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OPERATIONS OF THE FIRING BATTERY, BATTERY "D", 2ND BN.,
36TH F.A., 13TH F.A. BRIGADE, (II CORPS), IN THE
FONDOUK CAMPAIGN, 9 MARCH - 14 APRIL, 1943.
(TUNISIAN CAMPAIGN)
(Personal Experience of a Battery Commander)

Type of operation described: HEAVY ARTILLERY FIRING BATTERY
IN GENERAL SUPPORT.

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OPERATIONS OF THE FIRING BATTERY, BATTERY "D", 2ND BN,
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(Personal Experience of a Battery Commander)

INTRODUCTION

This monograph pertains to a heavy artillery firing battery, Battery "D", 2nd Bn, 36th F.A., 13th F.A. Brigade, (II Corps), in the Fondouk Campaign of Tunisia, during the period 9 March - 14 April, 1943.

Before depicting the operations of this "Long Tom" battery (155 mm gun), it is appropriate to present incidents leading to the decision to strike at North Africa, to view the general picture of the invasion and subsequent race to Tunisia, and to set the Tunisian stage where this battery's action occurs.

DECISION TO STRIKE AT NORTH AFRICA

When President Roosevelt and the American Chiefs of Staff met with Prime Minister Churchill and the British Chiefs of Staff in Washington, D. C., January, 1942, to discuss possibilities of invading North Africa, they decided that the Allies were not prepared to undertake the operation at that time. Further discussions were held the following June, and "the final decision was taken in July to launch an expedition into northwest Africa in conjunction with the preparations for the advance westward of the British Eighth Army then reorganizing on the El Alamein Line".(1)

The invasion of North Africa, to be known as "Operation Torch", would facilitate allied global operations, re-

(1) A-1, p. 18.

move the German threat in western Morocco as well as at South American Dakar, and, it was hoped to rally the French army. (2) Then, too, the Russians were at that time clamoring for a second front. (3)

There was no doubt that "the psychological effect of the conquest of North Africa would be tremendous". (4)

INVASION

"Operation Torch", with General Eisenhower in command, was put into effect on D-day, 8 November 1943, when three task forces, (Western, Center, and Eastern), struck at Casablanca, Oran and Algiers respectively. (See Map A) (5)

The Western Task Force of American troops, under command of Maj. Gen. (later Lt. Gen.) George S. Patton, Jr., sailed from the United States. (6)

The Center Task Force of American troops, under command of Maj. Gen. (later Lt. Gen.) Lloyd R. Fredendall sailed from Great Britain. (7)

The Eastern Task Force of American and British troops sailed from Great Britain. The landings of this force were under direction of Maj. Gen. Charles W. Ryder; Lt. Gen. K.A.N. Anderson, of the British Army, took over command after troops were established ashore. (8)

RACE TO TUNISIA

After the landings were effected and the ensuing touchy diplomatic negotiations with the French somewhat soothed, the Allies immediately made a sweep into Tunisia (2, 4) A-1, p. 18; (3) Personal knowledge; (5, 6, 7, 8) A-1, p. 20

with units of the Eastern Task Force, which became the British First Army under Gen. Anderson. (9)

British and American troops reembarked at Algiers and landed at Bougie on 11 November. Bone was occupied the next day by British parachutists from Algiers and a unit brought in by water from Bougie; these units occupied Tabarka on 15 November and Djebel Abiod two days later. (See Map B) (10)

More British parachutists flew in from Algiers and took over Souk el Arba, moving to Beja by 17 November.

