sight of several horses roaming near by.

Even Major General Vernon Mudge cast an appraising eye on that horseflesh. It was not long before Captain Don Walton, commanding reconnaissance troops, received an order to round up all available horses in the area. He delegated the job to 1st Lieutenant Muir Humphrey, whose men picked up several horses in rice paddies near the race course, and much to their amazement found that they were American cavalry horses which had belonged to the 26th Regiment at Bataan.

Filipino guerrillas turned in some ponies and farmers contributed a few more that they had corralled. The natives also brought up all the old saddles they could find, including three regular army saddles which had survived the Japanese occupation.

The above dispatch from the Philippines is interesting not only because of the recapture of several horses of the 26th Cavalry, but also because of the fact that all available horses and saddles were collected from guerrillas and natives for use by the reconnaissance unit.

In his Notes in this issue, General Hawkins comments on a previous experience in 1898—when dismounted cavalry was sent to the Philippines and fought as infantry. When a few horses were sent over the



following spring, the mounted troops proved so valuable that the whole regiment was remounted.

This experience, coupled with the exploits of the 26th Cavalry in Luzon, exemplify the need for mounted cavalry in the Philippine campaign.

The 1st Cavalry Division has been and is fighting successfully without its mounts—but may history repeat itself and the need for cavalry become paramount.

### Maintenance

I call on each man and woman serving with the Army of the United States to unite in a campaign of Preventive maintenance . . . to abolish the menace of mechanical failures . . . this is your responsibility. . . .

SECRETARY OF WAR STIMSON.

The difference in taking 5 or 10 extra minutes to make sure your vehicle will keep rolling, or letting it go for the maintenance section to repair for 5 or 10 hours may not only cost your life, but may mean the annihilation of a whole regiment or division. Any driver who wilfully or carelessly neglects his vehicle is as guilty of sabotage as though he had actually tried to destroy the vehicle.

LT. TRAVIS CRAMB,  
Motor Office of the 30th Cavalry.

The military value of an armored element is directly dependent upon its ability to utilize its inherent speed, mobility, protective covering and heavy firepower. Therefore, it is obvious that preventive maintenance in every unit must be brought to a high degree of excellence . . . maintenance is a factor which all commanders must consider at all times. Where you find excessive breakage, you find faulty leadership . . . the driver of each vehicle is the first echelon of maintenance. He must be fully trained and qualified to perform his maintenance duties promptly and intelligently. A failure on the field of battle usually results in needless risk of life and equipment.

MAJ. GEN. A. C. GILLEM, JR.  
Commanding General of the Armored Command.

### Hardening of Horseshoes

The following paragraph, recommended by Colonel Albert E. Phillips, will be published as a change in TM 2-220 and filed for inclusion in the next revision of FM 25-5.

"As horseshoes now issued on revised specifications are of 1025 carbon, hardening of the metal through its entire thickness is obtainable by heating to a red glow and cooling in water. The resulting temper gives a reading of 36 Rockwell "C" Test, as compared with a reading of 29 for untreated high-carbon tool steel. With 1025 carbon steel shoes, it is unnecessary and inadvisable to use chemical "case-hardening" methods formerly used with low-grade 1010 carbon steel shoes. The method hardens only .007 inch—a thin-paper shell—and leaves the remainder of the metal annealed or softer than before heating."

### Overseas Edition

THE CAVALRY JOURNAL is now available in a special "overseas" edition which, except for size, is the same as the regular CAVALRY JOURNAL publication.

This new edition, approximately 5 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ ", was adopted to save shipping space and to provide a Journal which can be slipped into a pocket and read at intervals when time is available.

Originally intended only for overseas subscribers, this pocket-size edition is now also available for persons still stationed in the United States. If your assignments keep you on the move, or if you are cramped for storage space, or if for any other reason you would prefer the "overseas" edition, please notify the Cavalry Journal office, and the small edition will be sent to you.

### Wrong Addresses!!!

Is your name here? Can you help locate these missing addresses? Send in your correct address, and your CAVALRY JOURNAL will be mailed you at once.

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# General Hawkins' Notes

## Cavalrymen—Mounted, Dismounted and Mechanized

Two recent letters from young cavalry officers serving with cavalry reconnaissance squadrons in France and Germany take exception to the statement in my Notes in the July-August issue of *THE CAVALRY JOURNAL* to the effect that "The United States and England will have no cavalry in coming European operations." They call attention to the fact that many cavalry reconnaissance squadrons landed with the first troops in the invasion of Normandy and have been fighting gallantly and effectively ever since; that in addition to reconnaissance these squadrons have performed all sorts of cavalry missions.

Members of these cavalry reconnaissance units are cavalrymen; they are called cavalrymen and wear the cavalry insignia. Instead of using horses, however, they use armored cars and jeeps. These young men are proud of being cavalrymen, and they want these facts known.

The Cavalry Association, in turn, is proud of these cavalry squadrons, trained in cavalry traditions and cavalry principles. The 1st Cavalry Division also is serving with distinction, in the Pacific theater of operations and without its horses.

This is not the first time that U. S. cavalry has been sent into active campaigns without its horses. A dismounted cavalry division, sent into Cuba in the Spanish-American War in 1898, fought in the Battle of Santiago. Lack of transportation for the horses was given as the reason that they were left behind.

The same year the 4th U. S. Cavalry, dismounted, was sent to the Philippines, and fought dismounted as light infantry during the first few months of the Philippine insurrection which broke out in February, 1899. During the late spring and early summer of that year some troops of the 4th Cavalry were mounted again on their horses which had been shipped from the U. S. They proved so valuable that during the ensuing summer the whole regiment was completely mounted. A little later several other cavalry regiments were sent over, with their horses following in regular horse transports. The folly of not having sent mounted cavalry

over to the Philippines originally was responsible for the prolongation of the campaign which carried the insurrection into several years. This fact has been referred to and explained in these Notes in other issues of *THE CAVALRY JOURNAL*.

Wherever our cavalry has fought, mounted, dismounted, or mechanized—as is now the case in Europe—it has distinguished itself. The exploits of the mechanized squadrons of cavalry now in Europe should not be overlooked, but I am convinced that large forces of cavalry, using horses, could, in combination with mechanized forces, shorten the war there and save thousands of lives.

Undoubtedly, the cavalry reconnaissance units are doing splendid work, but no matter how well trained they may be, however skilful, however gallant, however efficient, they cannot perform ground reconnaissance as well, or as safely, as they could if they were supported and assisted by strong horse cavalry units. The idea that, on any terrain except a desert devoid of trees, creeks, rivers, mountains and other natural obstacles, a unit whose men ride in armored cars and jeeps can explore the country thoroughly and safely is preposterous. A skilful enemy can lay traps and ambushes for such an outfit. This will not only interfere with effective reconnaissance but will often result in destruction of a large part of the unit. There can be no stealth with noisy motor vehicles. Thick woods, muddy ground, difficult mountains, and plains intersected by creeks cannot be reconnoitered thoroughly except by horsemen.

A proper combination of horse soldiers with mechanized soldiers can be very effective, as shown by the Russians both in reconnaissance and in large offensive attacks against the enemy flanks and rear.

Our cavalry is serving in this war in dismounted and in mechanized units. And many cavalry officers are serving in the infantry and armored forces, various staff groups and high commands. We at home are very proud of them all, and take off our hats to them with great humility.

### AN UNSEEN ENEMY—

In Europe today, tuberculosis is raging with epidemic force. It must not happen in America. Yet Americans are dying at the rate of one every nine minutes—right here in this country—from tuberculosis.

Christmas Seals are in the foreground of the fight against this dread disease. Buy Christmas Seals. Use Christmas Seals. Help thwart the spread of a perilous enemy!





# RED ARMY COSSACKS

by Major Robert B. Rigg, Cavalry

## EQUIPMENT UNDER THE CZARS

IMPROVEMENTS have been made in Cossack equipment since the days of the Imperial Russian Army when the Cossacks were obliged to furnish their own individual military needs. In Tsarist days when a youth began military service his family had to outfit him with horse, uniform, saddle, bridle and personal accouterments. Prior to accepting *Kazak* youths, Russian army officers used to hold assemblies for the purpose of inspecting equipment. The latter had to meet army standards before the Cossacks were sworn in. If serious defects were found in a Cossack's horse he would have to obtain another mount quickly from a friend or relative.

Earlier in history this system worked well enough, but at the beginning of the 20th Century it showed signs of being outmoded. For one thing it worked a serious handicap on the poorer Cossack families who had to spend a great deal of money on necessary equipment. Training and combat took their toll on uniforms, etc. In the Russo-Japanese War military observers commented on the fact that the Siberian Cossacks failed to "hit the ground" and skirmish dismounted enough because these cavalrymen were trying to conserve their few clothes.

## PERSONAL EQUIPMENT TODAY

Soviet Cossacks are now equipped and armed by the Red Army the same as all other Russian soldiers. All Red Army men are taught to take good care of their equipment. Economy is the keynote, and little is wasted. In details, Soviet military equipment will vary, but this is because every available item and weapon is used.

In the field discipline is strict on the matter of property responsibility, and even a wounded soldier is not excused for leaving his rifle behind on the battlefield.

Every Cossack carries a saber, even in units such as communications or artillery. The standard Red Army saber is similar to the old U. S. Army cavalry blade except that the Russian model lacks a hand guard. A thong secures the weapon to the wrist when it is unsheathed. Mounted, the Cossack hangs the saber from the left side of the cantle; dismounted, he carries the weapon on his left waist belt.

All Red Army cavalrymen are issued cloth ponchos which have a hood to protect the head. These are carried on the very top of the cantle roll when not in use. Each cavalryman is issued one shelter half, but in combat he is not likely to use it as much as his *burka*.

First-aid kit, emergency rations, soap, a sack with rifle cleaning equipment, extra underclothing, toweling, and personal possessions are normally carried in the saddle bags. Gas mask, canteen, and a pail-like mess kit, plus spoon are other items of individual issue.

## SADDLE EQUIPMENT

There is nothing outstanding about Cossack saddle equipment. In general the same practices and procedure apply to Cossack cavalry as are common to the cavalry of other armies. Extra horseshoe nails are carried. Bridles, bits, feed bags and saddle blankets conform to the average cavalry equipment and warrant no further comment.

Saddles vary between the Cossack saddle, the standard Soviet cavalry saddle, and some miscellaneous types. Cossacks can be seen using Caucasian type saddles as

## Part II—Equipment, Arms, and Armament



nm FIELD GUNS AT GUNS

MORTARS

TACHANKI

RIFLEMEN



well as occasional English ones. Front and rear saddle bags are used, and there are prescribed items for each pocket. Cossack saddles have the usual cantle and pommel rolls.

The regular *Kazacheski sedlo* has a peculiar pillow seat which is uncomfortable to the horseman who does not ride in Cossack fashion, *i.e.*, considerable weight on the stirrups, no posting at the trot, and a forward, almost standing seat at the gallop. This pillow seat on a Cossack saddle is made of a heavily padded and quartered leather cushion which eventually becomes shaped by the rider. There is a small wooded horn at the pommel and cantle. The stirrups are metal. There is normally a three-strap girth on the saddle which has the usual skirts.

The regular Soviet cavalry saddle is an improvement over the more ancient Cossack saddle, although the latter is used often by non-Cossack elements. The standard Red Army cavalry saddle is somewhat like the English flat saddle except that it has a higher cantle and pommel.

#### WEAPONS

*The Saber.* The only large modern army retaining the saber for combat use is the Red Army. Every line Cossack carries this weapon. Despite its antiquity as an instrument of war the Soviet saber has added many enemy dead and wounded to its present-day record. There is an old Cossack saying, "The saber is always loaded."

Some may wonder if the saber has been successfully used enough in this war to warrant retaining the weapon. The Soviet answer is *yes!* Actually, it must be realized that the saber is the least important and least used of all Cossack weapons, but occasionally it finds a very useful place in the fighting.

The Russians, and particularly the Cossacks, have retained the saber because they are *very* skilful at using it. In the hands of some nationalities the saber is not a particularly effective instrument. One only has to witness a Red Army saber course and the manner in which Soviet horsemen wield this "mounted bayonet" to appreciate the effectiveness of the saber in *Russian* hands. There are *no* half measures in the Russian use of the saber mounted; the blade is slashed to *kill*—not to wound or stab. For generations Russian armymen have related battle instances where bodies were split or halved by a single downward stroke of a cavalry saber. This was always a Cossack goal, and years ago these horsemen set the masterly pattern for the use of the saber.

The Cossack carries either a rifle or a tommy gun with the rifle predominating. Rifle boots are not used as the rifle is simply slung diagonally across the horseman's back. This is not too comfortable for the rider,



Sovfoto

Don Cossack Guardsmen rest in the foothills of Carpathians on the second Ukrainian front, May 1944. Soldiers clean sabers and firearms, while a Red Army nurse gives first aid to minor wounds. Note length of saber.

but his weapon is with him when he dismounts. Russian economy may account for the nonissue of a rifle boot, although some armies prefer that their cavalrymen carry the rifles on their backs.

The following weapons are also used by Cossacks, as well as other Red Army cavalrymen:

*The Mossin-Nagant M 91/30, 7.62mm (.30 caliber)* is the basic rifle. It weighs 9.9 pounds and takes a 5-round clip. The maximum effective range is about 900 yards. There is also a Mossin-Nagant Sniper rifle.

*The Tokarevs M 1938 and 40* are practically identical semiautomatic rifles, also 7.62mm. Weighing 10.8 pounds, each has a 10-round magazine loaded by 5-round clips and a practical rate of fire of 15 rounds per

← This panorama of the components of a Cossack raiding unit shows weapons carried by Cossack raiding parties, which always have a high proportion of automatic arms. The small raiding party may dispense with the field artillery while a large unit may be augmented with tanks. All raiding units are followed by light trains carrying food, ammunition, etc.



minute. There is also an M 40 Tokarev carbine and a sniper's rifle.

The PPSH, Model M 1941, Tommy Gun, weighing just over 10 pounds, is a handy weapon and a Cossack favorite. The gun is 7.62mm, and takes either a 72-round circular drum, a "half-moon" type, or a straight clip; the latter two clips hold about 22 rounds of ammunition each. The straight clip (such as found on the Thompson submachine gun) has proved to be the most practical, and it has now replaced the large circular drum. Red Army men are devoted to their method of slinging this tommy gun. The sling strap on the weapon allows the gun to be suspended from the neck and left shoulder in a "ready to fire" position. This method of carrying the submachine gun is particularly advantageous to the mounted cavalryman or to the officer whose hands should normally be free to handle maps, field glasses, etc. Thus suspended, the tommy gun can be quickly brought into play.

All officers carry pistols, but the variety of models in use in the Red Army is too great to describe here.

#### ARMAMENT

The Russians have several types of hand grenades

USSR Press Photo



ranging from the Mills type to the antitank hand grenade. Details are lacking on the specific models used by Cossacks, but it is believed that they employ almost every type.

Aside from the small weapons carried by individual Cossack soldiers the regiments are equipped with the following weapons:

*The Degtyarev Light Machine Gun, Model 1928.* This bipod-mounted 7.62mm weapon has a circular ammunition drum that rests horizontally on the top of the gun. A gas-operated weapon, it weighs a little over 20 pounds and is generally comparable to the U. S. BAR. The Degtyarev has a cyclic rate of fire of 600 rounds per minute and is considered effective up to 1,000 yards.

*The Maxim Heavy Machine Gun, Model 1910,* is a weapon that has proved its practicability and usefulness in two world wars, as well as having been consistently used by both sides during the Russian Civil War. The water-cooled model is on the Sokolov mount, a low pintle frame with two small metal wheels and a trail. On this mount the gun weighs about 135 pounds. The machine gun is a 7.62mm weapon, recoil operated. The Maxim MG can fire 200 to 300 rounds per minute and is fed by a 250-round belt. While sighted up to 3,000 meters (3,280 yards) the effective range is considered to be 1,000 yards. This old, but still practical weapon, with its small metal shield is regularly used on the *tachanki*. In winter a white cloth camouflage sleeve fits over the water-cooled barrel. (See photos 1 and 2.)

*The 7.62mm Degtyarev Heavy Machine Gun, Model 1939,* has cooling fins on its air-cooled barrel. It is similar in design to the 12.7mm machine gun below, but is mounted on a tripod. Like the Maxim, it can be fitted with large concentric ring sights for AA.

*The 12.7mm AA/AT Degtyarev Machine Gun* is belt-fed and has a reported range of over 2,500 yards. Its rate of fire is about 600 rounds per minute. The piece is gas-operated and has been used as an AT weapon as well as for its normal AA purpose. It has a three-man crew.

