

SHOULD TANKS REPLACE ARMORED ARTILLERY?

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BY

CARLETON PREER, JR.

MAJOR, CAVALRY

"There is a principle which is a bar against all information, which is proof against all arguments and which cannot fail to keep man in everlasting ignorance - that principle is contempt prior to investigation.

HERBERT SPENCER

During World War II a new combat arm, the tank destroyers, was conceived; it was employed in combat; and it became outmoded. The disappearance of tank destroyers from the battlefield was not due altogether to their being based on an erroneous concept as is the popular belief. An equal cause for their obsolescence was the evolution of tanks and tank warfare. In the early phases of the war the tank was armed with a relatively small, low-velocity cannon for employment primarily against personnel targets. Stated in its simplest form, when enemy tanks were interposed between the tank and its objective the tank destroyer screened the friendly tank, thereby permitting it to proceed with its mission. This system consumed time and created added problems in coordination. The logical step followed. Better tank-fighting armament for the tank was evolved to permit its fighting enemy tanks. Consequently, at the termination of the war no basic differences existed between the tank and the tank destroyer in combat tank-fighting capabilities. Hence the role of the tank destroyer in combat, though not removed, has been assumed by the tank.

A parallel to the integration of the tank destroyer role into the tank role, though less apparent, is the relationship of the armored field artillery to the evolution of the tank and tank warfare. The tanks of our earliest armored divisions mounted 37 and 75 mm cannon. Compare the artillery and tank materiel which exists in the armored division of today. Tank cannon are as high as 105 mm, the

caliber of the direct support artillery. Furthermore, the trend is toward still larger calibers.

The tank is equipped with a turret capable of unlimited traverse. The artillery piece has neither a turret nor unlimited traverse - two features which has been the objective of much research by the field artillery. Frequently the objection is proposed that the turret would restrict the functioning of the gun crew. This is incontestable. It is equally true that a tank imposes certain restrictions on its crew. However, it is doubtful that a tanker would elect to trade this armor protection for more "elbow room" while assaulting a machine gun position. This is equally applicable to the artillery, particularly with respect to overhead artillery fire. At no time during the last war was the artillery of our army subjected to the devastating time fire which it delivered on the enemy. But certainly in future wars we must be prepared to protect gun crews from tremendous masses of overhead artillery fire. In all probability the "variable time" or "proximity" fuze will be common to both sides of the battlefield in future wars. It is not a question of the turret hampering the functioning of a gun crew. It is an essential which must be provided if the crew is to survive and deliver fire.

For many years the artillery has recognized the need for unlimited traverse in its direct support artillery. This limitation has been circumvented in the past by an expedient at best. Being mounted on a tank chassis, large deflection shifts could be made by maneuvering the

vehicle. This appears simple enough, but in practice certain technical difficulties are involved. For one thing, the moving of the vehicle requires time delaying the delivery of fire. Another factor to consider is the realignment of the panoramic sight on the "near" and "far" aiming stakes after the movement of the vehicle.

The tactical employment of the armored field artillery as compared with the tank (specifically the assault gun) is as nearly identical as is the materiel. The primary mission of the assault gun is to give close fire support to small units - battalion, company, platoon.<sup>1</sup> Contrast to this, the primary mission of the armored field artillery is to render close and continuous support to armored units by fire, neutralizing or destroying those targets which are most dangerous to the supported arm.<sup>2</sup> Basically, therefore, we have two separate arms within one division employing virtually the same weapon to accomplish virtually the same mission.

Both tanks and field artillery, within their own arms, cover a rather broad field in types of materiel as well as in missions and methods of employment. The materiel and employment of the tank company is considerably different from that of the M-45 assault gun platoon; however both are manned by armored-trained personnel and both employ tanks. Field artillery in the new armored division includes

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1. War Department, Assault Gun Platoon, FM 17-25, 8 September 1944.  
U.S. Government Printing Office.

