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TITLE: COORDINATION OF ARTILLERY WITH THE TANK-INFANTRY TEAM

- SCOPE: 1. IMPROVED FLEXIBILITY OF ARMORED ARTILLERY
2. OBSERVATION
3. LIAISON
4. COMMUNICATIONS

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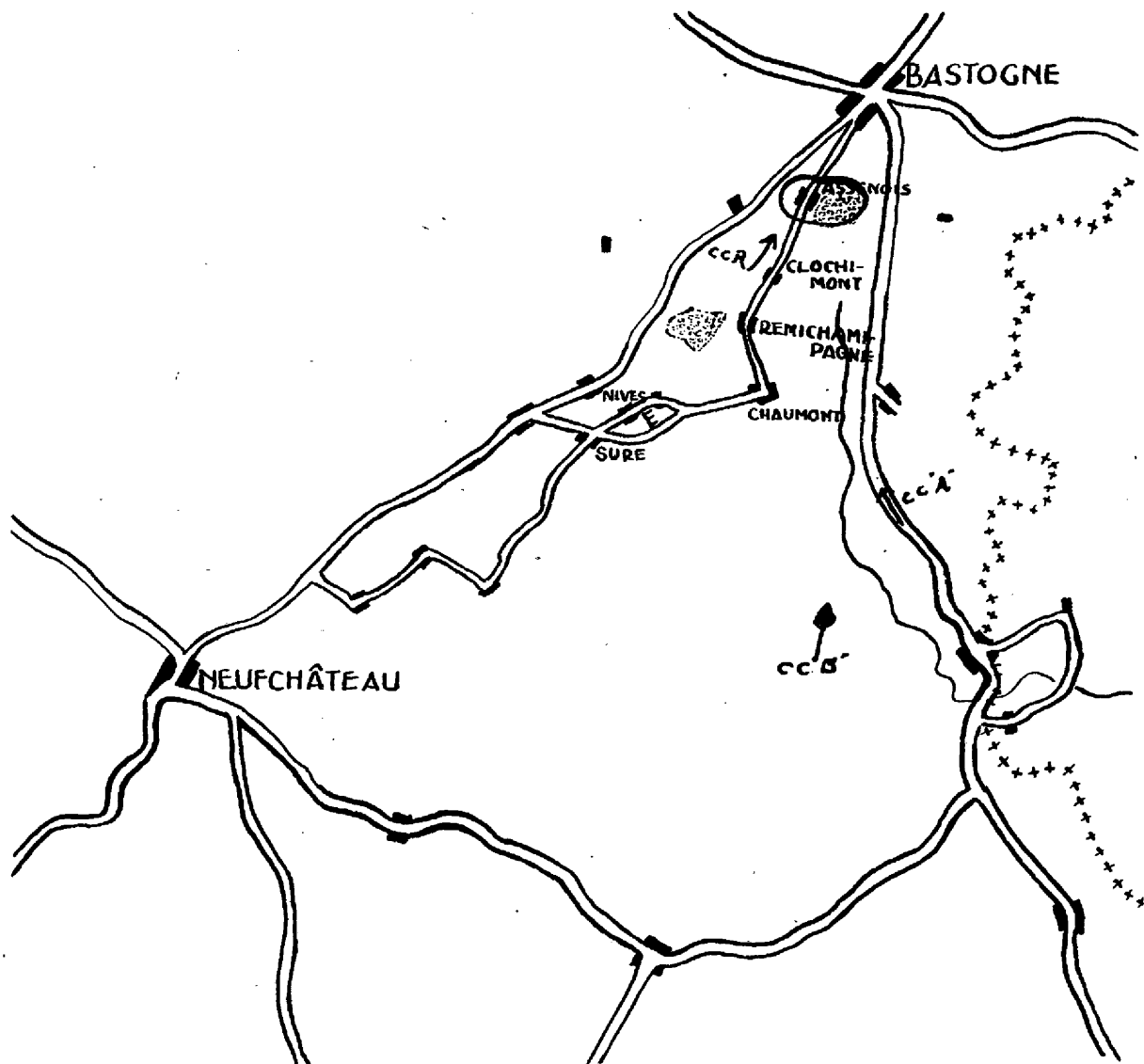
COORDINATION OF ARTILLERY WITH THE TANK-INFANTRY TEAM

One of the major mistakes of the German High Command in mapping out their strategy of "lighting war" was a de-emphasis of artillery support.