*The 14.5mm Degtyarev Antitank Rifle, Model 1941.* The Cossacks and Red cavalry have used this AT gun to great advantage. The weapon is one of the outstanding small AT pieces of the Red Army. It is a .57 caliber long-barreled, bolt action, single shot antitank piece which was once nicknamed the "20th Century Lance" by the Cossacks who for a while carried it on horseback in lance fashion. Today, however, the gun is borne on a pack animal. The pack saddle has a special bracket which will permit the gun to be fired from off of the horse at enemy aircraft when necessary. In addition to saddle bags carrying feed for the horse, there are two ammunition bags which hold approximately 100 rounds of ammunition.

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Cossack guardsmen man an 82mm mortar (M1941), December 1943. Tommy guns are strapped to backs. Russian Tommy guns now have box magazines, which make them easier to carry and ready for instant action. Note mortar shells in foreground.



Cossack guardsmen haul a 76.2mm gun (M1942). This is a very light field gun with muzzle brake. Carabines are M1924/27.



*The 45mm Antitank Guns, Models 1932 and 1937.* These weapons are almost identical, and form the AT battery of the cavalry regiment. The guns are horse-drawn and have a small limber. In typical field artillery fashion one or two men ride the limber while another two are atop two of the four horses drawing the gun. Behind the latter, another 4 animals with a limber and caisson complete the gun section.

The 45mm AT guns are rubber-tired and weigh about 1,000 pounds. These closely resemble the German 37mm gun. The weapon fires both HE and AP shells.

*Mortars.* The 82mm mortars are commonly used by Cossacks and other Red Army cavalry. These weapons have a range of a little over 3,000 yards, and the practical rate of fire is 12 to 15 rounds per minute. There is a crew of 5 Cossacks per mortar, and each of these men is armed with rifle or tommy gun. (See photo 5.) Mortars are transported on a rubber-tired limber and caisson which are horse-drawn.

*Artillery.* This arm has an extremely important rôle in Cossack-cavalry operations. Without artillery weapons the Cossacks could not exist as a fighting force in modern war.

With each Cossack regiment there is a battery (4 guns) of 76.2mm howitzers. The cavalry division has normally a two-battalion regiment of field artillery. This artillery regiment has both 76.2mm guns and the very practical 122mm howitzers. In actual combat operations, however, Cossack and other Red cavalry units are not limited to their own organizational artillery, for this is usually supplemented by corps and GHQ artillery units.

*The 76.2mm Regimental Howitzer, Model 1927,* is a short-barreled, squat, box-trail gun with large artillery wheels. A very handy horse-drawn weapon which is used in Cossack and other cavalry units. It fires HE shells (range approximately 7,200 yards) and shrapnel shells which are reported to have a range of about 7,

500 yards. This is an important close-support weapon which Cossacks use continually, and if necessary can even pull for short distances by hand.

*The 76.2mm Field Guns.* There are three modern models, the 1936, 1939 and 1942. The 1936 model is characterized by its 12-foot high-angled barrel; it has been used for AT fire. All models have split trails, and firing the HE shell they have an average maximum range of about 14,000 yards. Armor-piercing shells have a maximum range of about 7,000 yards. Both these and the regimental howitzer are greatly admired by the Germans who have used captured pieces.

*The 122mm (4.8 inches) Howitzer Model, 1910/30* is the normal cavalry supporting weapon. It has a range of 9,900 yards with a 45-pound HE shell. The 122mm (4.8 inches) Howitzer, Model 1938 might be used. It has a maximum range of 12,500 yards.

Early in the war some Cossack and cavalry units were using the old Czarist model 76.2mm field gun (3-inch), both in original and modernized guns, but these have gradually been replaced by the more modern artillery weapons already mentioned.

#### ORGANIZATIONAL EQUIPMENT

To date the Cossacks have favored the wagon or horse-drawn vehicle over pack animals and motor transport within the regiment. Thus, within that unit the forage, food, ammunition, etc., are hauled by 4 and 2-wheeled wagons. Their 4-wheeled wagons have the general appearance of U. S. farm vehicles. They are sturdy board-sided wagons and are usually drawn by two horses. Often they carry the less seriously wounded cases back on their return trip from forward echelons.

*Field Kitchens* or the actual cooking stoves are contrivances on a 2-wheeled carriage, usually drawn by one horse. Water carriers are iron tanks which are likewise mounted on the two-wheeled cart frame. In 1940 there were 125 horse-drawn vehicles in the Soviet cavalry regiment and only 6 motor trucks.





USSR Press Photo

The Red Army .505 Degtyakov 12.7mm machine gun, with which Cossack units are equipped, has a varying rate of fire—low for ground fire, high for AA. Mounted on a high tripod, it is steadied by a stone hanging from the center.

*The Tachanki.* These 4-wheeled machine-gun carts, developed during the Russian Civil War, have been a great favorite of the Cossacks ever since. Four horses pull these light carts. Harnessed abreast, the two outside animals can be cut away quickly in the event that they become casualties. The Cossacks favor this method of hitching over harnessing the horses in artillery fashion. *i.e.*, in column of twos.

The *tachanka* carries one Maxim machine gun (1910 Model) which is mounted so that the gun fires to the rear. The gun is so arranged that it can be elevated for antiaircraft use. A driver, gunner and assistant gunner make up the crew, all of whom ride on the vehicle. (See photo 1.) Normally, three riflemen on horses follow in the rear of the *tachanka*. While the MG is often fired from off the *tachanka*, it is SOP to dismount the weapon and place the vehicle and horses under cover when possible. Cossacks have on occasions actually mounted two MGs on one *tachanka*.

One of the main reasons that the *tachanka* is so favored by the Cossacks and Red Army cavalrymen is that it can carry a good supply of ammunition. In addition, the vehicle is extremely fast and maneuverable. *Tachanki* are frequently used on Cossack raids as they are not handicapped by having to carry fuel, and for a few days at a time the animals can live off the little forage carried.

The exact number of these light wagons to a Cossack regiment is not known, but one recent combat account mentioned platoons of them.

#### COMMUNICATIONS

The author is not well enough informed on this subject to outline it comprehensively. However, one item is apparent, and that is that the mounted messenger plays a very important part in regimental communica-

tions. Before the war the Red Army cavalry regiment had a half squadron (half U. S. troop) devoted to signals and communication. This consisted of a dispatch rider section, one radio section, an air liaison section, and two telephone sections.

The author has seen odd-looking radio carts with Red Army cavalry squadrons. These carts were 4-wheeled, horse-drawn, and the radio was in a high box arrangement that made the whole thing look like a small hearse. The wagon has one advantage over pack transport in that a heavier weight can be carried, and this means more radio.

Cossack cavalry uses field telephones (their own and U. S. Army models), and very often relies on the use of signal flags and pyrotechnics.

#### MISCELLANEOUS COMMENTS

Soviet cavalry units have a very practical item in a special food container that a horseman can strap to his back like a pack. This flat pail is used to carry hot food to small cavalry elements which are out of touch with their field kitchens. These containers can carry roughly three or four gallons of stew, or similar semi-liquid food.

Details are lacking, but Cossack units are now using motor ambulances where possible. It should also be noted that the Red Army has special medical units, and the wounded of a cavalry regiment are not necessarily evacuated by their own medics.

EDITOR: *The third installment of Major Rigg's article on Red Army Cossacks, which will appear in the January-February CAVALRY JOURNAL, deals with Cossack organization, training, and combat.*

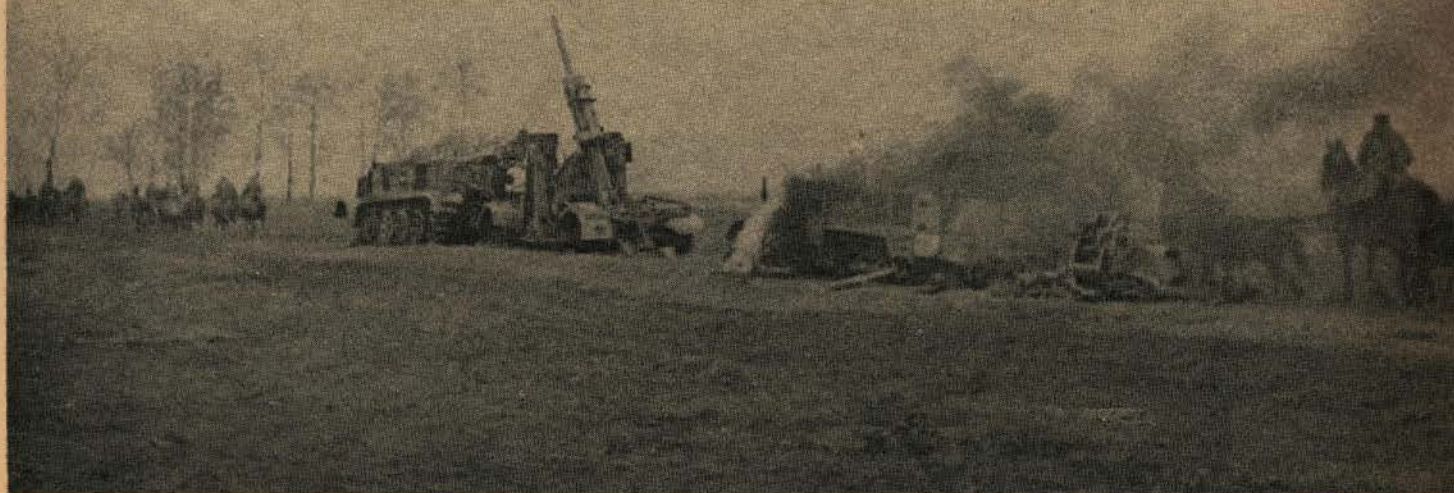
Close-up of the *tachanka* shows how the Maxim MG is mounted to fire to the rear. Normally the gun is placed on the ground, but it can be used off of the *tachanka*. Note how the belt is fed directly out of one of the ammunition cases. Some *tachankas* are four-wheeled; others, two. This photo of Cossack training was made May 1944.



USSR Press Photo



Hard pressed by the Cossack Guards unit, the Germans abandoned their guns and other war matériel.



Sovfoto

# Cavalry Action Near Warsaw

*by Major J. Poliakou*

AS the Germans attempted a withdrawal toward Warsaw in August, they were confronted by the onslaught of Soviet cavalry, which charged through the gap created by the enemy's retreat and, pushing forward in rapid pursuit, forced a number of serious engagements. The cavalry squadrons, trained in making daring decisions and bold assaults, often attacked the enemy dismounted, and, where conditions permitted, on horseback.

At Siedlece, an important railway and highway junction, and a vital point of enemy resistance on the approaches to Warsaw, the Germans spared no effort to hold the town. They covered their retreat to the town by a strong rearguard of tommy gunners, artillery and mortar fire in addition to tanks and self-propelled guns.

The operation developed as follows:

The cavalry squadron commander, ordered to rout the enemy rear guards from one of the villages, first reconnoitered the enemy positions, and, convincing himself that the Germans had no organized system of fire, decided to attack mounted.

During the night the lieutenant prepared his squadron for action. Guns, mortars and machine guns were posted on the flanks. Then on a given signal the squadron, with all its fire power in action, changed from defensive to offensive action. Taking the Germans by surprise, the squadron cut through the ranks of the terror-stricken Germans and began to spread out toward the village. Pressed from the front by the cavalrymen

and from the flanks by mortar fire and machine guns, the enemy rearguard was soon routed. Fifty of the enemy were killed and 47 captured.

The cavalry never misses a favorable opportunity to attack in mounted order. On the approaches to Siedlece there were many such examples. Squads, troops and even single horsemen galloped into action with drawn swords. On one occasion a lieutenant, with a small party of men, rushed into a populated locality and annihilated the crew of a self-propelled gun. Another lieutenant with a detachment of horsemen, raced up to a German train and, after killing the engineer captured 40 freight cars with food and armament.

Near Siedlece the cavalrymen encountered increased resistance as the enemy brought up reinforcements of two infantry divisions and one SS tank division. But in coöperation with tank units, the cavalrymen broke the enemy's resistance and cleared Siedlece.

In those battles which were conducted in dismounted order, cavalrymen also made good use of their horses. They maneuvered, changed position, and appeared wherever the enemy least expected them.

When a strong force of Germans broke through the ring and headed for Warsaw, a cavalry troop under Lieutenant Belanovsky leaped into their saddles and hurried forward in a direction parallel to the retreating enemy. The cavalrymen soon outpaced the Germans and after dismounting, established themselves on the Warsaw highway. As the Germans approached they were met with a withering fire from the troop which held its position until the squadron arrived and annihilated the enemy.

\*By cable to THE CAVALRY JOURNAL from War Department, USSR, Moscow, September 14, 1944.



# Cavalry Offensives in

Make thorough Reconnaissance.

Attack suddenly and aggressively.

Attack enemy flanks and rear.

Attack mounted or dismounted,  
according to situation.

**S**OVIET CAVALRY has participated in all winter operations of the Red Army. In December, 1941, the I Guard Cavalry Corps was successful in fighting against selected tank, motorized, and infantry divisions of General Guderian's Army which attempted to encircle Moscow from the south. In December of the same year, and in January 1942, the II Guard Cavalry Corps of General Dovator led the pursuit against the enemy retreating from the districts of Moscow, and several times his corps made destructive attacks on the Germans. In the Yelets operation the III Guard Cavalry Corps, also fighting under winter conditions, completed the destruction of an enemy corps.

The winter of 1942-43 provided many additional examples of serious winter fighting by Soviet cavalry—in actions below Stalingrad, in the northern Caucasus, below Valuikam, Kharkov, and in other regions. During the present (1943-44) winter Soviet cavalry has continued destroying enemy units. During these three winters of war, cavalry has accumulated much experience in offensive actions under winter conditions.

## WINTER PECULIARITIES

Winter operations by cavalry are difficult, for during this period of the year it is necessary to overcome not only obstacles created by the enemy but also those created by nature.

Deep snow provides one of the major difficulties. In places where there is little snow an offense can be carried out either by mounted or dismounted formations (depending on enemy fire) with the support of tanks. Under these conditions horse artillery can support the

attack and insure its success. On the other hand, where the terrain is covered with deep snow, an offensive is possible only with dismounted formations (on skis or not), *less* the support of tanks. The deepness of the snow often dictates the directions of the main attacks, for which it is always desirable to select terrain where actions by all types of troops are possible.

Areas covered with deep snow are useful for accomplishing encircling and enveloping maneuvers. Under such conditions evidences of the approach can be hidden and the enemy surprised by sudden thrusts to his flanks and rear.

Obviously, in winter there are fewer usable roads than in summer, and although improvised "roads" can sometimes be made by direct travel between two points, in general, winter limits the maneuverability of troops by binding them to a small number of roadways.

The maneuverability of units and sub-units can be increased in winter by placing the men on skis; also, frozen rivers, swamps, and streams become passable. The advance of modern technical arms is considerably complicated by swamps, streams, and intermittent creeks, such as in the wooded and marshy regions of the Ukraine and Belorussia, which are not frozen. In areas like these there must be a well organized engineer reconnaissance over the entire region, particularly in the swamps and non-frozen areas. Experience indicates that in general the smaller reconnaissance units (with MG) on skis are the most suitable for winter action. As a rule, mounted reconnaissance formations are unable to approach the enemy secretly in winter, and for this reason they cannot fulfill reconnaissance aims.

During the period of reconnaissance, the main ele-

\*Translated from Soviet Military Journal, *Voennyi Vestnik*.



# Winter

★

by

*Major General M. Smirnov, Red Army*

ments of the cavalry regiment usually hide themselves in forests, villages, and ravines, and do not reveal their presence to the enemy. This is especially important when organizing night offensives.

In either a night or day attack the line of departure should be occupied only a short period before the beginning of the attack, so that the soldiers will not have to lie in the snow for a long time. At night the line of departure must, if possible, be nearer to the enemy than in daytime so as to lessen the casualties from enemy fire. It is useful to move the troops forward via snow trenches made by front line subdivisions.

It is necessary to attack quickly and in a determined fashion. Slow, non-decisive actions are not only unwise but increase losses. The greatest success is attained by sudden attack.

## SURPRISE—BATTLE FOR KLEKOTKI

In December of 1941 the tank and motorized divisions of General Guderian's German Second Armored Army began to withdraw from the region of Kashirsk and move south under pressure from Soviet troops. A large motorized column was retreating on the road between Mikhailov and Bogoroditsk.

One cavalry regiment of the Nth Cavalry Division was assigned the mission of cutting the highway Mikhailov to Bogoroditsk in the vicinity of Klekotki and holding it until reinforced by other Red Army units. (See Map 1.)

At 0500 on 14 December 41 the regiment established itself on the east edge of the forest west of Klekotki. It was extremely cold and dark. The heavier weapons and technical necessities (of the regiment) had advanced with difficulty along the snow-covered roads.

Throughout the locality the scouts had learned from the local population that an enemy infantry unit and staff had arrived in vehicles at night, and that they were bivouacked in the vicinity. Also in Klekotki was a group of Red Army prisoners who were kept under guard. Reconnaissance had further ascertained that a small group of enemy soldiers with light machine guns was in the territory south of Klekotki; that an armored car was at the church, and that there were enemy patrols in the village. It was also clearly determined that the hill (estimated to be 200 meters high) northwest of Klekotki was occupied by a group (1st and 2d subdivisions) of infantry who had one machine gun near the crest. To outward appearances the enemy was quite careless, and lacked an organized guard or all around defense of outposts.