[An American paratroop unit from Algiers to Youks les Bains, then Tebessa, occupied the Gasfa airfield on 17 November. (11)

French troops, reinforced with American units, were given the assignment to protect the southern flank of the Americans and British in the north, as well as the protection of advanced airfields in the Tebessa-Gasfa area. (12)

The race for Tunisia was on. While our forces were moving in, the Axis feverishly rushed reinforcements into Northern Tunisia by sea and air to make a stand with the German Fifth Army under Col. Gen. Von Arnim. (13)

Meanwhile Gen. Sir Bernard Montgomery and his British Eighth Army, which had hurled Gen. Rommel from El Alamein, were pursuing ^{the} his Afrika Korps across Egypt. (14)

TUNISIAN STAGE

Following this concentration of troops, by both the Allies and the Axis, isolated battles took place from December 1942 to February 1943 and partially stabilized lines

(9, 12, 14) A-1, p. 22; (10, 11) A-2, p. 17; (13) A-1, p. 23

were forming in Northern Tunisia. Also, by February, Montgomery had the Afrika Korps contained in Southern Tunisia, where Rommel set up his Mareth Line. (See Map B) (15)

"Upon arrival of the British Eighth Army on the Mareth Line, it came under direction of Gen. Eisenhower", who was in command of the North African Theater of Operations. Gen. Alexander was appointed Eisenhower's deputy and given direct command of the Eighteenth Army Group, which consisted of the British First Army (north), British Eighth Army (south), the U.S. II Corps (center-south), and the French XIX Corps (center-north), on the Tunisian front. Gen. Fredendall was in command of II Corps. (16)

KASSARINE THRUST

Continued
With the juncture of the Afrika Korps with Von Arnim's Fifth Army, the Axis quickly consolidated and struck at the lightly held portions of the long allied line. (17) Thus followed Rommel's well known smash from Faid through the Kassarine Pass. When this thrust was finally stopped, Rommel withdrew and reached the general line Hadjeb el Aion-Sidi Bou Zid - Gasfa by 26 February. (See Map B) (18)

"The turn of the tide at Kassarine proved to be the turn of the tide in all Tunisia as well", because from then on, the Allies (as a whole) were on the offensive throughout the remaining Tunisian Campaign. (19) There were, nevertheless, short periods of American defensive action by individual units, as shall be taken up later in this monograph.

(15) A-1, p. 23; (16, 17) A-1, p. 24; (18) A-2, p. 32; (19) A-2, p. 33.

BATTERY "D" MOVES TO COMBAT ZONE

On 5 March 1943, Gen. Fredendall relinquished command of the American II Corps to Gen. Patton. (20)

It was also on this date that the Regimental Headquarters, and Headquarters Battery, and the Second Battalion, (consisting of Battalion Headquarters and Headquarters Battery, Batteries "D", "E", "F", and Service Battery), 36th Field Artillery, began a 700-mile motor march from Chanzy, Algeria, to the combat zone. (See Map A) (21)

These units had been training at Chanzy camp since 3 January 1943, the date of arrival at Oran from England, where they had been stationed since 17 August 1942. (22)

Chanzy, a small French village, is located twenty miles south of Sidi Bel Abbas, (home of the renowned French Foreign Legion), and seventy miles south of Oran. (23)

The Regiment's First Battalion was already committed in Tunisia, and had been since December, 1942 (24)

The Regimental Headquarters and Headquarters Battery and Second Battalion motor column arrived in vicinity of ^{the} combat area on 9 March and bivouaced near Sbiba, Tunisia. (See Map B) The trip was uneventful, the latter part having been made at night, without lights, since enemy aircraft was active throughout that area. The march was successful due to extensive motor march training held by these units when in the United States. (25)

The four-day-trek to the combat area enabled the units

(20) A-3, p. 18; (21, 22, 25) A-4; (23) Personal knowledge; (24) A-5

to become familiarized with new radio sets, (SCR-608, SCR-610), which they had received a few days prior to leaving Chanzy. It was soon obvious that net control and radio discipline was imperative. (26)

COMBAT GROUPING

Upon arrival at the combat zone, the Second Battalion became part of a groupment of artillery along with a battalion from the 17th Field Artillery, and a detachment from the 1st Field Artillery Observation Battalion. (27)

The Group, which was under the Regimental Commander of the 36th Field Artillery, Col. (later Brig. Gen.) Walter W. Hess, Jr., was put in general support of the 34th Division. (28)

The remainder of the 13th Field Artillery Brigade, which included the First Battalion, 36th Field Artillery, was committed at El Guettar under the Brigade Commander, Brig. Gen. (later Maj. Gen.) John A. Crane. (See Map B)(29)

DEFENSIVE POSITION

The Second Battalion occupied two positions during the following two weeks, the second being five miles south of Sbiba. (See Map B) All firing batteries, including Battery "D", were registered at the latter position. (30)

The unit was at this position when the Battery "D" Commander was ordered by the Battalion Commander, Lt. Col. George E. Halliday, to register the firing batteries of the battalion. Upon arriving at the Observation Post, which he expected to be under enemy surveillance, he found the 34th (26, 28, 30) Personal knowledge; (27, 29) A-6, p. 886.