It was thought that, by its very nature, artillery would tend to slow down the attack to the pace of the foot soldier or, at best, to the six mile per hour pace of the tractor or horse drawn gun. It was decided to equip the Panzer Division with flat trajectory weapons more suitable for antitank work and move the artillery back to a position roughly corresponding to our corps artillery. As close support for the armored attack, the mortar was substituted in many cases for light artillery, while the dive bomber was assigned many of the targets formerly taken under fire by the heavy artillery.

The limitations placed on the mortar by its lack of range and weight of projectile and on the dive bomber by weather, terrain, and enemy action soon disproved their theories.

I do not mean to imply that the use of artillery was ignored. Those who fought against the Germans at ANZIO, NORMANDY, and in the BULGE know only too well how devastating the enemy artillery fire could be on occasion. But there we have its primary weakness - it could only be effectively concentrated on occasion. The proportion of artillery battalions to tank and infantry battalions was too small, and the guns were too far back and widely scattered. It became a major problem in logistics and communications to concentrate heavy fire in any given area.



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Plans for massing fires became a matter of days and even weeks instead of minutes and hours.

Fortunately, the U.S. War Department did not go along with the German way of thinking and our whole organization remained adequate in artillery support, although the organic armored division artillery left something to be desired.

Instead of finding a substitute for artillery support, it was decided to gear the artillery to the quickened tempo of the tank attack. To the time-tested principle of massed fires, it became necessary to add mobility and flexibility. The base of fire had to be established for the 20 mile per hour tank force, as well as for the three mile per hour infantry force. The mobility was achieved primarily through the adaption of self-propelled guns in the armored artillery and better prime movers in the infantry and corps artillery. Flexibility was achieved largely through the adoption of a dependable FM voice radio and more simplified and efficient fire direction and observation methods. But this mechanical flexibility was not enough. We needed flexibility of another kind - flexibility of mind - the ability to fit the means available into our plans. This is the kind of flexibility that was often lacking.

The principles behind the artillery in support of tanks, and artillery in support of infantry, are basically the same principles. But there are innumerable differences in application; and by a lack of flexibility of thought, I mean, an unwillingness or inability to twist the new weapons and methods into a combined plan with the new armored attack. Our artillery organization, while not perfect, was

better than any other. But in its use, we sometimes fell down badly.

This failure to use artillery to the best advantage can be laid at the door of artillerymen, infantrymen, and tankers alike. But it is not the intention of this article to go into the short comings of the artillery. It is rather my intention to bring before the front line unit commander some thoughts and considerations which, I believe, are frequently unknown or overlooked in the conduct of a combined attack. Serving as an artillery liaison officer with an armored division throughout World War II, it was my privilege to work, at one time or another, with three tank battalions, six infantry battalions, and a cavalry group. Whatever their efficiency in other matters, when it came to the use of artillery, they did not know what to do with it. This is true, with but two exceptions. There was one tank battalion commander in my own division and one infantry battalion commander in an infantry division we supported briefly who really knew their stuff when it came to supporting fires. The wonder is not that only two were well acquainted with artillery support, but that there were that many! It must have been foresight on their part, because mighty little was taught, and less written, on the subject of coordination of artillery with the tank-infantry team prior to the war. Most of what was written tended toward the German School of thought I mentioned previously. Too often when an infantry or cavalry officer thinks of artillery, he gets the mental picture of a fire direction center with its complicated communications and technical equipment or the survey team with its mathematical tables and instruments. Knowing he hasn't time to investigate these matters thoroughly, nor even to delve into the mysteries of small and large "T",

he decided to leave the whole matter of artillery support up to the artillery itself. When he makes this decision, he materially reduces his own effectiveness. The things of which he should have some knowledge are simple things. If he has a grasp of the observation, communication, and liaison set up, he has all he needs to know. A knowledge of ammunition supply and types of target is also useful. But if he makes adequate use of the first three, he automatically has the other two at his finger tips.

Let us take the artillery observation, communication and liaison facilities and see what we have in the tank-infantry-artillery team.

Communications are so entwined with both observation and liaison that we must necessarily treat that problem along with our considerations of the other two. For the purposes of our explanation, consider yourself a tank battalion commander, with an armored-infantry battalion attached, and an armored-artillery battalion in direct support - a "normal" team. Consider what you get from the artillery and what you can do with it.

1. Observation. With each infantry company, there is an observer. He will have the best radio the situation permits. If the infantry is mounted, he will probably be mounted in a personnel carrier with a SCR 528 or 508. When dismounted from his carrier, he had a SCR 510 in his $\frac{1}{4}$ -ton. When he goes on foot, he has a SCR 509 or SCR 536. In a static situation, he will often have wire communications, in addition - the radios.