Considering all of these things, along with the fact that the somewhat demoralized enemy had been re-

treating, the regimental commander made an immediate decision to attack and destroy them before dawn.

Deploying the 1st and 3d Squadrons on the east edge of the forest one kilometer west of Klekotki, the regimental commander ordered:

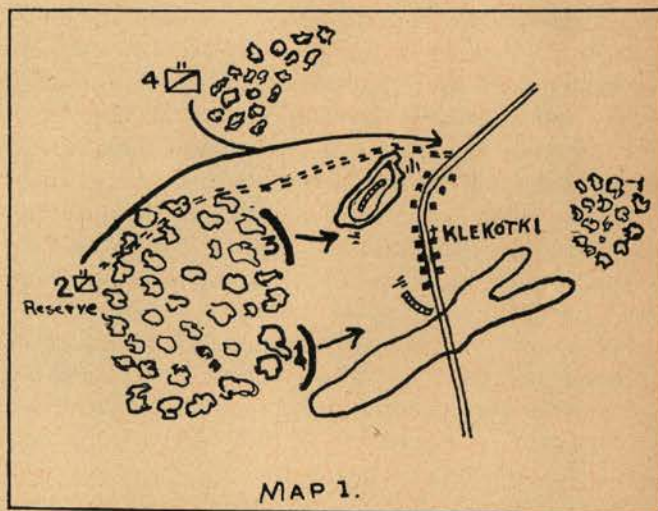
"The 1st Squadron to advance along the south edge of Klekotki, seize the southern portion of the village, and advance up the street to the church.

"The 3d Squadron to advance on the north edge of Klekotki, and then to move south along the street in the direction of the church.

The 4th Squadron, in mounted formation, to advance and seize the highway northeast of Klekotki, so as to prevent any approaching enemy units from entering Klekotki from the northeast.

"The 2d Squadron to remain in reserve, but to advance along the forest road in the general direction of Klekotki."

The 1st Squadron with a point consisting of submachine gunners, advanced east along a ravine. The submachine gunners attacked an enemy outpost on the south edge of the Klekotki and, after destroying it, entered the village and opened fire. Meanwhile, the group of automatic gunners of the 3d Squadron had



MAP 1.

beat off the enemy combat outpost at the hill, 200 to 300 meters west of Klekotki. Very shortly the attack on the village began from the south and north.

Abandoning rifles and machine guns, the Germans ran northeast along the highway where they were met and attacked by the mounted 4th Squadron. As a result many German soldiers and officers were left killed on the field. Following this the 4th Squadron, still mounted, burst into the village from the north and, after attacking a combat outpost released the Red Army men who were prisoners. Within an hour the



village of Klekotki was entirely in the hands of the cavalry regiment.

The success of this battle was a result of the following:

The enemy was careless in its failure to organize good outposts.

The reconnaissance performed stealthily was successful; the regiment quietly occupied the line of departure, and the troops were well camouflaged.

The attack was sudden and vigorous.

The well-directed 4th Squadron prevented the enemy from fleeing northeast and joining other German units.

In winter as in summer, it is important to consolidate a position immediately after driving the enemy out, to organize an all around defense, and to prepare to repulse enemy counterattacks.

#### ORGANIZATION OF ATTACK

Attack by a cavalry regiment under winter conditions must be preceded by early reconnaissance. In such circumstances when the regiment is moving, it must have reliable reconnaissance and security elements ahead of it on skis. The reconnaissance element must begin reconnoitering the enemy's defense system before the main body of the regiment approaches.

Preceding the main body of the regiment is the advance guard support which is reinforced by artillery and mortars on sledges and skis, sappers with land mine detectors, and other engineer equipment. Acting energetically, the advance guard support throws back the enemy and attacks his subdivisions on the flank and rear. Usually the advance guard support finds action in the vicinity of the road. Artillery and mortars then form a fire unit post near the road, and furnish fire support for the advance guard. If present and available, ski subdivisions should execute a turning movement and attack the enemy in the flank and rear.

The regiment follows the advance guard support at a distance of from 2 to 3 kilometers (1.2 to 1.8 miles) and is in complete readiness to deploy. Each squadron has technicians\* attached to it; they are placed either forward or center of each squadron.

After reconnaissance of the enemy and the surrounding terrain, the regimental commander receives his mission and he then deploys his regiment for battle. Practice shows that it is least advantageous to attack frontally; the enemy should be attacked on the flanks in combination with a thrust to the rear.

#### FLANK AND REAR ATTACK—BATTLE FOR GOLUBOVKA

This contention is supported by the following analysis of an offense by a cavalry regiment against a well

organized and defended German base. (See Map 2.)

In March 1943, after the battle along the railway line, Kursk to Ponyri, the enemy evacuated these points and began to retreat west in the direction of Sevsk. In front of the Nth Cavalry Division was the 108th Hungarian Infantry Division. The snow was so deep that it restricted movements to roads, which were in poor condition. The terrain in this region was an average cross section of land having ravines, gullies, hollows, small forests and some brush.

By reconnaissance and the interrogation of prisoners it was established that the enemy intended to retreat westward to the region of their strongpoint at Golubovka. The prisoners explained that around this strongpoint there were minefields and entrenchments, fortified by 4 to 6 rows of wire obstructions. The northern part of the village of Golubovka had been fortified more strongly than the rest of the perimeter because partisans had been raiding the garrison from the forest north of the village.

The 11th Guardist Regiment, reinforced by a dismounted squadron "Z," was assigned the mission of advancing northwest in the direction of Cherniati, Big Berezka (these are not on Map 2), Golubovka and Lesnoe, and at 2300 on 5 March to seize the region of Lesnoe and Golubovka. Following that the regiment was to be ready to advance west to the River Desna.

At 1730 on the appointed day, the regiment departed. In front of it were reconnaissance elements and one squadron comprising the advance guard support. The remaining squadrons marched with the main body.

Reconnaissance was unable to determine the strength and disposition of the enemy. As it so happened, the advance guard support (mounted) was protected by close-in patrols as it approached the southeast edge of Golubovka, and because of the darkness these patrols failed to notice the lines of barbed wire on which were hanging empty tin cans to warn the enemy. This noise aroused the Germans who opened up with heavy rifle and machine gun fire. The advance guard support retreated, then dismounted and deployed on the north edge of Promakhovka, while the horseholders led the horses into the grove west of Dubrovka.

After going to Promakhovka to make an estimate of the situation, the regimental commander organized supplementary reconnaissance, which determined that the north and west portions of the Golubovka fortress were the strongest, while the southern side was the weakest. On the basis of this, the commander decided that his main attack would be against the southern portion (see Map 2) and issued the following orders:

"The 4th Squadron with two light AT guns, to advance from the Promakhovka area along the road on the southeast edge of Golubovka.

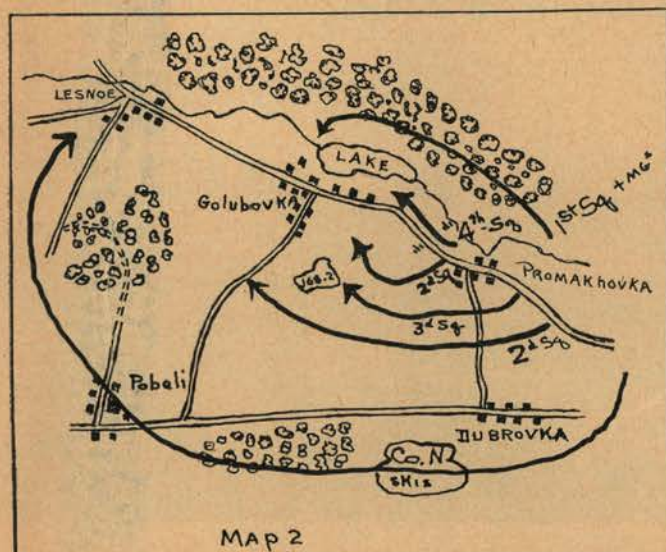
"The 1st Squadron with one light AT gun and a platoon of heavy MG's, to outflank the enemy along the south edge of the grove north of Golubovka and to attack the northwest portion of this village.

\*An exact translation of the Russian word. These technicians may be combat engineers, or other specialists for use in a particular phase of the contemplated operation.



"The 2d Squadron with one AT gun and a platoon of heavy MG's, to occupy the line of departure along the road at a point one kilometer south of Golubovka, and to attack the south edge of this village.

"The 3d Squadron to occupy a line of departure on



the eastern slopes of the Hill 168.2, and also to attack the southern portion of Golubovka.

"The attached Squadron "Z," to advance along the north edge of Hill 168.2, cut the road from Golubovka to Pobel and prevent any enemy retreat south or southwest."

In coöperation with the regiment, Company N (on skis) detached from a rifle brigade, was to outflank the enemy through Dubrovka, occupy Lesnoe, and place a force in observation on the west edge of the village; the remainder of the company was to occupy a defensive position on the southeast edge of Znobovka and cut off any way of enemy retreat to the northwest.

The attack was to start by a signal from the regimental commander.

Not until 0500 (the following morning) did the Soviet units occupy their respective lines of departure. This delay occurred because three of the squadrons had to march through deep snow and pull their guns by hand. During the first half of the night, the enemy kept up steady fire with rifles and machine guns, but to keep their positions concealed Red Army units were prohibited from returning this fire. Near morning the enemy fire ceased. Afterwards the prisoners explained that the Germans thought an attack was being made by partisans who frequently raided from the Golubovka forest.

At dawn the regimental commander gave the signal for the artillery to open fire on enemy targets. After a ten minute barrage the artillery fire was lifted and the cavalry squadrons moved forward into the attack. Resistance on the south side was weak, and the squadrons rushed straight into the enemy's entrenchments within the village. As the Germans started to withdraw to the

north in the direction of Luzhki (not on Map 2), they were attacked by the 1st Squadron. Then as they turned to the southwest in an attempt to retreat to Pobel, they were met near Hill 168.2 by the fire of the dismounted squadron "Z." After that the Nazis began to rush about from side to side in the hope that they might escape being surrounded. Meanwhile the infantry ski company advanced along the road to Golubovka.

As a result of this coöperative attack from all directions the enemy became demoralized and began to surrender in parts. About 0800 the entire group was smashed. There were 150 Nazis killed and 250 prisoners taken. Captured trophies included 7 heavy and 9 light MG's, a mortar battery, one A.T. gun, 360 rifles, 40 horses, and ammunition an arms depot, 3 radio stations and other military property. The Red Army cavalry regiment lost 12 killed and 20 wounded.

Success in this battle was due primarily to the following:

The enemy stronghold was surrounded on all sides, and the combined attack was well organized.

Artillery and mortars played a big rôle. In spite of the bad roads and deep snow these units were able to provide their own reconnaissance, to pull guns and mortars into position, lay them, and in the morning to have suddenly opened fire on enemy targets.

The suddenness of artillery fire from short ranges contributed materially to the quick occupation of the southern portion of Golubovka village. Even after that the artillery continued in support of the attacking squadrons.

The direction chosen for the main attack was a well selected one. The plan of flanking the enemy on the north and south was also sound. Afterward, it was evident that the infantry ski company might have been better employed had it been *ordered* to advance more aggressively on Golubovka. Actually, during the course of battle the ski company commander advanced toward Golubovka on his own initiative. Because of *poor reconnaissance during the approach march toward the enemy defenses*, the regiment could easily have failed in its mission.

In conclusion, it is necessary to point out that all winter operations demand a well-organized antitank and antiaircraft defense. While it is necessary to concentrate troops in places, the artillery and mortar positions, the reserve and the command post *must* be protected by antiaircraft and machine gun fire plus that of any extra saber or rifle sections available. The weapons of the antitank defense and the regimental artillery must continually be prepared to direct fire at tanks approaching in any direction.

When the action is dismounted the horse holders must lead the animals out of the zone of effective enemy artillery and mortar fire, and hide the led horses in forests, hollows, and other places of concealment.



# MOUNTED ATTACK<sup>\*</sup>

*by Major V. Donskoi, Red Army*



Sovfoto

THE combination of mounted and dismounted actions, and quick changes between these two formations, are the principal battle activities of cavalry.

Experience has shown that when it is expedient, and the opportunity is used, a mounted cavalry can achieve outstanding success. An inappropriate mounted attack, however, can entail useless and unjustified losses; for example, a situation demanding a sudden transition from mounted to dismounted formation wherein the commander deliberately chooses to fight on horseback.

There is the widespread opinion in some foreign armies that attacks by mounted units are impracticable under the present conditions of heavy fire power, but the Red Army retains a different point of view in this matter.

This difference of opinion is explained by the fact that since the period of World War I the armies abroad have changed their cavalry into forces maneuvering on horseback but fighting on foot. Red Army horsemen, however, have been brought up in the best traditions of the old Russian Army, in the epoch of cavalry in the present war, and they have been taught to maneuver on horse before striking with mounted attack, if there is the slightest opportunity. Furthermore, Soviet cavalry was educated to the spirit of brave and audacious mounted actions during the period (of the present war) when it was impossible to organize strong defenses for the purpose of inflicting heavy losses on the enemy.

<sup>\*</sup>Translated from an article which appeared in the January, 1944, issue of the Red Army military journal, *Voennyi Vestnik*. The publication is not the Soviet cavalry journal, and therefore is not out to champion any one arm. This journal, "Military News" or "Military Messenger," devotes only a small portion of its contents to the subject of cavalry.

## A CAVALRY DIVISION IN MOUNTED ATTACK

An outstanding example of a well-conducted mounted attack can be found during a cavalry division's offensive against German units near Kushchevka in 1942.

After successfully terminating a battle in his favor, the enemy had settled down for a rest in the vicinity of Kushchevka and was not taking measures to ward off a counterattack. Apparently, the enemy was expecting Soviet units to continue their retreat, and the Germans guessed that the Red Army would fall back on terrain more suitable for defense. It should be noted that the Kushchevka region is open steppe with little natural cover and therefore not favorable for a defensive position.

The commander of the cavalry division, assigned the mission of holding the enemy in check and subsequently driving him back, decided to solve this problem in a cavalry manner. All types of reconnaissance had determined the character and disposition of the enemy and his lack of an organized defensive position; the commander decided to attack the enemy with mounted formations.

Making skilful use of the enemy's carelessness, the cavalry commander marched his combined units forward to the line of departure. This movement was accomplished with stealth. Artillery, mortars, and machine guns were concentrated on the flanks of the attacking horsemen.

As the combined fire of all weapons opened up, the cavalry began its attack. This charge caught the enemy by surprise, and in short order the rapidly galloping horsemen had broken through the ranks of the confused Germans.

Supported from the rear by combined machine-gun,



mortar, and artillery fire, the mounted units pressed toward the front and against the flanks and the enemy concentration was disintegrated. As a result of this particular conflict the enemy lost not less than 1,500 men killed; all of the German matériel and equipment was captured. Cavalry losses were insignificant.

No less interesting is a mounted attack by cavalry against an Italian Alpine Corps which was routed in January 1943 near the town of Baluika. Penetrating deep in the rear, Russian cavalry units succeeded in outstripping and surrounding the retreating Italians, who were somewhat demoralized as a result of a previous battle.

Refusing to lay down their arms and surrender, the Italians decided to force their way through the ring surrounding them and then to proceed westward. Thus the battle began. The Italians moved forward immediately, but, meeting the well-organized fire of the cavalry, they were stopped.

The commander of the combined (Red Army) units had correctly evaluated the morale and condition of the enemy elements. He decided not to give them any rest, but to attack them with mounted units with a concentric blow from three sides. Artillery, mortars, and machine guns supported this attack.

Having pinned the hostile forces down by this strong fire, the cavalrymen drew their sabers and plunged into a mounted attack. The enemy, shaken at the sight of this, lost all possibility of counterattack and began to flee.

During the short period before the enemy surrendered, more than 600 Italians were killed. In all, over 10,000 Italian soldiers and officers, plus a few generals, were captured in this battle.

From the examples just given, it would be incorrect to conclude that mounted attacks by divisions are commonplace today. Such a conclusion would be wrong. The attack near Kushchevka, for instance, was not a typical one since the circumstances were extremely favorable to the attack. Such situations as a rule are very rare, for the enemy is usually more cautious.

#### A CAVALRY REGIMENT IN ATTACK

A mounted attack by a regiment, however, is not unusual. An illustration of such follows:

In November 1942 the commander of a cavalry regiment near the village of Evlampievskaya was ordered to attack the enemy and seize the village. Following the earlier break-through of the enemy's defenses, the action was taking place in the enemy's rear area. Soviet cavalry had managed to appear in the zone unexpectedly. The garrison in the village of Evlampievskaya had not prepared a defensive position. Near this village was a German aerodrome with 20 planes. Here likewise, there was no provision for an organized defense.