Division Commander, Gen. Ryder, and members of his staff awaiting the registrations to come. The Battery Commander, instead of shooting at German positions, conducted a Fort Sill service practice. (31)

This was the first time this Battery Commander definitely knew that the enemy was miles away; that the 34th Division had established a defensive position, and was making sure all its direct and general support artillery was registered and prepared to cover likely enemy avenues of approach through the mountain passes. (32)

The Division was ready, in this position, in case of another German stab as at Kassarine Pass. (33)

Meanwhile, the British Eighth Army had launched operations in Southern Tunisia in coordination with the bulk of American II Corps forces (1st Armored Division, 1st and 9th Infantry Divisions) and forced Rommel from his Mareth Line. (See Map B) (34)

FIRST FONDOUK ATTACK

While the Afrika Korps was withdrawing from Mareth, to set up new defensive positions at Wadi Akarit, the 34th Division (on 25 March) received orders for its first major attack in World War II. The mission was to seize Fondouk Pass, push on to Kairouan and Sousse, and thereby cut off Rommel's line of retreat through Northern Tunisia. (See Map B) (35)

The Division moved up on the night of 26-27 March to vicinity of Hadjeb el Aoun. (36)

(31, 32, 33) Personal knowledge; (34) A-3, p. 18;
(35) A-7, p. 11; (36) A-7, p. 12.

On the same night, Battery "D" moved with its battalion from vicinity Sbiba to Sbeitla, a distance of 20 miles. The next night it made a 40-mile move; this time through Hadjeb el Aoun and into position southwest of Fondouk. (See Map B) (37)

These moves were made under cover of darkness because German Stuka dive bombers were constantly searching the area during daylight hours. (38)

The Division attacked on the morning of 27 March making a frontal assault of the objective with two regiments abreast (135th Infantry on the left; 168th Infantry on the right) and one regiment in reserve (133rd Infantry)--covering a front of approximately five miles. The boundary between regiments was Highway Number 3 to Fondouk. *(map shows different)* (See Map C) (39)

This attack failed. (40)

On 28 March, the Division attacked again, and failed. *why?*
(41) Battery "D" was in position with its Battalion for this attack and fired 72 rounds in support. (42)

On 29 March, the Division attacked again and failed. The following day it made a last failing attack, holding established front lines until 31 March, and pulling back on the night of 1-2 April to establish a defensive position on the high ground approximately two miles to the rear. (43)

The Second Battalion fired normal heavy artillery missions during the above attacks, expending 569 rounds throughout the four-day period, including 205 rounds fired by Battery "D". (44)

(39) A-7, p. 12; (37, 42) A-4; (38) Personal knowledge; (40, 41) A-7, p. 15; (43) A-7, p. 16; (44) A-8.

Initially opposing these attacks was a reinforced rifle company, but more troops were immediately rushed in once the attacks began. (45)

TERRAIN AND ENEMY OBSERVATION

The five-mile wide valley, which funneled into the 1000-yard Fondouk Pass, up which these regiments attacked, was extremely flat and barren. The rocky, sandy earth offered no vegetable growth, except for isolated cactus patches; cover and concealment were unattainable. (46)

The Germans occupied the high ridges that closed in on the Pass from the North, and South. They had complete observation for miles with surveillance of all movement below. (See Map C) (47)

The German's perfect observation and vantage point is emphasized by the following incidents:

When the Battery "D" Commander was making a daylight check of his proposed gun position area, the enemy fired a "88"-round over his head, landing approximately 200 yards away. A few seconds later, a second round came in; it was still over, but had shifted laterally about 200 yards. A third round was expected, this one to fall short, establishing the bracket. But no third round came in. That round and many more came in that night as the guns were about to be moved into position. The enemy had heard the tractor prime-movers, and thinking the battery already in the position area, fired. The rounds fell in the exact place occupied by the Battery Commander that afternoon. No damage was (45) A-7; p. 16; (46, 47) Personal knowledge.

done as the guns were still 200 yards from the position area. The enemy had ranged in on the Battery Commander in the afternoon, and expected to smash a battery that night. (48)

The following night, this Battery Commander was at the Division Command Post when more "88s" came barging in. The German's apparently knew all the 34th Division installations, and could reach them with fire. (49)

The position area resembled that at Anzio, as far as enemy observation was concerned, and the Germans put the terrain to excellent use for their defense. (50)

BATTERY "D" OUT ON A LIMB

When the 34th Division pulled back on the night of 1-2 April, the general support artillery in the area found itself left out on a limb. There were no protecting forces to the front, although the 813th Tank Destroyer Battalion was located about 800 yards to the rear of Battery "D". (51)

The Battery Commander, being concerned with his present position, conferred with the Commanding Officer of the 813th Tank Destroyer Battalion, Lt. Col. William Walker, as to what protection would be offered by this unit. Being assured that the Tank Destroyer Battalion could move out in front if anything happened, the Battery Commander still thought it wise to check and strengthen his perimeter defense. Rocket launchers were repositioned, anti-aircraft machine guns prepared from ground defense, and converted riflemen were placed on the outer edge of the area. An observation and listening post was sent 1000 yards forward, and communications set up (48, 49, 50, 51) Personal experience.

between the Battery and Tank Destroyer unit. (52)

Luckily, this defense was not tested. (53)

STUKAS ATTACK BATTERY

During the third day of the Division's attack of the Gap, Battery "D" was dive bombed by six stuka planes. Normally one could set his watch by the German's methodical flights, for they consistently appeared each day at 0700, 1200, and 1700 hours. This day the story was different. (54)

Battery "F", which was located approximately 500 yards behind Battery "D", was firing when the stukas hit the horizon. As the planes were approaching, they had completed their mission and the gun tubes were lowered. (55)

At this time, Lt. William Dougherty, executive officer, of Battery "D", received a mission direct from the Battalion Fire Direction Center. Before the Battery Commander could intervene, up went the "Long Tom" tubes. No sooner had this happened, when the FDC spotted the planes and cancelled the mission. The tubes were ordered to be lowered, but by this time the stukas were diving on the position. They peeled off swiftly and attacked directly out of the sun, dropping approximately fifteen bombs, mostly 100-pounders, with a couple of 500-pounders interspersed. They had planned to pulverize this battery. (56)

All the unit's .50 caliber machine guns opened up on these planes, and this must have perturbed the Nazi pilots for they did not dive as low as usual, and the center of the bomb pattern was about 50 yards over. (57)

(52-57) Personal knowledge.

A few of the short bombs were dispersed throughout the area, but no damage was done to either the guns or personnel of Battery "D". All men, with exception of the machine gunners, who were dug in, were deep in their fox holes at the time of attack. (58)

One man, Sgt. Cannon, the Battalion AT NCO from Headquarters Battery, had not been able to get to protection. He was riding up Highway No. 3 when the planes came in, and did not have time to get out of the vehicle. A bomb dropped on the road directly in front of his command car and a fragment went through the sergeant's head. The driver was blasted out of the vehicle by concussion and thrown about 20 yards. He was unharmed, but ruffled. The command car burned as it was impossible to smother the flames. (59)

This same bomb got a very lucky hit. It blasted out all wire communication between forward units and the Division Command Post. The entire Division was without communications for about 20 minutes, while these lines were being repaired, since all the communications lines were laid together by the side of the road. The situation was so vital that the Division Artillery Commander, Brig. Gen. Stanford, was at the location within five minutes of the communication black out.