2. War Department, Armored Division Artillery, FM 6-105, 15 August 44.  
U.S. Government Printing Office.

medium as well as light artillery. The mission and materiel of the medium battalion has no counterpart in the tank organization of the division. None of our present tank organizations are suited to replace the role of the medium artillery. With our present tank materiel, the M-45 (105 howitzer) is the only tank which is suited to replace the role of light artillery due to the characteristics of its trajectory. The high muzzle velocities, flat trajectories, and small bursting charges of organic tanks, other than the M-45, render them less suited to the field artillery role. However, we should not overlook the possibilities of varying the propelling charges in those cannon which produce an "artillery bursting charge" (preferably three inches or more) in order to obtain an "indirect support trajectory", such as the 105 howitzer ammunition. This point assumes an increasing importance with the current trend toward larger caliber tank cannon.

In the final analysis, it is incontestable that the present M-45 tank is capable of executing the mission of the light field artillery, and that reasonable possibilities exist for other type tanks to incorporate this capability without sacrificing development along strictly tank mission lines.

We often hear the statement, "the tank cannon is a defensive weapon". No idea can be more erroneous in import. Is the M-1 rifle in the hands of an infantryman a defensive weapon? Does not the tank cannon destroy the enemy and his equipment? In gaining an objective the tank uses every weapon at its disposal to inflict casualties and shock upon

the enemy. Even in fighting an enemy tank it is illogical to assume that the cannon is being employed defensively. The idea is not solely saving our tank by defensive fire but also destroying the enemy tank by offensive fire and maneuver. In supporting the advance of other tanks and of infantry the tank cannon is not idle but is employing offensive fire support.

The organization of our first armored divisions showed a striking resemblance to the infantry division, the primary difference being that in the former the tank, rather than the infantryman, was established as the "backbone" of the striking force. We provided supporting units similar to that found in the infantry division. Herein lies the weakness. Armored artillery, by virtue of the characteristics of armored warfare, is confronted with problems which a mere modification of infantry division artillery can not meet. While it is true that armored artillery of the last war produced highly effective results, it is dangerous thinking which permits us to accept the conclusion that similar results will be obtained when employed against a tank-conscious, encirclement-wise opponent in the future. Furthermore, we should not rely on an expedient type of solution in meeting the problems peculiar to armored field artillery. We should accept these conditions as the norm and produce an organization trained and equipped to meet these requirements.

Armored artillery must be prepared to reconnoiter firing positions while under artillery and small arms fire. The successful accomplish-

ment of this mission is entirely out of the question with the lightly armored and thin-skinned vehicles organic to the present artillery. All elements of the reconnaissance party must be protected with armor. In addition, these vehicles should possess the necessary armament to permit their employment in limited offensive action where such action is necessary to insure the location of the best supporting positions. These vehicles should be highly mobile and provided with excellent means of communication. In brief, the vehicle which best meets the requirements of the artillery reconnaissance party in the armored division of today is the M-24 light tank.

Armored artillery must be prepared to occupy positions and to deliver supporting fires while being subjected to enemy artillery, mortar, and small arms fire. The subject of overhead cover has been discussed previously. In addition, it must possess the necessary armament and armor to permit its occupying firing positions by limited offensive action where the situation demands such action. Each firing piece should be equipped with two-way radio communication to eliminate the dependence on wire. The firing unit should be so equipped and trained that it could occupy position, be laid for indirect fire, and deliver fire without any personnel having dismounted from an armor protected vehicle. The only vehicle existent in our Army today which fully meets the requirements for the primary weapon of this unit is the tank. The M-45 tank is ideally suited for this role.

Conditions which warrant such an organization are not based entirely



on some situation which may develop in future wars, though every indication points in that direction; such conditions existed in many instances in normal armored operations in the past war. The artillery should not be dependent on another unit to fight these small engagements for them. Thinking in terms of direct, close combat, why should the artillery in the armored division be something of a liability, requiring perimeter protection, when it is potentially an asset in mopping up the battlefield?

We have considered this organization primarily with regard to its offensive mission. What about its own defense? With its armor and fire power, its greatest threat would be an enemy tank. Consequently it should be capable of and trained in fighting enemy tank. This mission should not be looked upon as the exception to the rule but rather as a normal expectancy. A projectile should be available which provides armor penetration equal to that of any other tank. Here, again, we see the possibilities of a large caliber tank cannon with variable propelling charges, one for use in an indirect fire role and one for defense against armor.