The general layout of the terrain favored a mounted attack. The presence of many gullies and ravines gave

cover for the approach march and permitted the concentration of forces necessary to bring about a sudden attack.

The attack began after a preliminary reconnaissance had determined that a battalion of infantry with tanks was concentrated in Evlampievskaya, and that the enemy had no knowledge of the presence of Soviet cavalry.

Screened by a large gully, one squadron attacked the enemy on the flank, two squadrons carried out the frontal attack, while the fourth squadron—the reserve—moved to the right and back so as to follow the squadron attacking the flank.

The movement into the attack began under cover of an artillery barrage, but initially no small arms were fired. Nevertheless, the enemy was not taken by surprise. It turned out that the enemy had adapted some near-by heights to his defense, and from these he began to pour machine-gun fire on the attackers. It became obvious that these fire positions could not be suppressed by the attack then in progress.

On seeing that the enemy fire was increasing, the cavalry commander gave the signal for his units to dismount. This was carried out under cover of fire, and the dismounting was performed so quickly and efficiently that the losses proved insignificant.

The horseholders galloped the led horses into the nearest ravine, while the dismounted squadrons, continuing the attack, brought all their fire power into play.

Very shortly the enemy was forced to abandon Evlampievskaya and retreat.

Note that in the beginning the regimental commander was not well informed about the enemy's defenses, but upon seeing this fault he did not hesitate to improve his position by going into dismounted action.

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#### THE SCOPE AND LIMITS OF MOUNTED ATTACKS IN MODERN WARFARE

*Given the proper opportunity a mounted attack can prove successful, but the circumstances must favor such an attack; the attack must be supported by all cavalry weapons.*

*The combination of cavalry with tanks produces the most successful "mounted attack"; there should be very little gap between the tank and horse elements in such an attack.*

*Enemy aircraft is a serious hinderance to mounted pursuit.*

*A retreating enemy provides one of the best targets for mounted attack.*

*Accounts of actions by Red Army cavalry present a successful argument to support the contention that mounted attacks have a place in the warfare of this era.*

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Sovfoto

When a mounted attack is not plausible, a smart commander dismounts his troops, sends his led horses to a place of safety, and attacks as infantry. Led horses are then quickly available for rapid pursuit and annihilation of the enemy as soon as a breakthrough is indicated.

### PURSUIT

Mounted attacks are extremely successful against an enemy who is retreating. In 1943 many such mounted attacks occurred in the south after the destruction of the enemy at Taganrog. The retreating enemy, clinging to every fortification and height favorable for defense, held onto these points for a certain time, but eventually relinquished them to retreat westward in his vehicles. The cavalry, learning these enemy habits, applied the following tactics of attack: not more than half of a unit body was dismounted, and attacked either the enemy's recently improvised flanks or junctions between his defenses, while the remaining cavalry, in complete readiness for mounted action, was disposed in hiding.

When the enemy's fire began to weaken in the course of a battle, the cavalry commander, supported by all of his fire power, led into action those subdivisions which had been in hiding and awaiting the signal for mounted attack. As a rule, the enemy never had time to withdraw and either surrendered in the field or was annihilated.

Then the cavalymen, following their reconnaissance, galloped to the next line of defense. Approaching close to the enemy, they dismounted, and pressed on as infantry. When the enemy prepared to retreat, the cavalry unit mounted up and again attacked on horse.

Enemy aircraft is one of the more serious hinderances to cavalry operations during the period of pursuit. However, cavalry is taught to oppose it. Besides taking active measures to ward off enemy aircraft the cav-

alry makes use of the terrain and near-by objects to camouflage its presence.

### CONCLUSION

From all narratives, it is evident that mounted attacks have not lost their significance, and that they can produce good results if the cavalry is operated in conformity with these modes of action. *Mounted attacks can only be undertaken when the circumstances are favorable, and then it is obligatory that every cavalry weapon supports the attack with heavy fire.*

The combination of cavalry and tanks produces the most effective mounted attack. In such an offensive it is usually the practice to send the tanks forward first as a means of crushing the enemy's fire positions; this is done after the artillery and mortar barrage. The distance between the tanks and the attacking horse formation must be held to a minimum so as not to give the enemy the slightest pause in which to recover and cut off the horsemen from their tanks by fire.

When it is impossible to continue the attack mounted, the best method of sustaining the initial offensive is to dismount and fight on foot. During this phase, however, even when the attack is progressing in his favor, the commander of the dismounted elements must not forget that he can and must finish off the enemy with a mounted blow. When conducting such an action, therefore, the commander is obliged to remember his horseholders in time to bring them forward so that he can mount up and quickly go into action either in pursuit, or to deal a last paralyzing blow at the scattered enemy ranks.



# Raid of a Cavalry Squadron<sup>\*</sup>

by Lieutenant Colonel F. Voloshin

THE Polesie area, consisting largely of swamps, has very poor roads. The marshes, stretching along the Belorussian rivers, form a serious obstacle to maneuver and movement of troops. In getting from one village to another, not more than about two miles apart in a straight line, it is often necessary to cover from 9 to 12 miles in a roundabout way.

Lieutenant Foma Tkachenko's squadron of cavalry was stationed in the village of Kozlovka on the bank of the river Berezina. Beyond the dense forest, which surrounded the village, the meadows and soggy swamps were broken by several lakes and intersected from east to west by the small Rudynaka River. The cavalry squadron was to capture the small village of Cherniye located on the important highway three miles from Kozlovka, but between these points was the deep spongy bog of Kachai.

Local inhabitants told the cavalymen of various people who had been lost in the Kachai quagmire. Only last year it had claimed to Hitlerites who were trying to track down a partisan, and 5 years ago a village hunter had fallen victim to its treacherous but seemingly solid surface.

The problem of crossing the marshes greatly disturbed the lieutenant. The brushwood road leading around it was about 11 miles long, and there was no time to lose. Moreover, the road was heavily guarded by Germans, so Tkachenko decided to try to cross Kachai swamp.

With the aid of wide wooden skis, 4 Red Army men, led by a junior lieutenant, went out reconnoitering. An hour and a half later they returned with the discouraging report that Kachai swamp was impassable. The fetid morass was as much as 8 feet deep, and scattered throughout were "windows"—deep, treacherous wells covered with a tenacious growth.

The cavalymen pondered the situation. This was not the first time that they had found themselves faced with difficulties. Many times since the beginning of the war they had been in dilemmas, but they had always found a solution. Lieutenant Tkachenko studied the map and measured the distance.

The small river of Rudyanka connected the Kozlovka area with Cherniye Brody. *The cavalymen would swim to their destination!* When the sun went down beyond the forest and a mist settled over the swamp and river, Tkachenko ordered his men to undress, tie their clothes to saddles on their horses, and enter the water. With each cavalryman holding the reins with one hand and paddling with the other, they swam by the side of their horses against the current.

Under cover of darkness the cavalymen covered about two miles and emerged on the bank not far from the outskirts of Cherniye Brody. After making their way through orchards and gardens into the village, they attacked in dismounted formation and caught the Hitlerites unawares. The entire enemy garrison was wiped out and two artillery batteries captured.

A cavalry unit on the Southwestern front is seen swimming a river to the enemy shore. Germans have been often surprised by the sudden appearance of Cossacks at unexpected points.

<sup>\*</sup>By cable to THE CAVALRY JOURNAL, from War Department, U.S.S.R., Moscow, July, 1944.





# Basic Military Facts Co

**Thorough and complete basic training for the individual and for small units.**

**Offensive spirit and eagerness to close with and destroy the enemy.**

**Leadership.**

**Teamwork and coordination in the employment of combined arms.**

**Physical fitness.**

**Battlefield technique. All movement on the battlefield is necessarily slow and deliberate.**

IN all reports of battle experience the soundness of our tactical doctrines prescribed in War Department training literature has been confirmed. Failures or tactical reverses have resulted from disregard or misapplication of these principles or from lack of judgment and flexibility in their application.

In general the experiences of all commanders may be summed up in the words of one commander who said: ". . . it appeared significant that when principles taught in Field Manuals were followed, good results were achieved, and deviations brought trouble."

The following points are stressed with monotonous regularity—

*First: Thorough and complete basic training for the individual and for small units.* The training of an efficient military organization is not unlike the training of an athletic team. The prime requisites of each are: first, individual proficiency, and secondly, team play. This includes thorough discipline and training in other basic subjects such as scouting and patrolling, dispersion, camouflage, sanitation, and so forth, but above all, the expert use of individual weapons and perfect team work as part of the crew, squad, and platoon.

*Second: Development of the offensive spirit and eagerness to close with and destroy the enemy.* A man becomes a good soldier only when he places his duty above his personal safety. This is one of the imponderables, as *no one* can be sure how he will react to combat.

It may be assumed, however, that troops will fight as they are trained and led. It is always necessary to inculcate a disciplined fighting spirit and a realization that a price must be paid for success in battle.

If possible, untried units should be eased into their first fight. This will lessen their initial shock of battle and give them confidence. Some units who suffer heavy casualties initially do not recover for a long time. Likewise, replacements should not be rushed into battle. They should be brought in during a rest period and given opportunity to get acquainted, particularly with their teammates and leaders.

Men become tired and battle weary, and this must be recognized and watched. This condition comes earlier to some men than to others, depending largely upon the man's physical condition, training and character—but it comes eventually to all men. Battle fatigue seriously affects combat efficiency and when it becomes prevalent in a unit, then it is better to introduce fresh, eager soldiers, although less experienced.

*Third: Leadership.* Leadership is a natural gift. Some men have it to a very high degree, and their fellows will follow them practically anywhere, while others do not have it at all. Therefore, the placing of the right men in positions of leadership is the most important safeguard for success in battle.

It is a function of command to select and place the natural leaders in positions requiring their priceless tal-



# Confirmed on Battlefields

ents and to utilize the others on appropriate staff or administrative assignments out of close contact with the men. In addition to selecting the leaders, it is necessary to earmark and train their logical battle replacements. A military unit works on the same principle as any championship team. Not only must each man know his job, but there must be perfect teamwork and there must be good substitutes available when replacements are needed. Leadership is a question of life or death to the man in ranks. The weak leader must be replaced promptly or the reaction will go down to the last man and the unit will fail miserably in battle.

The chain of command functions well in military organization and, except in emergency, should not be violated, not even on the battlefield. Generals and colonels leading platoons under fire make good copy for war correspondents but, although such acts may win medals they seldom contribute anything worthwhile to final victory.

Success in combat demands the subordination of the individual to the accomplishment of the team or group mission. Teamwork is based on the belief that the team task *can* be accomplished, the knowledge that the leadership is competent, and the confidence that each member of the team *will* perform his share of the assigned task.

Our officers as well as our soldiers must know and perform their assigned tasks in combat and none must jeopardize the victory by free lance operations, however heroic these may appear at the time.

*Fourth: Development of teamwork and coördination in the employment of the combined arms.* Close and effective coördination between the infantry-tank-artillery team is an essential requirement for success in battle. None can do the job alone. None should try. The infantry must not expect the artillery or the tanks to annihilate the enemy; neither should the infantry be committed without the close support of every available tank and artillery piece.

The artilleryman fights effectively from a position well behind the line of contact; the tanker fights behind several inches of very fine steel, but the hairy chest of the infantryman is protected only by his OD shirt. Coördinated team play between these three musketeers of the modern battlefield requires careful training and mutual appreciation. First of all, they each require reliable and instant intercommunication. The artillery must pave the way by smothering the hostile artillery and drive the opposition to cover; the infantry must take out the antitank guns, and the tanks must help take out the enemy infantry and their automatic weapons. It must be a fixed rule and a point of honor that neither tanks nor tank destroyers will permit their infantry to be overrun by hostile armor, no matter what

it costs to themselves. This is the rôle of the infantry-tank-artillery team. This team play will engender mutual respect and comradeship on the battlefield which is essential to victory.

*Fifth: Physical fitness.* The American Army ranks high in physical fitness. Each man must further prepare himself individually according to his job and according to his age. This does not contemplate the spectacle of middle-aged high ranking officers running across country or otherwise competing physically with vigorous young men. The probable injury to health and the resulting loss of experienced leadership is not warranted by the results to be achieved. Each man, however, must prepare himself to go without sleep, to withstand the worry and responsibility of battle, and to remain calm and fit.

The infantry soldier above all others must be developed into a rugged individual. He must be accustomed to long marches with full pack, up hill and down, so that he can carry a burden, withstand fatigue and exposure in cold and wet weather, go several days without hot food or sleep—all this and more without getting sick and still retain his combat effectiveness.

*Sixth: Battlefield technique. All movement on the battlefield is necessarily slow and deliberate.* Our training problems too often convey faulty concepts by encouraging grandstand moves and by rushing through situations in a few short hours that would require days and nights of heroic struggle in battle. This is probably the most unrealistic feature of an otherwise fine training program, and the one most difficult to correct. Time can be saved by forethought and preplanning, by rapid decisions, and by being prepared for any emergency. The mark of a battle-wise unit is the deliberate and assured way it prepares for battle, checking on every detail and making certain that everything is set and ready for any contingency.

An objective in battle is usually won in the first try, or it is not going to be won at all with the initial set up. Failure initially may indicate the need for a greater concentration or more thorough coördination of artillery or tanks, or exceptionally the commitment of a fresh assault unit under a better leader. Most attacks that fail, do so because they were not coördinated fully. The urgency of the situation may justify a piecemeal attack, but whenever possible, adequate time must be allowed for coördination to include small units.

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The author has interviewed many senior commanders and observers overseas as well as studied the mass of combat reports and recommendations submitted from all battlefronts.

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# MUSTS FOR RECONNAISSANCE LEADERS

by Lieutenant Colonel Leo W. Mortenson, Cavalry

## Alertness.

The keynote to successful reconnaissance (as well as to personal survival in combat) is constant, studied alertness by every man involved in a reconnaissance mission. No member of a reconnaissance unit can ever afford to relax his attentiveness, his awareness of the immediate situation, or the keenness of his observation, while engaged in his specialty.

## Aggressiveness.

When confronted with an impasse or an unknown situation full of danger, *do something*. Don't be foolhardy and employ the bull-in-the-china-shop solution. (Reconnaissance units don't make line bucks.)

Seize the initiative and employ every element of available force to gain the needed information about the enemy or to avoid him and continue on your way.

Don't be timid. Take calculated risks, but always remember that in reconnaissance it is the end run that pays and not the power play through the line.

## Battle Play.

Develop your battle play in your own vehicle, team, platoon, or troop. SOP for all contingencies that can be foreseen will relieve the necessity of having to plan details in a crisis when there is no time to lose.

Study the recently issued Cavalry School manual, "Battle Drill." Adopt its formations, or adapt them to the particular circumstances.

## Three Teams.

Be a *three team* platoon leader. Many platoon leaders attempt to solve a situation by the use of their lead team only, or waste precious time in slow, tedious personal reconnaissance while two other complete teams remain idle, often without even having been informed of the situation. There is always more than one thing to do, more than one direction to be searched. Don't hesitate to employ your teams on separate missions. When the lead team is stopped, make it SOP to seek the hostile flanks with the other two or to find that by-pass which almost always exists.

## Reserves.

It is normal to hold a portion of the reconnaissance force initially as a *reserve*, although this procedure is

not obligatory for formations smaller than a troop. Usually this reserve amounts to one-third of a reconnaissance command—a team for a platoon, a platoon for a troop, a troop for a squadron. Many commanders seem to have the idea that the reserve has the sole function of providing security for the CP and, therefore, hang onto it desperately until all forward reconnaissance elements are hopelessly bogged down. This is a fatal mistake.

## Use that reserve!

The purpose of any reserve is to influence the action at the decisive moment, to *win the crisis*. So don't hoard it but when the forward reconnaissance elements are stopped or slowed down to a snail's pace, without hesitation *commit the reserve* to assist in forcing patrols through, to intensify the reconnaissance, or to renew it in another direction. There is no value in having a reserve follow the CP around interminably the way the tail follows the dog. If necessary, constitute CP security from among troop mechanics, clerks, and cooks until some combat element can be withdrawn from the front to form a *new reserve*.



Be alert.



### Roads.

Utilize roads for movement until hostile contact becomes imminent. Then wherever and whenever the terrain allows, move off roads—keeping under observation at all times the road which is your axis.

For wheeled vehicles, cross-country travel is slow, damaging, and treacherous, so use those roads whenever the situation permits.

### Move by bounds.

Cover that "lead bug" when it dashes forward. Send it to a definite spot and before the "bug" darts out of its cover, point that 37 on the selected spot or on the most suspicious piece of terrain.

Each bound has for an objective a point of observation or a spot beyond which the lead vehicle can no longer be protected. A point of observation may be a hill, a cross-road, a tree line, the entrance to a defile, the near side of a bridge, a bend in the road. Cover them all. If necessary, dispatch both bugs of a team or two teams of a platoon if the distance from the axis of march warrants.



Be aggressive.