One stuka dived directly at the Battery Command Post, having spotted a command car, and was blazing away with its machine guns and 20mm cannon. It didn't take the Battery Commander and his Instrument Sergeant long to hit their slit trench once the plane went into its dive. Near misses hurt no one. The vehicle was luckily untouched, but in need of (58, 59) Personal knowledge.

more deceptive camouflage which it was certain to receive from that time on. (60)

German dive bombers were constantly on the look-out for heavy artillery and tanks; these units apparently had number one dive bombing priority. (61)

The "Long Tom" had become a haunting dread to the enemy, especially because of its long range accuracy and projectile bursting area. The Battalion would fire harrasing missions through the nights in rear areas, and many sleepless Nazis, when later captured, referred to the 155-mm M-1 gun as "Whispering Death". (62)

This may have been one of the reasons for the unit's high priority on the German's bombing list. (63)

ROVING GERMAN "88s"

When nightfall came, same day as the stuka bombing, Battery "D" was ordered to a new position area; it was necessary to clear out so as not to have to withstand another stuka attack, since the position was marked. Before leaving the area, all guns shifted trails, swinging approximately forty-five degrees to the right, and sighted directly on the hills ahead from which intermittent "88" rounds had been disturbing the entire division. The battery blazed away with direct fire at what was determined to be the "88s" position, which happened to be the same place from which fire was ranged in on the Battery "D" Commander two days back. After firing three volleys, the battery swiftly march ordered and pulled out of position. (64)

(60-64) Personal knowledge.

The following day, "88" rounds again came in. (65)

It was found out later that these rounds came from self-propelled German "88" guns; that they would roll into a position, fire a few rounds and then immediately take up a different location. In this way, a few guns harrassed an entire division. (66).

LULL PERIOD

The period 1-7 April was a lull period for the 34th Division as far as action was concerned. During this time the Second Battalion, 36th Field Artillery, fired its normal long range missions of counter-battery, interdiction, and harrassing fire, expending a total of 498 rounds (106 for Battery "D"). (67).

SECOND FONDOUK ATTACK

On the night of 7-8 April, the 34th Division again moved up to attack the Fondouk Pass.

For this attack, the Division was attached to the British IX Corps. Immediately upon ^{the} fall of the Pass, ^J would revert to control of the U.S. II Corps. (68).

The general plan was for the British Eighth Army to break the Wadi Akarit position in Southern Tunisia and the American II Corps troops (south) to assist by threatening Rommel's rear. (See Map B) (69).

A part of the British IX Corps, assisted by the 34th Division would launch an attack through Fondouk with the mission of capturing Kairouan and threatening the enemy line (65-66) Personal knowledge; (67) A-8; (68) A-9; p. 9; (69) A-2; p. 37.

of retreat. (70)

Farther north, the British V Corps was to secure positions from which a future drive could be made on Tunis. (See Map B) (71)

The Germans were in a precarious position. If Von Arnim's men holding the passes in the north gave way too soon, Rommel would find his Afrika Korps trapped; if they stayed too long, they themselves would be cut off by the Eighth Army. (72)

The Germans were delaying for they knew it was only a matter of time now. Their "objective was not on the ground but on the calendar". "If they could hold the Tunisian bastion through the summer, not only could a Russian campaign be undertaken to relieve the disaster of Stalingrad, but also, any attack on the fortress of Western Europe would be delayed a full year." (73)

indul Gen. Montgomery attacked at Wadi Akarit on 6 April, and the next day the long awaited junction of the American II Corps (south) and the British Eighth Army took place. (74)

In the 34th Division sector the situation was the same as for the first Fondouk attack. (See Map C) (75)

This attack failed, and from all information gathered by the author, its failure was due to a misunderstanding as to who was to take the objective, Djebel Rhorab-- the British or the Americans. Many sources are vague on this point, and some disagree, but it is assured that the Rhorab defenses caused the failure. (76)

(70-71) A-2, p. 38; (72) A-10, pp. 285, 286; (73) A-11, p. 8; (74) A-2, p. 38; (75) A-7, pp. 18-20; (76) Personal deduction.