In considering all of these problems - reconnaissance, occupation of position, delivery of fire, and defensive fighting - we can arrive at only one conclusion. The unit needed for delivering indirect fire support for a fast moving fluid, aggressive armored action is a unit which bears a much closer resemblance to a tank unit than to an artillery unit. With such an organization (and for the purpose at hand we shall

coin the term "indirect support tanks") the entire role of indirect support is put on a much broader basis. The missions and the assistance of the indirect support would encompass a wider latitude. The German Army recognized this in their use of the Sturmgeschuetz (assault artillery) which broke into the enemy defense system to help the infantry directly by close support.

Another factor which requires the most careful consideration in direct support is forward observation. In the light of experiences of the last war it was conclusively proven that the vast bulk of our indirect fires will utilize forward observation methods. This is definitely a step in the right direction. Forward observation methods are simple, reliable, and rapid. The method is ideally suited for support of armored warfare. There is only one disadvantage; our present concept of artillery support presupposes the availability of an artillery-trained observer at that particular point and at that particular place in the battle which will obtain the most decisive results in assisting the attack. Unfortunately these conditions seldom coincide, regardless of how diligently the artillery commander had gleaned his staff and unit commanders in order to provide the maximum number of forward observers. One unit history reports that, in an operation involving an armored division in attack, a total of thirteen forward observers and liaison officers were employed, as opposed to an authorized

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1. Manfred Knayer, "German Assault Artillery", Armored Cavalry Journal (September-October 1947), p. 25

five. It is interesting to note that of this thirteen three were wounded and evacuated in the first few hours of the attack. Even with this number, observation coverage of the front was far from complete.<sup>1</sup> Under our present organization there are simply not enough forward observers. There are too many "fronts" in an armored exploitation to ever hope to obtain complete coverage with our present system of fire support.

Then what is the solution? Here are the facts. Forward observation procedure has recently been standardized for all arms and services. It is common knowledge among tankers. Add to this the fact that the tank platoon leader and tank company commander are best qualified to determine where their indirect support is most needed to assist the development of their attack and we have the answer. Let the tanker adjust his own "artillery". The question may arise as to whether the tank unit commander would be overburdened with this function. If the situation is such that massed fire support is required, the tank commander will have sufficient time to employ it. If massed fires are required, then massed fires should be his first and primary consideration at the moment, and it should not be necessary to locate another party to obtain these fires. He has his tanks; he has his infantry; and he should have his artillery - not through a lieutenant from another arm but by a direct link on the other end of his radio frequency.

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1. After Action Report, 83rd Armored Field Artillery Battalion. Dates covered, 1 November 44 through 30 November 44.

Eventually we arrive at this question. What type of organization do we need to deliver fire support for an armored division? It is my opinion that first of all this organization should be a tank organization, equipped with a tank similar to the M-45. It should be assigned a role which incorporates the functions of the present assault gun platoon and of the direct support artillery. It should be organic to the tank battalion and consist of a minimum of three firing units of six guns each. Each tank battalion should contain the necessary personnel and organization (fire direction center) to mass the fires of the three firing units and to establish a link with the heavier supporting fires of division and corps. The firing units and the fire direction center should be provided with the necessary radio communication to maintain contact with platoons of armored infantry and of tank platoons. These platoons should call for and adjust observed fires. Control of unobserved fires would be a function of the fire direction center and the tank battalion commander. With such an organization the battalion commander would be able to affect positive controls and coordination heretofore unknown, with every element of his team under his own command.

Armored field artillery of the last war accomplished results which were truly remarkable. These results were accomplished in the face of many trying problems and adverse conditions. The majority of these difficulties can be obviated by a fresh approach to the problem of what we are trying to accomplish and how it can best be accomplished.

Our theory and technique of indirect fire support in the armored division of today is essentially the same as that of the Expeditionary Force of 1917. We must accept the probability that the battles of the future will often be fought in widely dispersed groups with the rear of an armored division being as vulnerable as its front. We must make certain that our supporting fires are based on an organization and method of employment which are not dependent on a front line which probably will not exist. We must reconsider these problems in the light of current developments. As General Gavin has stated, "War is a dynamic science, ever changing. The principles stay the same but the means and methods constantly develop. Every change is opposed by many of those who won the last war for they are convinced their way was and still is the best."<sup>1</sup>

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1. Major General James M. Gavin, "The Future of Armor", The Armored Cavalry Journal, (November-December 1947), p. 4.

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