With each tank company we also have an observer mounted in a tank equipped with a SCR 508. He has continuous contact with the tank company

and his own fire direction center. He has remote control equipment which enables him to dismount from his tank and operate on foot for short distances.

In addition to the above, during the hours of daylight, a liaison plane is assigned to the battalion front to over watch all operations and add depth to the observation network.

There is no difference here between the number of observers with a tank battalion and an infantry battalion operating together and two infantry battalions operating together. But the differences in transportation and communications permit a wider, more varied and quicker use of the observation.

Generally speaking, in the attack, you will find the tank observer the more reliable means of controlling fire. The reason for this is evident when we consider that his communications are always ready at hand and not subjected to the weaknesses of portable radios. Moreover, his only enemies are antitank weapons and mines. He is less likely to be pinned down or cut off by hostile fire. He can keep a concentration directed on an objective until he himself is under the fire, since a medium tank can move through light artillery in comparative safety.

On the other hand, in the defense, the bulk of fire missions may be expected to fall to the observer with the infantry. For one thing, the tank observer will probably be with the counterattacking force in reserve. For another, the points of observation will more frequently be held by dismounted infantry, while their supporting tanks will be on the reverse slope in defilade, or virtually so. An observer in defilade is no observer at all.

To clear up a misunderstanding that frequently occurs, let us consider the reason for the observer's presence in the line. He is detailed to a company with the mission of supporting this company by fire. It is paradoxical that the very fact of his being detailed frequently interferes with his mission. This comes about through a too-strict interpretation of the term "detailed" on the part of the supported unit commander. We must consider that the observer cannot support with fire a front he cannot see. Therefore, it is sometimes necessary for the observer to leave the company in a defiladed position and seek an observation post outside the company area. This action by an observer is frequently misinterpreted by the supported unit commander to mean the removal of artillery support from his unit when quite the reverse is true. In the final analysis, the observer remains under command of his artillery CO and operates under the supervision of the liaison officer.

Aside from the circumstances mentioned above, it is usually desirable for the FO with the infantry to keep close to the company commander. This comes about because the infantry CO is most often on or near the high ground in the area and his best communications are by personal contact.

The tank observer, on the other hand, should be allowed more latitude. When the FO and the tank company commander are in their tanks, all communication must be by radio, whether the tanks are 20 yards or two miles apart. Therefore, the commander has control of the fire on his front regardless of the relative position of the observer.

While no one in the supported unit has direct contact with the air observer, he is the most valuable means of fire support you have during daylight hours. You have ready access to him at any time through the observers with the companies or through the liaison officer at battalion headquarters. This observer is especially useful in locating enemy artillery and mortar positions, enemy troop concentrations behind the lines and adjusting on an area before the tanks and infantry break from cover. Remember, the air observers primary mission is artillery adjustment and his secondary mission is reconnaissance. His radio is in the busy fire direction net. When you have him on a reconnaissance mission, you are reducing your over-all artillery support. You must be judicious in deciding at any given moment whether reconnaissance or artillery fire is more important.

2. Liaison. I have referred several times to the liaison officer. Let us now see where he fits into this picture. As the term "liaison" implies, he is the chief link in the chain of your artillery support. The artillery battalion commander has the duty of maintaining contact with the supported unit commander, the combat commander, division artillery, attached artillery, and leading his battalion. It is obvious, therefore, that he cannot spend much time at your CP. The liaison officer takes the artillery battalion commanders place with you when he cannot be present. He is responsible primarily for helping you with your artillery plan and for keeping you abreast of the artillery situation. Equally important, he keeps the artillery informed of your plans. It is well to remember that the artillery

usually displaces on his advice to the CO. It is imperative that you keep him informed at all times and make known not only your actual plans, but even tentative plans as soon as possible.

The liaison officer further coordinates actions of the ground and air observers. In the case of over-lapping fire missions, he decides the priority of fires based on your situation and plans. He should be equipped to offer advice on the choice of artillery targets, how much and what kind of fire to use on these targets and the availability and expenditure of artillery ammunition.

3. Communications. In speaking of the observers, we have touched lightly on the subject of communications. We will now look closer at what is frequently called the "nervous system" of the artillery. This is the link that binds the "eye" (observers) to the "brain" (fire direction). Although I have mentioned some of the observer's radio equipment, the type is not important. What is important is the limitations and capabilities of his equipment.