last
For this final two-day attack, the Second Battalion expended 762 rounds, which includes 259 rounds fired by Battery "D". (77)

PUSH THROUGH FONDOUK

On 9 April, in view of the Afrika Korps' retreat up the coast, the 26 Armoured Brigade (6th Armoured Division, British) was ordered to burst its way through the Fondouk Pass. This attack was successful, but due to minefields, cost the Brigade 76 Sherman tanks, (60 of which were recovered and again in action four days later). (78)

The 34th Division mopped up the hills north and south of the Pass. (79)

On the following day, the Brigade advanced on Kairouan, and on 11 April made contact with the British Eighth Army, which had meanwhile made rapid progress over the plain, having entered Sfax the day before. (80)

Although the armoured units failed to reach Kairouan in time to cut off the Germans, the Fondouk Battle was not entirely wasted. It pulled down upon itself the weight of Rommel's remaining armor and relieved the threat to the flank of Gen. Montgomery's troops. (81)

Once we attacked at Fondouk, the Germans had to withdraw from Macknassy and Faid Pass to avoid being cut off. (82)

Fondouk aided in forcing the Axis into Enfidaville and the mountains beyond. They were driven out of southern Tunisia. (See Map B) (83)

(77) A-8; (78,80) A-12, p. 11; (79) A-13, p. 36;
(81) A-14, p. 108; (82) A-14, p. 202; (83) A-14, p. 203.

BATTALION AND BATTERY MISSIONS AT FONDOUNK

For the period 28 March-10 April, in support of the Fondounk attacks, and during the intervening lull period, the Second Battalion fired a total of 1829 rounds, including 570 fired by Battery "D". (84)

The following data is listed to show the number and type of missions fired by the Second Battalion during the above period. These figures include data pertaining to Batteries "D", "E", and "F": (85)

1. Number of missions fired: 115.
2. Nature of targets:
 - a. Registrations - 6
 - b. Barrages - 10
 - c. Enemy Batteries - 35
 - d. Harrassing - 54
 - e. Enemy Vehicles - 9
 - f. Tanks - 1
3. Average number of rounds per mission: 16.
4. Minimum and maximum number of rounds expended on a mission:
 - a. Barrages.
 - (1) Minimum - 12
 - (2) Maximum - 257
 - b. Enemy Batteries.
 - (1) Minimum - 12
 - (2) Maximum - 60
 - c. Harrassing.
 - (1) Minimum - 1

(84, 85) A-8.

(Missions fired by Second Battalion--continued): (86)

- (2) Maximum - 6
- d. Enemy Vehicles.
 - (1) Minimum - 9
 - (2) Maximum - 20
- e. Enemy Tanks.
 - (1) Minimum - 78
 - (2) Maximum - 78

5. Results:

- a. Barrages.
 - (1) Ground observation: Mission accomplished.
- b. Enemy Batteries.
 - (1) Unobserved, 4: Results unknown.
 - (2) Ground observation and sound, 31: Mission accomplished.
- c. Harrassing.
 - (1) Unobserved: Results unknown.
- d. Enemy Vehicles.
 - (1) Ground observation: Mission accomplished;
No direct hits noted; vehicles scattered.
- e. Enemy Tanks.
 - (1) Ground observation: Mission accomplished;
Infantry turned back; 3 tanks knocked out.

6. Average range at which missions were fired:

15,000 yards.

7. Minimum range fired: 6,400 yards; maximum range
fired: 25,715 yards.

(86) A-8

BATTERY "D" MOVES FROM FONDOUK

After the Fondouk break-through, Battery "D" remained in position until 14 April, when it moved with II Corps to Mateur Area for the final Battle of Tunisia, which drove the Axis entirely out of North Africa. (87)

BATTERY TECHNIQUE AT FONDOUK

It seems in order, here, to state how Battery "D" operated in Tunisia; the methods used in reconnaissance, selection, occupation of position, and firing technique. (88)

The Battalion Commander received a "goose-egged" map area (in which to put his batteries) from the Group Commander, who in turn received areas from the Division Artillery Commander. (89)