Neglect no vantage point for observation to the front or the flanks, and move from vantage point to vantage point by bounds.

### Terrain.

Learn to appreciate terrain. Never fail to investigate cautiously and thoroughly the piece of ground, the patch of woods, the ravine, that may harbor an ambush. Never pass a hill, a crest, or any commanding ground that affords a vista of observation without taking advantage of it. Either make a personal observation or dispatch a team, a vehicle, or a scout to observe. Make this so habitual as to become instinctive.

### March Outposts.

When halted, establish march outposts. At all halts,



Use your reserve.

especially at phase lines, provide all around security and observation. In other words, move something (even if just a dismounted trooper) one bound in each direction from your command car—front, right, left, and rear.

### Phase Lines.

Limited objectives are specified in order to effect lateral coordination between units in movement. Usually they apply only to the forward elements in an advance or to the rear elements in a withdrawal and do not affect the movement of CPs or reserves.

Choose phase lines for the following characteristics:

1. The distance between phase lines must conform with the desired rate of advance.
2. Phase lines should connect terrain features readily recognizable both on the map and on the ground, or should consist of a feature such as a highway, a stream line, a railroad, or an imaginary line connecting a series of road junctions, cross roads, villages, ridge lines, etc.
3. They should be on the forward side of features, the possession of which would be of advantage, such as rivers, ridge lines, lateral roads, or the far ends of defiles.

SOP for patrols upon arriving at phase lines is:

1. Effect lateral contact (only if time permits or the situation demands).
2. Establish march outposts and OPs.
3. Cross to continue reconnaissance at the indicated hour unless specifically directed to the contrary.
4. Use the halt at a phase line to plan the movement to the next phase line and inform all members of the patrol of the details of that movement.
5. Make a thorough check of all administrative de-





Investigate.

tails such as fuel and ammunition, of supply and condition of all vehicles of the patrol.

#### Defiles.

Secure the exits of defiles before committing your unit. Once your main force has entered a defile you are fixed to the road and powerless to maneuver to fight, or sideslip to escape. If the defile is a bridge, prepare to cover the far bank with fire, and then send your scouts forward on foot to determine if it is passable. If it is not mined and will carry your vehicles, send the scouts, either mounted or dismounted, to the other side to discover an ambush or a lurking enemy.

Mere road reconnaissance is not enough to insure a fair degree of safety. Only when you receive the "all clear" from your forward scouts can you prudently send your main body across. If the defile lies between two hills or embankments, push your scouts through to the far end first and secure the exit before entering with



Send messengers.

your main body. When assured that all is clear, have your main body move rapidly through.

If the defile is continuous for many miles, as a passage through a forest, you will have to enter it before your scouts clear the far exit. In this case, do not close on your scouts but move rapidly by bounds from one vantage point to another in their rear. Maintain contact by radio or visual signal with them throughout.

#### Lateral Reconnaissance.

Don't neglect lateral reconnaissance. Cover the roads and trails, and investigate to the limit of your resources all suspicious or advantageous terrain features in your assigned zone. Upon arrival at phase lines make contact with the units on your flanks if time permits and lateral routes are accessible. The extent of lateral reconnaissance depends upon the rate of reconnaissance, the road net, the breadth of assigned zones, and the mission in general.



Use map, compass, odometer and common sense.

#### Messengers.

When radio fails, do not wait indefinitely for radio contact to be reestablished. Use messengers. Brief your messenger carefully before dispatching him and be sure that he has a map, knows his location and destination, and is familiar with the general contents of his message. When there is extreme danger of your messenger being intercepted, send an alternate messenger by a different route. Get that information back immediately by any means available.

#### Location.

Coordinate these four: your map, your odometer, your compass, and your common sense. There have been far too many instances of teams, platoons, and even higher echelons, becoming lost and wandering in circles, accomplishing nothing.





### Seize the initiative.

Develop your sense of direction, orientation, and distance; read your map accurately; but put your faith in your odometer and your compass. If you do get lost, don't lead your entire team or platoon on a wild goose chase but stop where you are, get under cover, and send vehicles or scouts in several directions to find landmarks.

Know where you are at all times. Constantly compare your map with your odometer and with terrain features, but bear always in mind that no map is absolutely without error. No single feature of reconnaissance is more important than this: *Every man of a reconnaissance unit must know his location at all times.*

### Axis of Advance.

Reconnoiter thoroughly your assigned axis or route of advance. When your axis, however, is blocked either by enemy or terrain obstacles, report the circumstances, and leave it temporarily in order to bypass and continue on your mission.

If the enemy denies advance along your axis and forces you to leave it, do not abandon it completely but leave a portion of your force in contact unless you are relieved of such responsibility by your higher headquarters. Always, when you leave your assigned axis, return to it as soon as conditions will allow, and always report your action.

When the accomplishment of your mission conflicts with advance along your axis, your mission wins.

### Contact.

Once gained, contact is maintained at all costs, but this applies only to the contact you have been dispatched to establish.

Don't fritter away your force and don't waste valuable time in an attempt to maintain contact with every trifling little hostile patrol you encounter. Save your strength to gain and maintain contact with the specific enemy *your mission* requires you to locate. Then hang

on like a bull dog with every means at your disposal and report every shred of information you can uncover about it—its composition, strength, attitude (whether it wants to fight, sit tight, or whatever), its location, its flanks, *everything* about it.

Let your mission be your guide and when it requires you to maintain contact, be a leech, but elude those small enemy patrols and keep them guessing.

### Orders.

Make your orders *clear, concise, complete*. In issuing orders make the following SOP.

1. Follow implicitly the Five Paragraph Form.
2. Delete all extraneous matter without specific application to your own mission and your own immediate situation.
3. Do not repeat instructions that are matters of SOP or of elementary training.
4. Plot as much as you can on your map and place that map where it can be seen plainly and its information copied easily by those who receive your orders.
5. Do not attempt to issue definite instructions covering a situation that is vague or distant in space or time or that is contingent upon an undetermined chain of circumstances.
6. Insure that in substance your orders penetrate to every man in your command and that every man knows exactly his place and his part.
7. Question your subordinates upon the context of the order, particularly that portion which applies specifically to each one of them.
8. Leave no room for misunderstanding. Do not issue an order that can merely be understood; issue one that cannot be *misunderstood*.

In any doubtful situation, *seize the initiative!*



### Report your actions.



# REALISTIC RECONNAISSANCE

ONE big reconnaissance lesson which a careful reading of reports from many battle-seasoned American intelligence officers emphasizes is that the great similarity of mistakes, errors in observation and judgment which have been repeated in one action after another, gives positive indication of *faulty collection and relay of vital information*. This fault can and must be eliminated by thorough practical training previous to actual combat.

Reconnaissance personnel must somehow be trained to observe accurately and to relate both accurately and swiftly, just what they see and hear. Their minds must be made to register camera sharp pictures of what lies before them, or of what may be concealed from sight. They must be drilled by *incessant practice* to absorb details of a developing combat situation quickly, but not so fast that important facts are overlooked in the process. Finally, they must forever be warned that speed in sending that information back is absolutely essential.

It is well known that when several eyewitnesses are permitted to view a sudden, distracting or startling event, subsequent interrogation will produce as many versions of the event as there were eyewitnesses to it. The fact remains, however, that the purely factual data obtained from verbal or written reports of these several observers is basically identical when stripped of the qualifying phrases used in the different accounts—phrases which cloud the true significance of what happened—a dangerous business on reconnaissance.

The important thing is to train reconnaissance men to relate accurately what they observe. There must be no mistaking haystacks for tanks or towed trailers for artillery pieces. Overseas combat commanders report that these common mistakes have occurred repeatedly,

and they urge thorough and practical training now, on this side of the water, before additional units going into battle pull the same "boners."

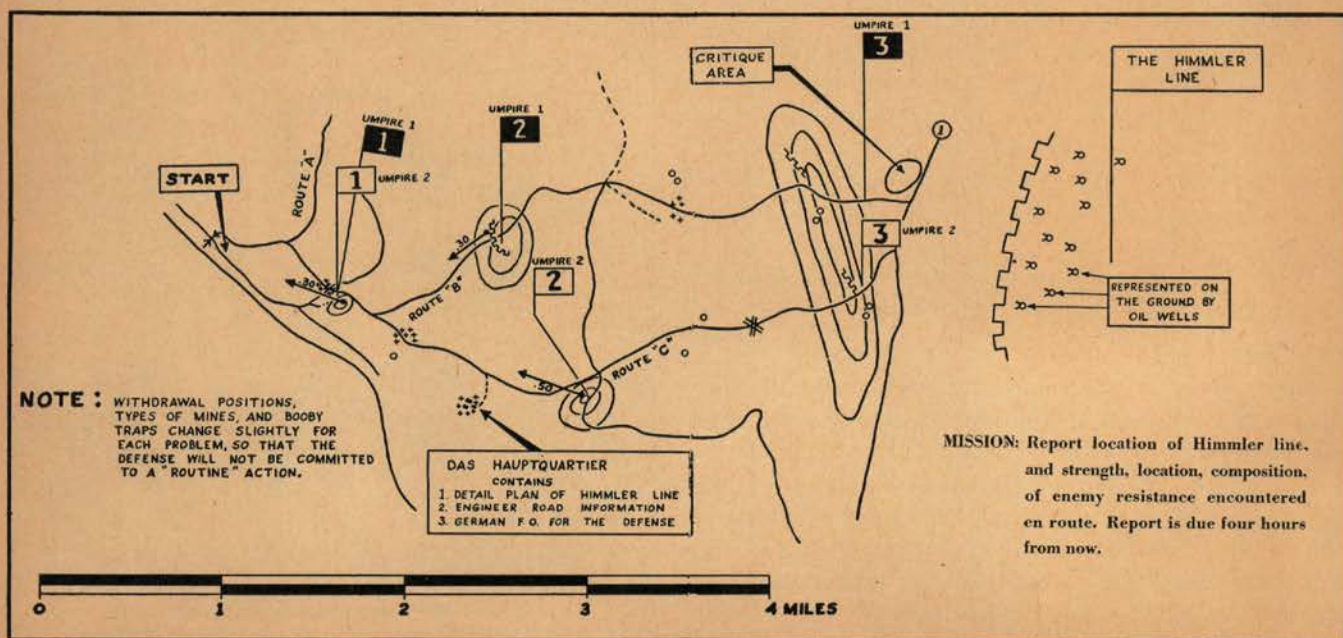
There is no doubt about the vital need for additional reconnaissance instruction through well-planned situation classes and exercises. A command in the field that does not have swift, capable and dependable reconnaissance is habitually hampered and forced to grope blindly in ignorance of the true tactical situation. At best, its commander may be forgiven for halting at a given place, but lack of information does not excuse him in the Army's view, for he is guilty of that unpardonable military sin, "inertia."

How can this purpose be accomplished? One answer lies in the establishment during training of a practical observation post course—the setting up of realistic, complicated and combat-tested situations designed to test intelligence and reconnaissance platoons and cavalry troops in time-limit zone reconnaissance, both day and night.

The intelligence section of a division can meet this need for additional scout training by staging a series of close-in zone reconnaissance problems.

One recent problem was a four-hour, four-mile zone reconnaissance, which six division intelligence and reconnaissance units and four troops of mechanized cavalry tackled during a 10-day period. In separate day and night actions, the men, going through mine fields and over mined and booby-trapped roads, bridges and by-passes, met tough opposition from an "enemy" clad in the authentic field-gray Nazi uniform.

Snipers and machine gunners had to be liquidated, mines buried under roadways and by-passes disarmed and removed, and road blocks by-passed or demolished. Meanwhile, a constant stream of enemy intelligence





# CE TRAINING

*by Captain H. V. Douglas*

was kept flowing back to S-2's by radio. Umpires in radio equipped ¼-ton trucks kept a complete record of all transmissions. These umpires had complete control of the problem at all delaying points and unit intelligence officers followed the individual platoon and troop commanders in half-tracks as they forged ahead in the developing action. Putting the S-2 well up front is far from normal procedure, but in this case he was given a forward position so that he could get a better understanding of the capabilities of his agency.

One important feature of the instruction problem was that all S-2 section records, situation maps, journals and work sheets, were kept by enlisted men. This permitted each intelligence officer to check accurately his particular responsibility. The S-2 officer of a participating combat command likewise was on hand to check incoming reports from the field.

Officers of the engineer platoon, which simulated the enemy in the continuing problems, reported on the technical and tactical mistakes that each unit had made, and at the conclusion of the problem, the ability of each unit's reconnaissance was determined by the amount of accurate information which it had sent back to its S-2 section.

The mission was based upon studies of actual situations calling for aggressive close-in reconnaissance by U. S. forces in the Italian theater. No written material, "canned messages," or "assumed" conditions were employed. Various types of fire power were represented by blank ammunition and pyrotechnics. Credit for eliminating fire from a position was denoted by the firing of explosives in that position at the proper time, and live "smoke" mines and booby traps were used extensively. Flares were employed during night phases.

The problem situation presupposed a German infantry regiment and battalion of field artillery in position to protect the "Himmler" line of oil wells. In a previous battle, the main "Nazi" army had been defeated and, now in full retreat to the north, had left behind "suicide" units to carry on a delaying action. The mission was to make a complete reconnaissance of the intervening four-mile zone and report back to G-2 the strength, composition and location of enemy elements encountered, so that contact with the main Nazi force could be reestablished.

Realism was emphasized throughout the problem. Casualties were promptly eliminated from the action and vehicles which were disabled by mines were "winched" out to preserve the tactical situation. One unit even lost the vehicle in which its communication radio was installed.

A novel test of initiative came midway through the terrain when advancing intelligence and reconnaissance



Members of a reconnaissance unit probe a short defile which cannot be by-passed during realistic training.

platoons stopped to investigate a well booby-trapped cabin, complete in setting even to Hitler's picture hanging on the wall. On a table in the center of the cabin was a Nazi military folder containing among other documents a scaled map of the oil field objective and a German field order containing three defensive plans.

Anyone attempting to pick up this folder would set off the booby trap, but resourceful reconnaissance men solved this dilemma by pulling the document from the loose-leaf folder. Upon comparison with a panoramic sketch of the German oil field stronghold, the map proved to be an accurate one and the unit whose men took the trouble to verify and amplify their reconnaissance in this manner received high rating in the test.

Flagrant violations of basic reconnaissance principles were not tolerated. In such cases, the unit participating was halted and required to start the course again from the beginning. During one problem 15 men went to work on a mine field without first eliminating enemy snipers on a dominating hill 50 yards to their front. The snipers opened fire and all 15 men were designated as casualties. Since this was too gross an error merely to mention at a critique, the men were required to retrace their steps and do the job properly. They did.

Excerpts from umpires' reports indicate clearly in just what phase of reconnaissance the various units needed additional training. "Began work on mine field without knocking out snipers,"—"Not impressed with necessity of being watchful for enemy antipersonnel devices"—such were the remarks passed on to the men involved.

In the belief that reconnaissance personnel should know what becomes of their information after it is transmitted by radio to the rear, they were permitted to inspect S-2 journals and work sheets at the critique held after each problem. Round-table discussions led by umpires and participated in by the men of the intelligence and reconnaissance units served to clarify the subject and to remove reconnaissance reports from the realm of mystery to matter-of-fact news gathering.



# THE TANK COVERING

**F**RONTAL security for armored units in motion is provided by an advance guard or a covering detachment. The advance guard secures the front of a unit moving in march column along roads, while the covering detachment protects the unit's front as it moves in approach march formation, usually cross-country when contact is imminent or has been gained. The actions of a covering detachment are comparable to those of the scouts in the infantry rifle platoon.

## MISSION

The covering detachment provides frontal security for a larger unit by observation, attack, defense, or any combination of these methods. The primary mission is that of security; the secondary mission is reconnaissance.

Specifically the duties of a covering detachment are to:

- (1) Guard the main body from frontal surprise, and obtain information by observing to the front and flanks.

- (2) Push aside small enemy patrols, outposts, or detachments, and offer resistance to larger forces until the main body attacks.

- (3) Guide the main body over the best terrain available.

- (4) Provide the unit being covered with battle reconnaissance by determining the disposition of the enemy.

- (5) Develop the situation.

- (6) Provide protection for the main body commander in his personal reconnaissance of the forward area.

- (7) Cover a larger force in the approach to the line of departure.

- (8) Support the main body in the attack, when it (the covering detachment) is sufficiently strong.

## USE

The covering detachment may be used:

- (1) In the advance from the assembly area to the attack position.

- (2) From the attack position to the line of departure.

- (3) Beyond the line of departure, in unusual cases when the situation is undeveloped, and the unit commander desires frontal security and more battlefield reconnaissance before committing his unit.

- (4) In any attack over previously unreconnoitered

terrain as would be the case in a pursuit, unplanned flanking maneuver, or hasty attack.

## COMPOSITION

The covering detachment will ordinarily come from the unit whose movement to the objective is being covered. It is rarely reinforced except for reconnaissance vehicles, but it is normally supported by assault gun and mortar fire from the head of the main body.