An important point frequently overlooked, is that the artillery lieutenant or sergeant on the front line has at his call, not only the supporting battalion, not only your own division artillery, but the whole of corps artillery! He can rarely call down every gun in corps on a given mission, but he can nearly always get you more support than your organic division artillery alone can provide. The network is simple. He has communications with the direct support battalion fire direction. This fire direction has communication with division artillery fire direction, division artillery fire direction has communication with

corps fire direction. Even when the bulk of corps artillery is too far to your rear, you will find some elements of corps artillery attached to the division which can give you additional support when needed. It should be very rarely that you couldn't get two light battalions and one medium battalion on any worthwhile target. Frequently you will get twice that much.

To add greater flexibility to the communication network, the liaison officer has a wide choice of nets. In addition to his own fire direction, he has the means of checking into the fire direction net of any of the organic artillery battalions of the division, or into division artillery fire direction net. Because of the fact that the liaison officer has a station in each of your company nets is linked with the air observer and with liaison officers at combat command and attached artillery, he is a fertile source of S-2 information.

The operations of observation, liaison, and communication will be clearer if we follow its working through a combat attack. The operation I have chosen keeps close to the team set up we have been considering - a tank battalion supported by an infantry battalion. It is not quite a "normal" operation in as much as the tank battalion was at half-strength and the infantry battalion couldn't muster any more than 300 men. The artillery played a little larger part than normally, too. But the use of artillery in this action illustrates the points I have mentioned previously.

This is an attack on a typical European farm village - a few hundred inhabitants and fifty or sixty buildings. ASSENOIS, in BELGIUM, is not of much importance from a military point of view.

It doesn't occupy the commanding ground in the vicinity and isn't a communication center. Actually, the only prominence it ever received was as an intermediate objective. It might not have attained this dubious honor, but for two facts: (1) the weather was cold, and (2) it is just a few miles south of BASTOGNE. The German ring around BASTOGNE on the 26th of December 1944 ran right through ASSENSOIS. It had been a larger circle earlier in the day, but by 1500 had contracted till it just about included ASSENSOIS. As I have said, the weather was cold so the Germans were crowded, about 500 strong into the town. They were going to do their defending from the shelter of the houses. Of course, the gun crews of the two howitzer (105) batteries and the 17 antitank guns around the town had to stay out and shiver like the rest of us.

The units making up our tank-infantry team that afternoon were the 37th Tank Battalion (26-M4, 15-M5 Tanks), 53d Armored Infantry (about 300 riflemen), 94th Armored Field Artillery Battalion (105 SP), Battery C, 177th Field Artillery Battalion (155-mm Howitzer) attached in direct support.

This was nearly all of Reserve Command, 4th Armored Division. There was a troop of cavalry and two platoons of tank destroyers in the combat command also, but they did not take part in this operation so to avoid confusing details we will not go into their disposition. Let us keep strictly to the action of our tank-infantry-artillery team.

The mission of the Reserve Command was to secure the division left (west) flank, while, to the east, CC "A" on the right and CC "B" in the center were to break the German defenses and join the 101st

Airborne around BASTOGNE. The CP of the 37th Tank Battalion, Lt Col C. W. Abrams, commanding, was in CLOCHIMOUNT about 1400.

D/37 (light tanks) were defending the reinforced battalion left flank along the BOIS DE COHET west of REMICHAMPAGNE. With D/37 was an artillery observer in a borrowed light tank. The three medium companies with the infantry were reorganizing in the vicinity of the CP. The artillery was disposed on the high ground to the southeast, around NIVES and SURE. Since the only good artillery positions were in this area and it had been by-passed, the artillery had successfully attacked and cleared this location on its own. Since the 94th had only one medium tank and two observers available, one FO had been sent to the light tank company and the other, Lt Guild, took his medium to A/37, which was combined with C/53 to form the lead team.

When the 37th and 53d had completed reorganizing in the vicinity of CLOCHIMONT, A/37 and C/53 pushed northwest along the ridge which overlooks ASSENOIS from the southeast.

B/37 and B/53 were holding the high ground in the vicinity of CLOCHIMONT. CC "B" had not progressed as expected which left our right flank open. C/37 and A/53 were moving north along the road which runs from REMICHAMPAGNE to ASSENOIS.

When it became evident that ASSENOIS was being defended and couldn't be by-passed without abandoning our mission, Col Abrams recommended that we make a coordinated attack on the town and move on to BASTOGNE, the division objective. That would accomplish the division mission, and, by joining with the Airborne, gave us a stronger force with which to widen the corridor. This recommendation was accepted by the Combat Commander.

It was decided to allow A/37 (Reinf) to continue along the ridge while C/37 (Reinf) made a frontal attack on the town. C/37 could hardly be called a "company" since it had only four tanks. Capt Bill Dwight, S-3, in his tank, joined "C" Company for the attack bringing it up to platoon strength. A/53d had about 150 men, which gave us at least an infantry-heavy team for mopping up operations in the town.