The Battalion Commander normally made his reconnaissance with his three firing Battery Commanders. They traveled in one jeep as German planes were continuously active, and strafing was common throughout the area. These four officers reconnoitered the area, and the Battalion Commander, talking it over with the Battery Commanders, assigned each his respective position area. (90)

The Battery Commanders were then taken back to their units. It was now up to each of them to get together his own individual party, proceed to the assigned area, and prepare it for the movement of the battery into position that night. (91)

The above type of reconnaissance took place when the Battalion first moved into a combat sector. After being committed, the Battalion Commander reconnoitered with each Battery Commander individually, and only one Battery moved (87-91) Personal knowledge.

at a time; the other two remaining in position. In either case, the operation of the battery in preparing and moving into position was the same. (92)

After arriving at his old area, the Battery Commander got his party together; it consisted of the Communications Sergeant, the Survey Sergeant, and the Executive or his assistant. This party, too, went forward in one jeep. (93)

At the new position area, the Battery Commander would personally select the exact location for each gun. A few considerations taken into effect were: defiladed area for cover, routes of approach into area, ammunition dumps for the gun sections and places where the camouflage nets would best blend for concealment. (94)

Large flat top camouflage nets (35 by 70 feet) were always used as there was no natural concealment in this sector of Tunisia. The terrain was wide open; there were no trees. Cactus patches were spaced here and there, and whenever possible, the batteries would take positions in them. Camouflage nets still had to be erected, nevertheless. These nets, heavily garnished, would sometimes blend to the surrounding objects, but their main purpose was deceptive camouflage; the enemy knew something was there but not what it was. This method was used mainly to hide from dive bombers. (95)

After selecting a position for each gun, the Battery Commander would put in a center line with his hand compass. This center line was staked in on the azimuth which was the center of the sector of fire. This was done for each of the four guns. Each gun was pulled in on its center line, with (92-95) Personal knowledge.

the sight over the rear stake. (96)

Next, a switchboard and command post location would be selected. (97)

Meanwhile, the Survey Sergeant was studying the area. It was his duty to run a position area survey, locating Number One and Number Three gun, tying in same with Battalion control, which was usually brought close to the position area. (98)

The Communications Sergeant, now knowing where the Battery installations were to go, was ready to put in lines, after getting his crew together. (99)

After all preparations were made, the Party proceeded back to its old area. Communication lines were then laid, and survey started. Usually each gun Chief of Section was taken to the new area so he could check the route into his exact gun position, since the Battery would move in at night. (100)

The main danger in moving into position were mines, and the Battery had no mine detector. Several times a gun rolling into position just missed German Teller mines, and British Hawkins mines which had been left behind. (101)

The Battery would move up at night, and by daylight would be laid and ready to fire, tied in with Battalion by survey and communications. (102)

The Battery position was quite spread out. The distance between Number One and Number Four guns was sometimes as much as 1000 yards, and the guns were staggered in depth (96-102) Personal knowledge.

as much as 400 yards. This was necessary because complete concealment from the active enemy planes could not be gotten. The staggering of pieces eliminated bomb lines. (103)

Because the guns were so widely separated, a telephone line was laid from the Battery Executive to each gun section. He could not possibly control them by voice. Each Chief of Section had a head and chest set and would relay fire commands to his individual gun section. (104)

The Battery Executive had a direct line to the Battalion Fire Direction Center, and an alternate one through the Battery switchboard. All fire commands went directly from Battalion to the Executive. (105)

A Firing Chart was kept at the Battery Command Post, and it was kept up to date on concentrations by the Battalion Fire Direction Center. No firing was done from the Battery chart; it was kept as a precaution in case the Battalion Fire Direction Center should be knocked out. In this case, the Battery could then take over control of the Battalion's fire. It was found that the 1:50,000 firing chart, for the Horizontal Control Operator, and 1:25,000 chart, for the Vertical Control Operator, gave excellent results. (106)

The prime-mover tractors were kept near the gun position, but all unnecessary motor vehicles were kept far to the rear, in another locality. (107)