The size of the covering detachment will vary with the size of the unit protected, the terrain, and the frontage desired developed. Normally, the covering detachment of a tank platoon will be from one tank to one tank section; of a company, one section to one platoon; of a battalion, one to two platoons; of a combat command, two platoons to one company.

Because of their mobility, light tanks are specially suited for this work.

## COMMUNICATION AND CONTROL

Communication and control between the main body and the covering detachment are normally maintained by radio, tanks, and ¼-ton trucks.

The commander of the unit being covered, from a position between the covering detachment and the main body, controls the direction and speed of the entire covering detachment, by prescribing limits (terrain objectives) of bounds to be made. (Sketch A.)

When the commander of the main body issues his order that paragraph pertaining to the covering detachment should contain the following information:

- (1) The general route to be taken.

- (2) The frontage to be covered.

- (3) The limit (terrain objective) of the first bound, and tentative subsequent bounds when practicable.

- (4) Tentative orders for the conduct of the covering detachment when its mission is completed.

Communication and control are normally maintained within the covering detachment by the use of radio, flag signals, and, occasionally, ¼-ton trucks.

The covering detachment commander also prescribes limits of intermediate bounds to be made by the covering detachment. (Sketch A.)

## OPERATION

Using line formation with 100–300 yards between tanks, the covering detachment moves forward as a unit within limits of the intermediate bounds set up by the covering detachment commander. (Sketch B.)

Each tank, moving forward in its respective zone and taking advantage of cover and concealment, ex-

\*Formerly with 1st Armored Division, North Africa.



# DETACHMENT *by Captain William M. Delaney, Cavalry\**

amines suspected localities, and searches its entire zone by observation and reconnaissance by fire. (Sketch B.)

When the covering detachment meets resistance on any section of the front covered, it is supported by fire and *limited maneuver* of nearby tanks. Should the enemy be too strong for the tanks in that area to overcome, the covering detachment commander calls for supporting fire to neutralize the position, while the tanks in that sector maneuver to destroy it. For this purpose, the assault gun and mortar platoons are normally placed at the head of the approach march column.

If the resistance is still too strong, the tanks affected may be ordered to contain the enemy in that area, to withdraw, or to bypass the resistance.

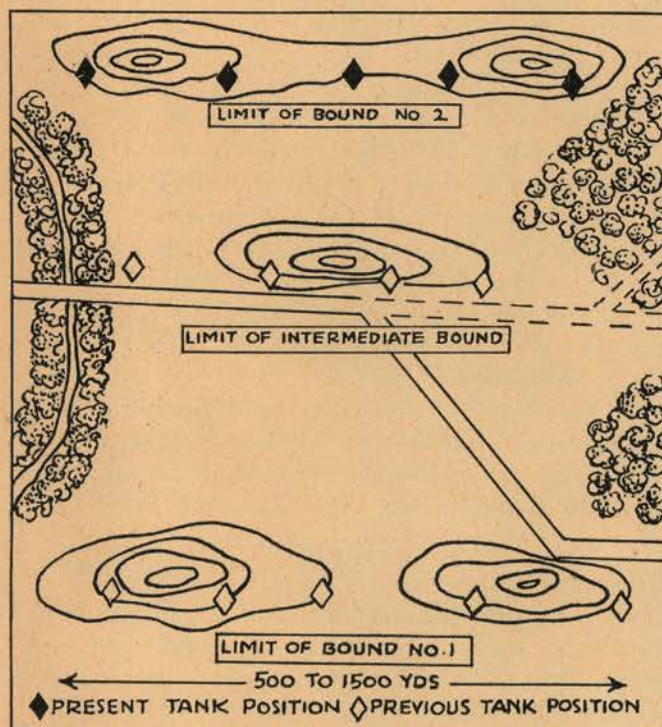
flanks, reorganizes, picks tentative routes for the next bound, and awaits orders to move forward.

The main body guides upon and follows the covering detachment. Based upon the information passed back, it follows the best terrain, by-passes, or attacks small enemy groups not cleared by the covering detachment, and, in most cases, attacks through the covering detachment when the enemy positions are fixed. The distance at which it follows depends upon available frontal cover. Normally this distance is from 500-1,000 yards.

When its mission has been accomplished, the covering detachment may furnish flank and rear security, follow in reserve, or, if exceptionally strong (medium tanks), may constitute the assault or support wave in the attack.

## TRAINING

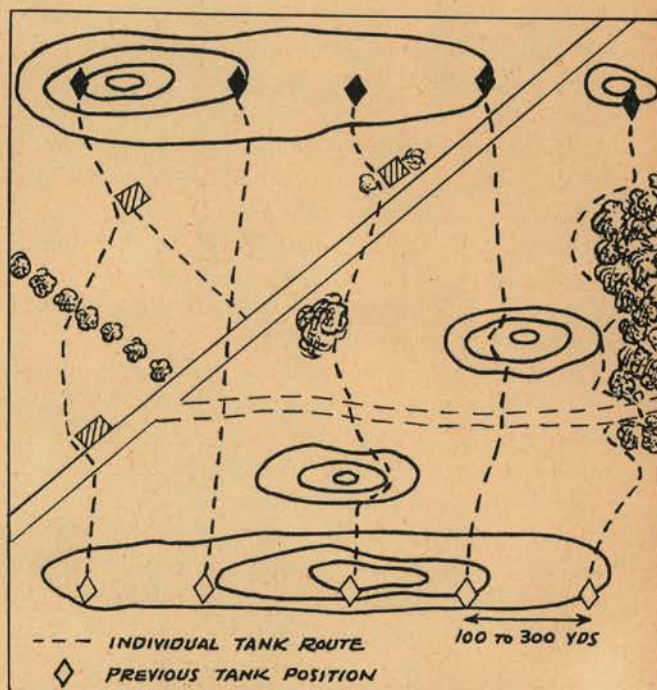
In order to employ a covering detachment successfully, prior training in control and selection of individual routes must be given to the troops. Such flag signals as "all clear" (green flag), "enemy in sight" (red flag), and "out of action" (orange flag) help in the former. The latter, selection of individual routes, takes considerable time in terrain study and teamwork. Without this training, the covering detachment will move so slowly that it will be unable to fulfill its mission—namely, to enable the unit to advance safely and quickly over doubtful terrain without deploying until sufficient resistance is encountered.



Sketch A  
Bounds of the Covering Detachment

The covering detachment commander at all times attempts to sweep and probe the entire area to the limit of the bound prescribed by the main body commander. When resistance is met on the right flank, the center and left flank continue to advance. When casualties occur, each vehicle takes on additional frontage. If a position is ordered by-passed, the entire frontage is resumed as soon as possible. Only by this method can the main body commander receive a clear picture of enemy dispositions upon which to base his attack.

Upon arrival at the forward limit of each bound, the covering detachment takes cover, reports pertinent terrain or enemy information, observes to the front and



Sketch B  
Individual Tank Routes in the Covering Detachment



# "TELL THEM WHY"

*The following S.O.P., designed and effectively employed in an armored division, prescribes an efficient, thoroughly organized Orientation Program.*

THE mission of army orientation is "to create and maintain in every officer and enlisted man a feeling of individual responsibility for participation in the war, and to strengthen his efficiency as a soldier by increasing his understanding as to why we fight." A properly conducted orientation program should keep the soldier informed of the course of the war and news of the world, and give him an opportunity to add to his effectiveness through off-duty study, either individual or group.

The feeling of personal responsibility for participation in the war is developed by making clear to the individual his place in "the big picture"—the importance of his job to his squad, and its relationship to the mission of the unit, the division, and the army. The soldier must understand exactly the manner in which the mission of the armed forces—"utter defeat of the war machines of Germany and Japan"—is vital to him, his home, his family, and his personal interests, both now and in the future.

## Conduct. THE ORIENTATION HOUR

A meeting by the company commanders should be conducted for a minimum of one undivided hour weekly, both in garrison and in the field. Where tactical circumstances make it impracticable to assemble the company, the discussion may be conducted by platoon or squad leaders.

### Procedure.

The lecture method should be avoided, a conference system developed in such a way as to afford the greatest possible opportunity for maximum participation on the part of all personnel.

### Conditions.

- Informality. Smoking should be allowed if possible. The orientation hour is the men's hour—for their benefit and participation.
- Visibility. Informality should be stressed, but it must not be forgotten that good visibility is imperative. The room should be cool and well lighted.
- Visual aids. Maximum use should be made of maps, both in garrison and in the field. These should be of such scale as to be clearly visible to all participants. Other visual aids will include blackboards and charts, when available.
- Seclusion. Outdoor discussions should be in secluded positions, in the shade if possible, away from traffic and other distracting influences.

### General.

#### SUBJECTS

- Know why we fight. (See Fact Sheets 1, 6, 7, 8, 14, 16, 22, 24. Fact Sheets are issued in Orientation Kits by Information and Education Division, A.S.F.)

- Know the enemy. (See Fact Sheets 2, 7, 9, 17, 18, 25.)
- Know our allies. (See Fact Sheets 3, 7, 10, 27, 28.)
- Know the news and its significance. (See Fact sheets 5, 7, 12, 15, 23, 26.)
- Know and have pride in outfit. (See Fact sheets 4, 7, 11, 21.)
- Know and have faith in the United States and its future. (See Fact sheets 7, 13, 19, 20, 29.)

### War News and Analysis.

Discussion should include the latest strategic developments on world battle fronts, the significance of all major operations, and their relationship to each other. Particular emphasis should be placed on the strategic mission of the division concerned, its components and the larger units of which it may be a part.

### Nonmilitary News.

Covering general news, subject matter may range from developments of world and national significance in all fields to information of interest to troops (even of a minor nature) such as sports and personal items from the home front.

### Explanation of Policies.

Policies of all echelons from company to War Department should be included in discussions. Every individual should know the reasons behind everything he is required to do, insofar as is consistent with military security. The practice of "telling them why" should be a continuous process carried on at all times in regard to all policies, but part of this period may be used for the explanation of policies not otherwise covered.

### Local Information.

Information about the area occupied by the unit—data about geography, terrain, people, language, customs and general conditions—can be made available under appropriate circumstances.

## FUNCTION OF THE COMPANY COMMANDER

### Discussion Leader.

The company commander should preside at the weekly orientation hour insofar as tactical conditions permit, but he should not carry the entire burden of the discussion himself. He is not expected to be an expert on all phases of world developments or their meaning. He may call upon individuals who, by reason of their experience or education, are particularly fitted to supply information on special subjects. When such subjects arise, it is the company commander's function as discussion leader to draw upon the knowledge of all those in the organization who are well informed. Maximum participation should be encouraged.

### Preparation.

Although the discussion or conference method lessens the immediate burden on the leader, it in no way diminishes the amount of preparation necessary. The discussion leader must be sufficiently informed to insure that all aspects of the subject under discussion are adequately presented. He should first read any material to be discussed, then make use of the questions supplied with the material (or draw up his own) in



order to stimulate audience participation. At the end of the period, he should summarize the discussion.

#### *Opportunity.*

The orientation hour provides for the company commander the opportunity to contact all of his men in a more direct, personal manner than is the case during normal training routine. It is his chance to stimulate them, to exert his proper function of leadership and to show them the "big picture" and their part in it. The way in which the meeting is conducted will be a direct reflection of the leadership qualities of the company commander. A well-planned, conscientious, capable handling of the meetings will make a lasting impression on the enlisted men, and increase their respect, loyalty, and confidence in the commanding officer.

#### *Assistants.*

#### PERSONNEL

As many commissioned and enlisted orientation assistants in each company should be assigned as are needed to aid the company commander in carrying out his orientation duties. A minimum of four individuals should be so designated. Each should cover a separate theater of war (Western and Southern Europe, Eastern Europe, Pacific, Asia). Each will be thoroughly and constantly informed about all phases of the strategic situation in his assigned theater. These individuals must possess requisite qualifications of knowledge and interest. Preferably they should be college men of high (110 or more) AGCT score, thoroughly informed about world events, able to express themselves clearly before a group, and well qualified to lead discussions. They must be allowed adequate time for preparation.

#### *Meetings.*

Officers and enlisted men engaged in orientation should attend regular meetings to be conducted by the division orientation officer for purposes of preparation and instruction in orientation procedures and materials and for dissemination of information issued by the Information and Education Division.

#### MATERIALS

Maximum use should be made of all orientation materials, maps, books, pamphlets, and mimeographed materials issued by the Orientation Office and carried as organizational equipment. They should be carried separately in such manner as to be available at all times, in garrison, in transit, or in the field.

#### *Situation Maps.*

Strategic situation maps of all major fighting fronts should be kept in such a manner as to reveal progress made during the daily news period and the orientation hour.

Maps of the following areas have been issued to all organizations in the orientation kits; they should be maintained currently and available at all times in garrison or field.

- a. Europe and the world.
- b. Pacific and the world.
- c. France and southeast Asia.
- d. European invasion coast and Balkans.

#### *Care of Maps.*

Maps of battle fronts should be covered with Dura-

seal to preserve them and to make possible maintenance of the situation. For transportation, maps may be folded and carried in regular flat map cases, or, preferably, rolled together. Expanded cardboard shell cartons make excellent containers for rolled maps. Detailed diagrams of field expedients for posting maps and other orientation materials will be issued by the Orientation Office.

#### *Newsmaps.*

These weekly War Department releases, issued to each organization, contain valuable current maps and visual aid materials. Back copies of *Newsmap* should be maintained in a file for reference use.

#### DAILY NEWS

#### *Summary and Discussion.*

Not less than 15 minutes a day (as far as consistent with tactical conditions) should be devoted to summary and discussion of the news of the day, as distributed by division or as compiled by designated company orientation personnel from official radio reports or news bulletins.

#### *Daily News Bulletin.*

This bulletin should be posted daily as soon as it is received.

- a. In garrison, it can be posted in the dayroom adjacent to maps and other orientation materials.
- b. In the field, it should be posted in such a location as to be conspicuously available to all personnel. (If this procedure is tactically impracticable, other suitable methods of distribution to all personnel should be used.)

#### *Displays.*

#### MISCELLANEOUS

In garrison, orientation materials should be displayed in dayrooms. Situation maps should be coordinated with news bulletins, current *Newsmaps*, clippings and pictures of action on each front, and maintained by a designated officer or enlisted man. In the field, materials should be displayed as indicated in field expedient diagrams to be issued.

#### *Company Correspondents.*

At least one enlisted man should be designated as correspondent for unit newspapers for the purpose of supplying information to be used in newspapers and facilitating distribution of such publications.

#### *Off-Duty Education.*

The off-duty education program of the United States Armed Forces Institute (USAFI) should be thoroughly publicized. All personnel should be informed of opportunities for off-duty education, and full assistance given to individuals who desire to enroll. The USAFI catalog and enrollment blanks are available at all times, and orientation assistants in each company should be familiar with all phases of off-duty education and available for consultations.

#### *Continuity.*

It should be emphasized that *orientation is a continuous process*. It cannot be limited to one hour a week. It must be carried on constantly. Every man should know why the job he is doing at that moment is important to his outfit, and to winning the war. "Tell them why" should be the motto and constant job of every officer.



# "Smoke Gets In The

## EARLY USE OF SMOKE IN WARFARE

FOR centuries artificial smoke has been produced by one means or another for military purposes.

That smoke tactics were known to ancient India is indicated in translations from Ramayana (2000 B.C.), such as:

"And clouding the whole sky with smoke that effulgent one . . . hid himself from their gaze. And in that terrible darkness of clouds, began to make a downpour of arrows. . . ."

In 50 B.C., firing of damp straw to smoke out enemy positions was common. The Bible speaks of the Israelites being protected in their march to the Promised Land by a miracle smoke cloud. History records that Caesar and Pompey used smoke in landing operations.

Cavalrymen have long appreciated that dust clouds raised by horses' hoofs help conceal movement and give protection against hostile fire. Gustavus burned wet straw to provide the makeshift smokescreen that covered his crossing of the Lech in the face of Tilly. In 1704 the Blenheim Mist was utilized by Marlborough to surprise the superior-numbered French.

Introduction of firearms and their initial use of black powder enveloped battlefields in so much haze that special smoke operations were futile, but advent of smokeless powder again cleared the fighting atmosphere. During the American Civil War, Professor Shepherd of Yale University suggested the use of screening smoke to President Lincoln but the suggestion was not adopted.

## USE OF SMOKE IN WORLD WAR I

World War I spurred the development of smoke as a troop screening agent. Early in that conflict a small British unit was enabled to withdraw from the La Basse canal defense by the old and simple expedient of burning a haystack. By 1916 some artillery smoke shells were in use, but it was not until the Battle of Arras, a year later, that the value of smoke screens for modern warfare became obvious. Smoke provided a flanking shield for an operation of the 15th Division, A.E.F. Artificial smoke figured in the Meuse-Argonne offensive. In one instance, Marines of the 2d Marine Division crossed the Meuse by resorting to a smoke ruse. Mortars established a screen upon which the Germans concentrated their fire while the "Devil Dogs" spanned the stream at another point. The British also combined smoke with gas shoots to confuse the enemy further.