To insure the success of this venture, Col Abrams asked for as heavy an artillery concentration as we could muster. As artillery liaison officer, I could not promise much since the weight of the artillery was with the main effort (CC "B"). I informed my CO, Lt Col Parker, who came forward to work out the details of the plan with Col Abrams. The artillery plan was as follows: "A" and "C" Batteries, 94th, would fire on the antitank guns to the north of the town, throughout the attack. "B" Battery, 94th, would fire on the antitank guns along the road to the south of town. C/177 would fire on the center of town. B/94 would lift to the center of town as the attack progressed. C/177 lifted to the far edge of town.

Fire direction of the 94th was out of contact with the Fourth Armored Division Artillery. Fortunately, I could reach them on the liaison set and they agreed to fire one 105-mm Battalion and one 155-mm Battalion when requested. Through their own fire direction channel, I reached the 66th FA, (also out of contact with division artillery). They also agreed to fire. From a rather inauspicious start we managed to build up a concentration of three 105-mm Battalions and four Batteries of 155-mm. Securing these extra battalions took about twenty minutes.

We had arranged that the fire was to be initiated by Col Abrams as soon after 1545 as the attack could jump off. Since there was no tank FO with C/37, Lt Chamberlin with A/53 was to left the fire, using his "peep" radio. The cub plane was to overwatch the action in case of accident to Chamberlin and to fire on targets of opportunity.

The attack jumped off from just north of CLOCHIMONT about 1545 as scheduled. When the tanks were less than 1000 yards from ASSENOIS, the artillery concentration was fired. Everything went according to plan except the 155 Battalion we had secured through division artillery was firing at extreme range and still could not quite reach the town. Luck was with us on that. Their rounds were falling directly on an enemy 105-Battery and two antitank guns along the south edge of the town!

But now luck turned. Lt Chamberlin's peep received a direct hit, killing the driver and wounding the FO. The radio was out for good. Expecting the fire to lift any minute, the tanks charged into the town. When he saw this, the air observer sensed what had happened and ordered the fire lifted. Then another stroke of hard luck. The Corps 155 which had so successfully neutralized the artillery and antitank guns could not be turned off so quickly. Because of the time interval two volleys were under way before the "cease fire" order reached them. The infantry was pushing so close behind the artillery that the last volley caught three of their half tracks and destroyed them.

Fortunately, the men had already deployed and there were only two casualties.

By the time the last artillery volley had landed, the tanks had overrun the antitank guns north of town and the infantry were mopping up. Thanks to the fact that the enemy had been kept pinned down until the tanks and infantry were in their positions, over one hundred enemy were killed and wounded and about four hundred taken prisoner. In addition eight 105-mm Howitzers and 17 antitank guns of various calibers were captured.

Bearing in mind what was said earlier about the flexibility of artillery in support of armor, let us briefly reexamine this action.

We see at once the need of flexibility in the over-all plan. Here was a small combat command on a flank security mission. For this mission it had little artillery support. But in a matter of minutes the mission was changed to one ^{of} attack against a defended position. This necessitated heavier artillery support, which could not be obtained through normal channels, but was procured through the use of alternate channels available.

The preparation was fire "on call". In an "on call" mission, the artillery computes its data but continues with its other missions until the "call" mission is needed. Should the attack be delayed, friendly units are not deprived of artillery support. When the tank-infantry commander has disposed his forces and the tanks and troops are actually moving, the fire is called for. It is delivered in the exact area and at the moment the maneuvering force desires. It is economical in ammunition. Fired when the attack is actually under way, the concentration does not have to be repeated; most important of all, it is maneuverable.

The fire can be adusted as the attack progresses to take advantage of changes in the situation. The lack of a tank observer with the attacking force was a disadvantage, but it did not hinder the delivery of effective fire support. The infantry observer was in a position to take over control of the fire. When he was wounded, the air observer took up the duty. Had the air observer been absent, the team commander could have controlled the fire through the liaison officer.

It is well to note the action of the artillery battalion itself in this action. To secure the best firing position, it had to fight for it. Making use of its armor protection, mobility, and fire power, it was well able to do this.

Although every action is different, most of the same principles of warfare apply. Fire and maneuver are still elementary and the artillery is still capable of providing the base of fire. This makes the whole tank-infantry team a maneuvering force. It takes full advantage of both fire power and maneuverability.

By itself, the artillery wins no battles, but its effective use is often the deciding factor. In this day of armored warfare it is true, as it was in the time of Napoleon, "God is on the side of the most artillery".