Machine Guns were dug in, and they covered the position area for active defense against air attacks. (108)

The Battery established an Observation Post which was manned 24 hours a day by the Reconnaissance Officer, inter-
(103-108) Personal knowledge.

mittently with the Assistant Executive. Very little firing was conducted from this OP; observed firing was conducted primarily by the Forward Observers of the Division Artillery. (109)

Most times, the Battery had no idea as to who was conducting the fire of its guns at the forward end of the trajectory. (110)

ANALYSIS AND CRITICISM

Because Field Artillery is a supporting unit, considerable material has been presented in this monograph covering the operations of the supported units.

Although it is not the purpose of the author to analyze the performance of other units and criticize their action, it seems in order to state that the second major attack of the Fondouk Pass would have succeeded much earlier if there had been a definite understanding between the units concerned as to the boundry between them, and which unit was charged with taking the vital objective, Djebel Rhorab, which presented the major threat to the entire Pass.

The Germans, in protecting the Fondouk Pass, used the superb critical terrain to excellent advantage, and no unit could possibly have penetrated same without high costs.

The artillery should never have been left out as a salient when the 34th Division pulled back, to set up new defensive lines two miles to the rear. The enemy could have easily over-run and taken these units, for they were not adequately protected by the supported arms. *why did it stay out.*

(109, 110) Personal knowledge.

It was found that the spreading and staggering of artillery guns offered good passive defense against dive bombers. Had this not been the case, Battery "D" might easily have lost a gun during the stuka attack.

As for active defense against planes, machine guns firing at the enemy aircraft will materially effect their dive bombing accuracy.

Only two men were not in a fox hole at the time of the bombing attack; one was killed. Too much emphasis can not be placed on the fact that fox holes are life-savers.

The main wire communication net of the Division was blasted out by one bomb because all the lines were laid along the same route, and no alternate lines were put in. If the Germans had decided to attack during this twenty-minute communications black-out, considerable confusion would have occurred among the Division's troops.

A couple of German self-propelled "88" guns, firing throughout the Division area, were successful in harrassing all the units. Although no material physical damage was done by these guns, they did have a decided effect on morale.

Prior to the Tunisian Campaign, it was believed that the 1:25,000 firing chart was the smallest that could be used to deliver accurate fires. The Second Battalion discovered that excellent fires could be delivered by using a 1:50,000 firing chart, and the missions accomplished with same effectiveness as with the larger scale maps.

Because of the wide open Tunisian area and the active

enemy aircraft, all artillery moves were made under cover of darkness. Too much stress cannot be placed on the necessity of training in night occupation of position.

Most of the observed fires of the heavy artillery were conducted by the Forward Observers, of the organic divisional light artillery, with the front line rifle companies.

LESSONS

1. No attack can be expected to succeed if there is doubt as to the boundaries separating units and uncertainty as to responsibility of taking objectives.
2. A well organized defense, with efficient use of critical terrain, can hold off a much larger force successfully.
3. Information of the enemy should be handed down immediately to lower units.
4. Artillery should never be left without protecting forces to its front.
5. Artillery must be trained to defend its own position against ground attacks.
6. Unless it is a most critical period for the supported arm, artillery should not fire when enemy bombers are in the immediate area.
7. Artillery should be spread out and staggered for passive protection against enemy aircraft.
8. Machine gun fire at enemy planes effects the accuracy of a bombing attack.
9. Fox holes save lives.

10. All communication wire lines should not be together; alternate lines should be laid.

11. Long range harrassing fire is most effective on the enemy's morale.

12. Roving self-propelled artillery if efficiently used can harrass large units.

13. Considerable training should be conducted by artillery firing batteries in night occupation of position.

2 *not stated* 14. It is normal to have small reconnaissance parties.

15. Each battery should have a mine detector.

16. Accurate fires can be delivered by using a firing chart, scale: 1:50,000.

2 *not stated as lower* 17. Most of the observed firing of heavy artillery is conducted by the Forward Observers, of the organic divisional light artillery, with the front line rifle companies.