## USE BY GERMANS IN WORLD WAR II

The Germans demonstrated the value of smoke in the current war when they blitzed the Low Countries.

The Belgian fort of Eben Emael was taken in May 1940 with the aid of man-made fog. The Germans moved up smoke battalions which blanketed that stronghold so effectively that the aimed fire of the defending guns was disorganized. Under this cover, Nazi pioneer troops advanced close to the walls and employed flame-throwers to breach the ports.

The "impregnable" Maginot Line was cracked between Saaralben and St. Avold when the Germans screened a whole line of fortified hills, slopes, and even a nearby fortified village and totally obscured French observation. From a distance of a mile and a quarter, the Germans established a smoke barrage more than two miles long and about 30 feet high. The screen was maintained for two hours while assault troops worked up under the defenders' guns and around in back of the steel and concrete fortifications.

When the Germans reached the Marne in June 1940 the French were organized and prepared for stiff resistance. Suddenly the Germans opened up with two smoke battalions, and the startled French soon found their whole line of observation posts blinded. Believing they were subjected to gas attack, the French donned their gas masks. Meanwhile a German bridgehead was established, and extended. Within two hours resistance had ceased and the Germans were freely crossing the Marne. Even the Nazi assault troops who were first to cross suffered only negligible losses.

## AREA SMOKE SCREENS—GERMAN, BRITISH AND U. S.

It took the present conflict, with its development of the long-range bomber, to introduce the art of smoke camouflage for area protection. Besides hiding production facilities, this supplemental antiaircraft device also protects troop concentrations and communication centers, highways, waterways, and ports and cities.

The Germans early recognized the effectiveness of area screens. Between June 1941 and April 1943 they placed smoke over vital ports in Germany, France, Norway, Italy, and North Africa. They also screened targets in Poland and Russia. They made good use of smoke to hide their warships *Gneiseau* and *Scharnhorst* before those vessels made their spectacular channel dash. In a raid on the battleship *Tirpitz* in Norwegian waters on December 16, 1942, Allied flyers noted that "smoke trails rose from antitorpedo booms projecting from the *Tirpitz*—presumably from generators attached to the boom floats." Smoke was also used to screen the French battleship *Jean Bart* at Casablanca, but a wind blew rifts through the clouds which exposed the vessel and permitted it to be shelled.

In the desperate days after Dunkirk, when the *Luftwaffe* offered its greatest menace to England, the Brit-



# er Eyes"

by

Major George O. Gillingham,  
C. W. S.



The Army's biggest smoke producer is the Mechanical Smoke Generator M-1, which can screen a square mile area in 10 minutes. The artificial smoke is made from oil spray mixed with steam, is harmless to eyes, skin, lungs and clothes.

ish utilized smudge pots burning crude oil, such as those used by fruit growers to ward off killing frosts. Later they developed smoke pots and smoke machines similar to American smoke-producers.

British smoke came into prominence when the war shifted to the Middle East. Their first screen in this area was raised over Malta on May 10, 1942. It is significant that this was the day that aerial supremacy over that island passed from German to British hands. Benghazi was successfully screened with captured German and Italian smoke equipment. The British used smoke bombs dropped from aircraft to permit destroyers and landing craft to remain close inshore during the Dieppe raid.

Smoke has furnished the modern armor for many operations in North Africa, Italy, the Pacific and other areas. Because this war has proved beyond all doubt that smoke screens are a definite factor in reducing casualties as well as being effective for accomplishing various missions, the call for smoke and more smoke is keeping pace with the mounting tempo of the Allied of-

fensive. It is interesting to note that the first Chemical Warfare Serviceman decorated in North Africa was cited for a smoke operation.

#### SMOKE IN ITALY—SALERNO, VOLTURNO, NAPLES

At Salerno the worth of smoke for hiding beach landings was so pronounced that from that time on it has been ordered in increasing quantity. As a result, "Make smoke!" is a recurring order sounded from the Italian theater to those Pacific islands now being liberated.

A brilliant yellow moon shown on the Volturno River Valley of Italy on the night of October 13-14, 1943. General Mark Clark's Fifth Army was on the south bank of the river, facing crack German units organized in depth on the other shore. Every Nazi gun along the 40-mile front was trained on the stream, for the enemy knew what was coming.

As H-hour drew near, our soldiers took up positions in the fringe of woods bordering the flat ground along the south bank. At 1:59 A.M., the tornado of shellfire



which constituted the American artillery preparation ceased. There came a moment of deadly silence, which ended with a burst of American fire. The whole stretch of the northern bank resounded with bursting smoke shells, each belching a blob of white smoke like a string of blossoming cotton balls. The lazy billows, dead white under the frosty moon, rose to form tall pillars. The smoke gradually thickened in the chill north wind to impose an opaque curtain between the two forces.

Behind that cover an initial wave of American assault troops made their way to the river, and waded, swam or paddled to the German side 100 yards away. At other points combat engineers spanned the stream with bridges built under cover of other smoke screens to carry the main body of men across. Thus did white phosphorus shells from artillery, from 4.2-inch chemical mortars, and from floating smoke pots set adrift in the current make it possible for the Fifth Army to cross the Volturno with a minimum of casualties.

An alert smoke crew so effectively blanketed Naples one day last November that a wave of enemy bombers, unable to spot their targets, jettisoned their loads at random, and most of the bombs fell harmlessly into the sea. When our "smoke gets in their eyes," the foe cannot see to bomb with precision. After a fruitless raid on an Allied port, one enemy airman was heard to radio back to base that he couldn't locate the target because of that "damned smoke," or German words to that effect.

#### SMOKE IN THE PACIFIC

On the other side of the world the first recorded American paratroop assault under cover of smoke took

place in the Markham River Valley, near Lae, New Guinea, on September 5, 1943. Spraying smoke from tanks, fighter planes walled off the Japanese forces. Three 4,000-foot screens were released along wooded areas where the Japanese might be lurking. The smoke settled to the ground, then mushroomed up to a height of 400 feet. Following the smoke planes came transport planes which disgorged paratroops on three sides of their objective. By the time the smoke dissipated, the parachute troops had organized for a successful attack on the airfield.

Japanese shipping at Rabaul, New Britain, was successfully attacked with the aid of smoke. Bombs from planes marked off the harbor with two dense smoke walls, each three-quarters of a mile long. These formed a large artificial arena in which the air assault on the marine targets was conducted with little interference from shore batteries.

#### METHODS OF MAKING SMOKE

The Chemical Warfare Service makes smoke in four ways. One is by smoke pots, which use heat to vaporize chemical mixtures. Another method is by mechanical smoke generators, which mix oil spray with steam. A third is liquid chemicals sprayed from tanks attached to the underside of planes; and the fourth embraces shells, bombs and grenades filled with white phosphorus which reacts on exposure to the air to form dense white smoke.

The Army's biggest smoke producer is the mechanical smoke generator, which was non-existent five months before the invasion of North Africa. The truck-mounted type, resembling a "Gay Nineties" fire engine, can with-

Paratroops landing at Lae, New Guinea, September 5, 1943, were protected by massive smoke walls sprayed from tanks attached to fighter planes. This airborne attack, which netted a Japanese air strip was a highly successful undertaking.







Chemical Warfare troops trundle the 4.2 chemical mortar through a smoke screen. Mortar, which has been nicknamed the "goon gun," can fire 20 rounds a minute up to two and one-half miles; fires either smoke or explosives.

in 10 minutes screen a square mile area. The mechanical generators are operated by chemical smoke generator companies, deployed around an area in accordance with wind and other factors. The port of Algiers, for example, was so well protected by this apparatus that for a period of 14 months, although convoys were entering and leaving almost daily, no serious damage was done by enemy bombers.

A newer type fog machine is no larger than a foot locker, weighs only 180 pounds, and can produce almost half as much haze as its larger brother. With favorable wind conditions, this bantam generator can set up a screen 4 or 5 miles long and 200 yards wide at the far end. It is capable of being operated in jeeps, scout cars and other light vehicles, and can be hand-trundled over rough terrain.

"If any apparatus could be decorated, I think it should be the CWS smoke pot!" declared one officer in North Africa. He referred to the pail-like smoke contrivances which come in several sizes, from the 11-lb. pot, which burns about 6 minutes, to the 30-lb. pot, which burns about 20 minutes. They are used by themselves or in conjunction with mechanical smoke generators. These small pots have been particularly useful in marking off beachheads for landings in the Pacific theater. There is also a floating smoke pot, not unlike a 5-gallon pail in appearance, which weighs 27 pounds and burns for from 10 to 15 minutes.

In one engagement a chemical weapons battalion set out hundreds of smoke pots which produced a screen 6 miles long and 2 miles high to mask the movement of supplies along a critical highway in Italy. Another chemical weapons battalion, operating 170 tons of smoke pots, kept a smoke blanket on 12 square miles of territory for 3 consecutive days.

Smoke grenades—or "canned smoke"—weigh less than 2 pounds and burn for 2 minutes. The white phosphorus grenades, besides having antipersonnel effect, can be used for establishing small screens and for plugging holes in larger ones. Then there are grenades which give off smoke in various colors for signaling purposes, to designate targets, mark off vehicle routes, etc.

Smoke-producing white phosphorus is used in aerial bombs and artillery shells. The most effective WP weapon, however, is the versatile 4.2 chemical mortar, which can fire 20 rounds a minute at ranges up to two and one-half miles. This mortar is, in effect, a 3-edged sword. It fires smoke or high explosive with remarkable accuracy. This muzzle-loading rifled mortar was affectionately dubbed the "goon gun" by chemical troops who first used it in Sicily. The chemical mortars functioned so effectively at Mount Fratello, Sicily, in August 1943 that this engagement is popularly referred to as the "Battle of Goon Gun Hill."

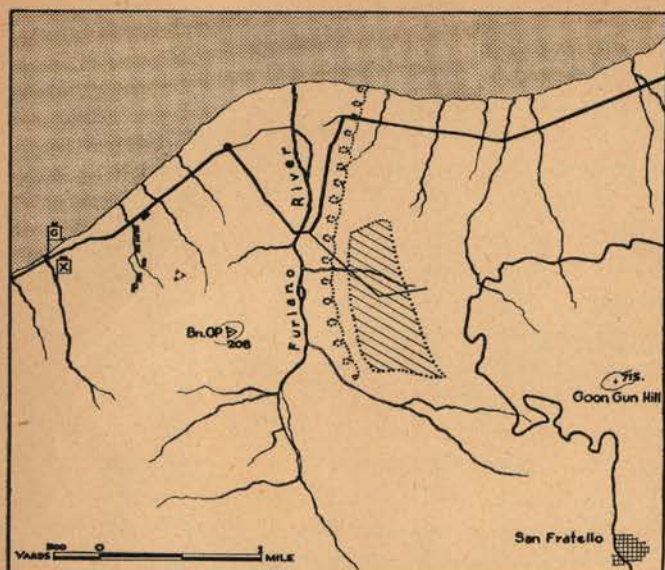


Gunner of a chemical weapons battalion on Bougainville adjusts elevation and deflection of a "goon gun" with adjustable bronze sight. Faint wisps of smoke from previous round can be seen curling from rifle barrel. The mortar has sunk deep into Bougainville's volcanic soil under impact of constant firing. Sandbags on baseplate give stability.

A chemical weapons battalion can lay three and one-half tons of phosphorus in 2 minutes. Smoke from "goon guns" have thrown enemy tanks into confusion, covered bayonet charges and withdrawals, and blinded enemy observation posts. These mortars are so accurate that their users claim they can "hit a dime" with them. In fact, one gun did drop an HE shell into a German tank for a "hole-in-one!"

One mortar screen in Sicily, lifted only occasionally to permit strafing by Allied dive bombers, was maintained along a thousand-yard front for 14 consecutive hours. On another occasion two chemical mortar pla-





### SMOKE FEST AT GOON GUN HILL

This section of Sicily's north coast shows (left to right) 2d Chemical and regimental CP's, 4.2 positions, battalion OP, Furiano stream bed, and Goon Gun Hill from which Nazis looked down on whole terrain. Black lines are roads. Dotted loops near river represent 3,500-yard screen that rolled up Goon Gun Hill morning of 6 August. Shorter screen over most of the same line protected two battalions pinned down that afternoon on German side of river. OP for this screen is shown by triangle near mortars. Shaded area represents smoke-mass; for 14 hours on 7 August, mortars pumped WP into Nazi positions in this area.

toons set up a "leap-frog" screen for 43 minutes to cover an infantry advance. When two infantry battalions became trapped in Sicily, smoke made by a chemical battalion enabled the infantrymen to shift position and avoid annihilation or capture. It was for operations such as these that chemical weapons personnel here received many decorations and citations, personally and as units.

Chart forms a graphic presentation of the results of rifle tests conducted with and without smoke hazards at one CWS installation.



PRINCIPLE OF SMOKE DECREASING HOSTILE FIRE POWER		
AT 300 YDS.	EXPERT RIFLEMAN GETS	90% HITS
NO. 2	SMOKE ON TARGET	14% HITS
NO. 3	SMOKE ON RIFLEMAN	2% HITS

### VALUE OF SMOKE IN WARFARE

While the use of smoke in battle is almost as old as history, its skilful employment in enormous quantities is a startling development of World War II. The implication of this form of military protection in terms of effective action, of lives saved and wounds avoided, is a constant spur to the Chemical Warfare Service of the Army Service Forces to develop ever better materials and procedures.

Tests have shown that the aimed fire of men blinded by smoke is only one-fourth as effective as the aimed fire of men in the clear firing into smoke. It was found that riflemen under ideal conditions scored approximately 55% hits. With their targets obscured by smoke, they obtained only 12 hits, and when the firing range was blanketed with smoke their hitting average dropped to 3%.

Thus, smoke which is the bane of peacetime atmosphere has become a life and property saver in war. The same inventive genius which worked to curb its nuisance to communities and industrial plants in peacetime has adapted it to protecting soldiers and their supplies in battle.

Through collective scientific effort, military smoke furnishes the modern armor for many troop operations. By the same token, man-made fog supplies a cloak of invisibility for men and matériel which minimizes enemy bombing or renders it ineffective. "What you can't see, you can't bomb" is the basis of this antidote to the long-range bomber.

The practicability of smoke blanketing is summed up in the fact that while airplanes can look *behind* a smokescreen, they cannot look *under* it. For this reason, smoke has become a new type of camouflage for important objects and areas far behind the front lines as well as providing a protective cover for troops in action.



# Something New in Tank Smoke

*by Captain Arthur L. Paddock, Jr.*

THE use of smoke by mechanized cavalry and tank troops to influence tactical maneuver is laid down in official War Department field manuals, but because of variations in matériel, tank troops need to understand a few fundamental facts.

For some time the standard smoke shell for tank guns contained white phosphorus, a chemical which has both an incendiary and a screening effect. Experiments have shown that the white phosphorus shell is more effective than HE against dug-in infantry. It is safe to say that high-trajectory weapons—mortars, howitzers, and the like—have a greater potential value than flat-trajectory tank guns when firing white phosphorus shells. This is true partly because of the physical properties of white phosphorus and partly because of the ballistics of the shells concerned.

The principal objection to WP shell for tank guns is that it "pillars." The shell is easy to control for range and deflection, but the screen which originates from the shell does not form low enough to the ground to effect adequate, prompt screening. The screen develops in billowing clouds some twenty or thirty feet above the target.

The new Shell, Smoke, HC, BE (base emission), M89, for 75mm tank guns, is an improvement over the WP shell. The smoke is a hexylchloroethane mixture and does not pillar. The shell has a blunt nose with no ogive and a muzzle velocity of about 800 feet a second, as compared with the 2000 feet a second muzzle velocity for Shot, APC, M61. Because there is no ogive, the shell bounces on firm terrain from 100 to 300 yards away from the point of strike. The soldier learns more about how difficult it is to control as he fires more M89 shells, for they are as skittish as a yearling colt.

Smoke shell is a weapon of the unit commander. Used indiscriminately (present stowage calls for about 10 rounds per medium tank) it is soon wasted. The shell should be fired by the section or platoon, preferably the latter. About three or four rounds per gun fired in about one and one-half to two minutes develops a satisfactory screen over a frontage of from 400 to 500 yards. The shell cannot be fired accurately at ranges much over 1,600 yards. Each round burns for about 3 minutes.

The technique of fire in various winds is dictated by common sense. In a head wind, fire into or just behind the target. In a flank wind, fire so that the screen will

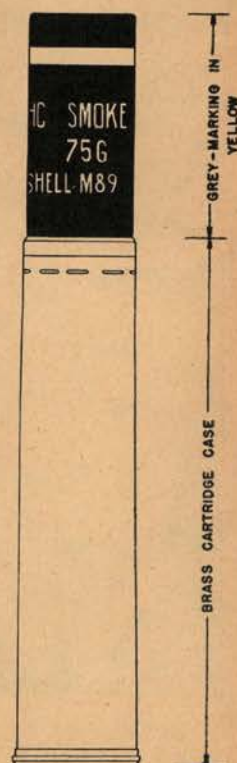
drift onto and just in front of the target. Tankers have found that a crosswind of from 3 to 5 miles an hour velocity gives best results. When the wind velocity is high (over 10 mph) the gunner fires faster than when it is low (3 to 5 mph).

The ballistics of the shell clearly direct that M89 smoke shell be fired by the section or platoon and *not by a single tank*. To build up a screen requires at least two minutes. Therefore, smoke should not be used against antitank guns which have already opened fire on attacking tanks.

The M89 smoke shell is not the only screening agent available to the tank soldier. In mechanized cavalry squadrons the assault gun troop can fire smoke missions. In the tank battalion, the 81mm mortar platoon, which carries a preponderance of WP shell, is available to the commander for smoke missions. Experiences in Africa, Sicily, Italy, and on other fronts have proved its worth. Commanders may request the firing of smoke missions by supporting artillery.

For the use of the individual tank commander there is the 2-inch smoke mortar. This is a British-developed weapon which is mounted in the medium tank turret. The mortar is used when the tank needs a quick, close-in smoke screen to conceal its movement in an emergency or to permit its crew to dismount from a disabled vehicle without being seen. The mortar is fired by the cannoneer (loader) with fire orders issued by the tank commander. He may fire at short (20 yards), medium (60 yards), or long (120 yards) range, depending on the adjustment of the gas pressure regulator. TC 20, War Department, 31 March 1944, covers the weapon in detail.

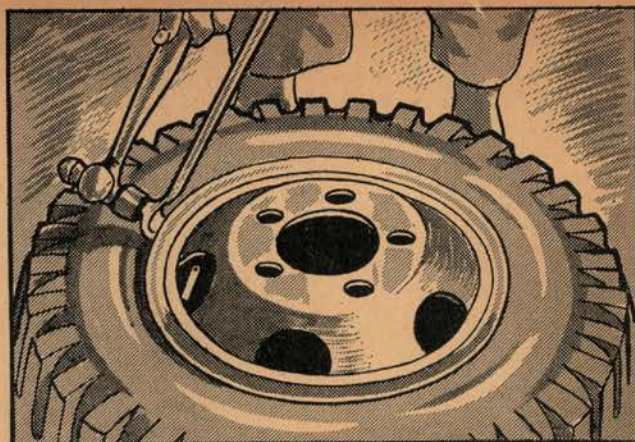
It is clear that tank troops have a great variety of smokes available. Smoke properly used with initiative and dispatch may not win the battle, but it can get you there in time to pour in the HE without stopping some carefully aimed armor-piercing projectiles from an 88.



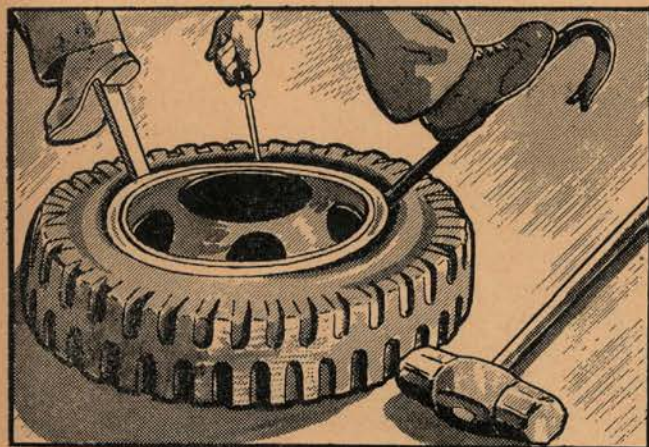


# DO'S and DON'TS on TIRE CHANGING

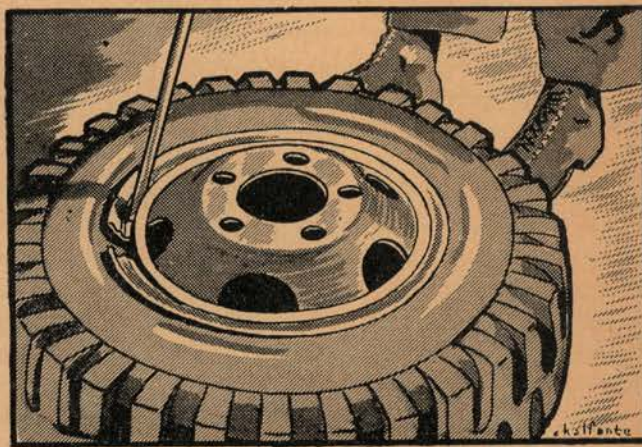
**R**EPORTS indicate that critically scarce tires and tubes are being damaged, sometimes beyond repair, by improper changing methods. The introduction of synthetic rubber, which tears more easily, has made the problem even more serious.



The military type tire iron can be used for almost every tire changing operation. Here it is being used to free a tire casing from the rim.



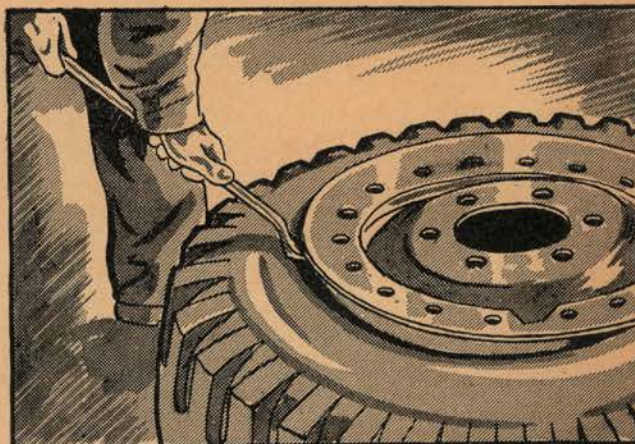
**DON'T USE** broken spring leaves, pry bars, screwdrivers or sledge hammers to remove or install tires. They can damage tires and tubes beyond repair.



The tire iron is a specially designed, universal tool. It is safer for both the user and the tire. Here it is being used to remove a split lock ring.



**DO USE** Iron, Tire, Military Type, Federal Stock No. 41-1-774 which is authorized (2 per tool set) by SNL G-27 and SNL G-347.



Removing a divided rim, like all other operations, is simple and safe with this tire iron. If you do not have this better tire iron, requisition now.



# Centralized Training

For the Cavalry Reconnaissance Troop

by 2d Lieutenant Ross S. Hadfield, Cavalry\*

THE cavalry reconnaissance troop of an infantry division has a very definite and difficult job to perform, both in training and in combat. Whereas many soldiers have a very specialized job, the cavalryman of a reconnaissance troop must be proficient in many duties. Besides being trained in cavalry tactics and mechanized warfare, he must be trained also in infantry tactics, engineer problems, radio, intelligence, and ranger tactics—with a knowledge of artillery firing included.

The training of the individual cavalryman within the reconnaissance troop involves many problems. Beside the diverse schedule, training is made more difficult by the setup of a single troop, with no aids from a squadron or regimental headquarters, in the training schedule. Practically all training aids, as well as instructors, are from the troop itself. This setup of instruction is further complicated by the number of meetings called by the division staff. Although essential in the operation of the division as a whole, these meetings necessitate the absence of troop and platoon officers from their organization.

Such factors present strong arguments for centralized training in the training schedule. If centralization is not carried out, it results, in many instances, in very uninteresting and inefficient instruction. This type of class does not necessarily mean that the platoon or troop officer is lacking in instructional ability, but usually is because he is given no time in which to prepare the many different subjects called for in the training schedule.

If, on the other hand, centralized training is maintained within the troop, each officer has fewer subjects to prepare and should have more time in which he can secure those training aids so necessary to present an interesting and efficient class. The results are a better trained troop in a given time.

It may be argued that all officers should be equally proficient in teaching all subjects, and that this training is for the officer as well as the enlisted man. That all officers have equal ability in all subjects, is never the case. So, the individual officer should be given those subjects in which he is best qualified to teach, and his own training in other subjects supplemented during officer's school, which in most units is held in the evenings.

It is the opinion of foremost educators, and it is brought out in all military schools, that to present a subject efficiently more time is required for the preparation than the actual presentation. This condition is not possible with the majority of training schedules found in most of the reconnaissance troops in an infantry division.

If centralized instruction is to be used in the training schedules of the troop, the executive officer must take into consideration the objective of the training schedule, the state of training, subjects to be taught, time to teach them, equipment and facilities available, and the ability of the different officers to present different subjects. He then bases his assignment of the training subjects to be presented on those instructors available for any given time.

A valuable aid for the instruction of the troop can be found in a "Status of Training" chart. It must be remembered, however, that any chart maintains its value only as long as it is kept up to date. The following chart is presented as an example, although it is not complete because several basic subjects and some specialized subjects not applicable to each particular troop, are not shown.

STATUS OF TRAINING																							
Individual Weapon																							
1903							M1							Pistol									
*1. Q	*2. FAM	*3. FF	*4. NF	*5. AT	*6. MT	*7. TRA	Q	FAM	FF	AT	MT	TRA	NF	Q	FAM	FF	AT	TRA					
Carbine							Submachine Gun							Crew served Weapons									
Light-Machine Gun																							
Q	FAM	FF	NF	AT	MT	TRA	Q	FAM	FF	AT	NF	MT	TRA	Q	FAM	FF	NF	MT	AT	TRA			
Cal. 50 MG							BAR							57mm. (37mm.)									
Q	FAM	FF	NF	AT	MT	TRA	Q	FAM	FF	AT	NF	MT	TRA	Q	FAM	FF	NF	MT	AT	TRA			
60mm.							81mm.																
Q	FAM	FF	NF	TRA	Q	FAM	FF	NF	TRA														
Special Courses																							
Infiltration							Grenades										Close combat						
Day	Night	Hand	Rifle	Sticky	Molotov	Improvised	Rocket																
Demoliitions																							
Combat in Cities			Fox holes and tanks			Camou- flage			Message Writing			Combat Orders			Hand Charges			Crater Charges			Timber Demolition		
																					</		



# Book Reviews

THE ART OF WAR. By Sun Tzu. Military Service. \$1.00.

FREDERICK THE GREAT, INSTRUCTIONS TO HIS GENERALS. Military Service. \$1.00.

REVERIES ON THE ART OF WAR. By Marshal Maurice de Saxe. Military Service. \$1.00.

Since September Military Service Publishing Company has added three books to their shelf of valuable *Military Classics*.

*The Art of War* by Sun Tzu, written about 500 B.C., is the oldest military treatise in the world. The tactics and strategy of the author place a high value on maneuver. His writings, based on principles, have retained their original importance for military men for 2,400 years.

Copies of Frederick the Great's *Instructions to His Generals* were given to those fifty officers in his army who were considered models. The recipients were bound by oath not to take these orders into the field. The violation of this oath by General Czetterliz resulted in the capture of his copy by the Austrians in 1761 and its subsequent publication in German, French, and later in English.

Frederick's tactics were based on mobility. Among the innovations attributed to him are: the division of armies so that they could march in a number of columns with less fatigue; the use of flank marches; the oblique order; the lightening of the cavalry; increased mobility of artillery and the development of horse artillery.

*Reveries on the Art of War*, published posthumously in 1757, was written by Maurice de Saxe, not for publication but to "amuse and instruct" himself.

Marshal de Saxe was far in advance of his time in tactical conceptions and technical vision. He took into account the influence of the human heart on battles, and recognized the need for many reforms in the handling of military personnel as it existed at that time. He was particularly interested in reorganizing the armies after the Roman fashion, modernized, with legions and smaller units. His scheme was the forerunner of our present division organization.

1 1 1

NORMAL LIVES FOR THE DISABLED. By Edna Yost in collaboration with Dr. Lillian Gilbreth. Macmillan Company. \$2.50.

For 20 years Dr. Gilbreth was an industrial engineer who practiced in partnership with her husband. Together they wrote *Motion Story for the Handicapped* during the last war.

This new book, *Normal Lives for the Disabled*, is written to the disabled, not of them. Its philosophy is based on the premise that "Whether he has two arms or no arms, the man himself is more important than any of his parts. . . . That man had a certain attitude toward life. He still has it, even though it may be hidden by depression or by

the scoffing crust of "What's the use? that so often accompanies shock. . . . Only that deep inner attitude, in the vast majority of cases, is capable of crippling a man permanently."

In order to illustrate their points the authors have drawn on actual cases of men who have readjusted, and nothing is so encouraging to men as to know that others have trod a path before them.

There is no sentimentality here, no crutch to lean on—but facts which, when faced frankly, will be of permanent value.

1 1 1

LEE'S LIEUTENANTS, VOLUME III. By Douglas Southall Freeman. Charles Scribner's Sons. \$5.00

With the publication of this volume, Dr. Freeman concludes his monumental *Study in Command of the Confederacy*. Volume I covered the corps and divisional commanders of the Army of Northern Virginia from Manassas to Malvern Hill; Volume II, from Cedar Mountain to Chancellorsville; and Volume III tells the tragic story from Gettysburg to Appomattox.

One of the most complete military studies in command ever written, *Lee's Lieutenants* not only recreates the men and the operations in which they participated, but analyzes the military lessons involved. Thirty years of research in this period have revised some established views and reappraised men in the light of unpublished papers.

Dr. Freeman's work, with its voluminous maps, appendices and bibliography takes its place among the most important biographical and military books yet published.

1 1 1

GREAT SOLDIERS OF WORLD WAR II. By Major H. A. DeWeerd. W. W. Norton. \$3.75.

Major DeWeerd's collection of interesting little biographical sketches is more notable for its omissions than its inclusions. The author's defense of his exceptions of Stalin, Tito, and Marshall merely substantiates the fact that selections of outstanding characters in an era cannot justly be made until the era is completed.

The reader is constrained to ask—if Churchill—why not Roosevelt? If Gamelin, with his refusal to accept criticism, was a "great" soldier, what of Lord Louis Mountbatten, whose able coordination of all services has been one of the innovations of this war? Where are Shaposhnikov, Rokossovsky, Alexander, Stilwell, Wingate, and many others? Can an author classify civilians as "soldiers" and not include the air and naval men who have played no small part in this war's military operations?

Although this book offers some interesting comparisons of the superficial differences between some of the better known figures in this war, it could hardly be considered an authoritative analysis of the fundamentals of military science.



**BRAVE MEN.** By Ernie Pyle. Henry Holt & Co. \$3.00.

That Ernie Pyle's books are as eagerly awaited by his reading public as his daily columns is amply evidenced by the tremendous pre-publication sales of *Brave Men*. The demand for copies to go overseas was so great that a number of the books were released more than a month before the publication date in order to meet the October 15th mailing deadline.

Ernie Pyle has lived in the mud, listened to the artillery barrages, seen the dead and dying, gone unwashed, unshaven and hungry in the war that he hates with the men he loves and understands. The highest praise that can be given his latest book is that it continues to tell the story of these men from Sicily to Normandy with the same fidelity that *Here Is Your War* told of them in the earlier campaigns.

To miss reading Ernie Pyle's books is to miss a vital part of the experience of living in this era.

✓ ✓ ✓

**PARTNER IN THREE WORLDS.** By Dorothy Duncan. Harper & Brothers. \$2.75.

As a biography, the story of Jan Rieger's reactions to life in "three worlds"—Austro-Hungarian domination, Czech independence, and American democracy—presents important lessons in the psychology of middle-Europeans. Few Americans have even a superficial knowledge of the vast difference in thinking that lies between ourselves and the inhabitants of the little Czech democracy fathered by Wilson. That this gap be bridged is of supreme importance if we are to be of real assistance to these people in the future.

*Partners in Three Worlds* is as fascinating as a novel. Miss Duncan has used the first person to great advantage in telling the vivid story of a life that developed to a high pitch in an era that lent itself to full living.

✓ ✓ ✓

**NODS AND BECKS.** By Franklin P. Adams. McGraw-Hill. \$2.00.

With his usual wit, Mr. (Information Please) Adams rambles on about many subjects familiar and unfamiliar. Compiled of excerpts from the *New Yorker*, *Diary of Our Own Samuel Pepys* and *The Coning Tower*, *Nods and Becks* provides amusing light reading from which, incidentally, the reader will probably absorb some of the author's store of useful and useless information.

✓ ✓ ✓

**THE AMERICAN RIFLE FOR HUNTING AND TARGET SHOOTING.** By C. E. Hagie. Macmillan Co. \$1.95.

The American rifle has been an integral part of our history. It has served in founding, protecting and expanding the nation. Dr. Hagie has written a basic standard book to instruct those unfamiliar with the many uses of the rifle. Separate chapters describe the various types of rifles and ammunition and the purposes for which they were designed. One chapter deals with the care of game in the field.

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1719 K Street N.W. WASHINGTON 6, D. C.

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