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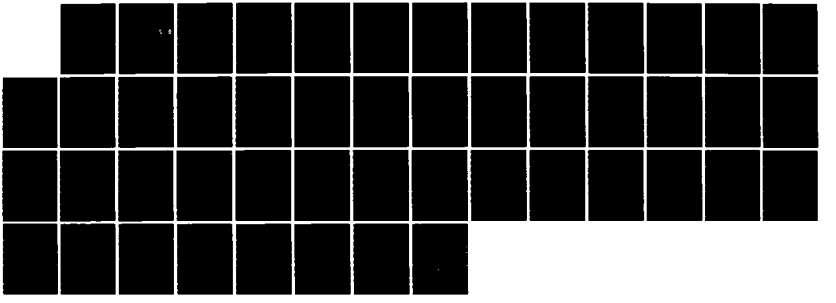

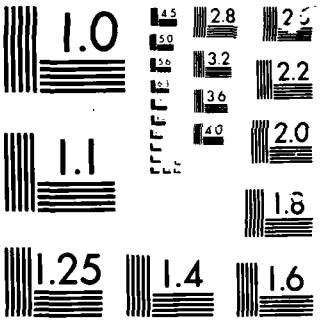

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Organizing Field Artillery for Desert Operations: Tactical Tailoring of Field Artillery Units

by

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U.S. Army Command and General Staff College
Fort Leavenworth, Kansas

18 December 1985

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86-2191

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Accepted this 22nd day of January 1986.

ABSTRACT

ORGANIZING FIELD ARTILLERY FOR DESERT OOPERATIONS: TACTICAL TAILORING OF FIELD ARTILLERY UNITS, by Major Michael H. Vernon, USA, 42 pages.

This study examines the organization for combat of U.S. Army field artillery units operating in a desert environment and determines the adequacy of current doctrine to insure effective field artillery support to U.S. Army heavy divisions conducting combat operations in the desert.

An historical analysis of desert operations by the British and U.S. Army forces in North Africa in World War II is presented, and the lessons learned in these actions are examined in light of AirLand Battle doctrine. The study also discusses centralized and decentralized control of field artillery units and examines the differences presented on today's battlefield by the meshing of offensive and defensive operations as exemplified by the AirLand Battle concept outlined in Field Manual 100-5, Operations.

The study concludes that current doctrine is adequate to support organizing field artillery for combat operations on the AirLand Battlefield. The main problem is in the interpretation of current doctrine based on offensive or defensive operations. The author concludes by stating that to be successful, field artillery units must be organized to provide immediate close fires from field artillery battalions organic to maneuver brigades. The requirement to provide massed fires must be met by the field artillery brigades and battalions from the corps artillery.

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SECTION I

INTRODUCTION

Desert warfare presents some very complex and interesting challenges to the military planner and tactician. It has often been described as being a paradise for the tactician but hell for the logistician.[1] When one considers desert operations, the images that immediately come to mind are of wide open areas requiring mobility, maneuver oriented activities, and offensive actions. This type of warfare is characterized by speed, deep thrusts by independent forces striking into the enemy rear to cut lines of communication (LOCs) or attack command and control facilities, counterattacks at points where and when the enemy is not expecting them, and bold, daring, and decisive actions. AirLand Battle doctrine emphasizes the necessity for our forces to take the battle to the enemy through decisive actions aimed at his centers of gravity in order to bring about the destruction of his forces and cause the disintegration of his will to fight. The desert appears in many ways to be an ideal environment for the conduct of offensively-oriented armored operations which adhere to the principles of AirLand Battle doctrine.

STATEMENT OF THE PROBLEM

The purpose of this paper is to examine the organization for combat of U.S. Army field artillery units operating in a desert environment and determine the adequacy of current doctrine to insure effective field artillery support to U.S. Army heavy divisions conducting combat operations in the desert. The fire support dilemma that the field artilleryman is faced with, not only in the desert but in any battlefield situation, is fast fires versus massed fires. The problem is in being able to provide an adequate balance between responsive close support fires and being able to influence the battle through massed fires at the decisive point and time. Doctrinally, this problem has been solved in the past by the assignment of one of the four standard tactical missions of direct support (DS), reinforcing (R), general support-reinforcing (GSR), or general support (GS). If there was a need to provide responsive fires or massed fires, this need could be easily met by a call on the radio with instructions to the field artillery unit to change from its current mission to one of the other standard tactical missions. However, the desert environment presents some unique problems which alter the normal solution. Primarily, the greater distances between maneuver units characteristic of desert operations means that the accompanying artillery will often be out of range to provide mutual support or to be able to mass fires by merely changing the azimuth in which the tubes are

pointing. These range limitations change the traditional approach to organizing field atillery units for combat operations. This problem may not be limited to a desert environment but may also apply to operations on any battlefield where the U.S. Army employs AirLand Battle doctrine.

BACKGROUND

It has been over forty years since the United States Army has had to employ divisions and larger formations in actual combat operations in a desert environment. Technology has advanced tremendously since World War II (WW II) which, quite naturally, changes the complexion of the problem. However, there are underlying concepts which facilitate effective field artillery support for desert operations. Our Army learned many lessons about the employment of these concepts and about desert war fighting in North Africa during WW II.

Ultimately, these lessons dramatically changed the way the U.S. Army was to fight the rest of WW II on the continent of Europe. Since that time, the Middle East has exploded with unrest, terrorism, and wars of unprecedented violence, speed and resource consumption. Future wars should reflect some of these same characteristics, not only in the desert, but also in Europe and in other mid- to high-intensity conflict areas. Consequently, the U.S. Army must be prepared to fight in a desert environment, and our doctrine must allow us to do that. For the

field artilleryman, the problem becomes how best to organize the artillery to support desert operations. What considerations need to be taken into account in deciding how best to provide fire support to accomplish the mission in accordance with the commander's intent? Some of these issues will be examined.

ASSUMPTIONS

There are a few assumptions that need to be made in approaching this problem. First, the enemy forces considered will be Soviet (or Soviet surrogate) armor and mechanized forces using Soviet maneuver tactics and doctrine. This discussion will be confined to operations in the terrain prevalent in the largest areas of the desert and not in the numerous mountainous areas. Considerations will be restricted to conventional operations; nuclear aspects of the problem will not be considered. It is also assumed that basing rights and the support of the local government exist and that all forces necessary for employment are available.

METHODOLOGY

The approach taken will be first to establish a common foundation of understanding by identifying key terms and concepts and then to examine briefly the likely nature of desert operations through a description of the terrain and a brief

discussion of the maneuver tactics that are expected to be employed by U.S. and Soviet ground forces. Then, a brief look will be taken at the British and U.S. Armies in North Africa during WW II to determine how both armies organized their field artillery for combat and what changes they made to improve fire support to maneuver forces. Finally, current U.S. Army doctrine will be examined to see if the principal lessons which emerged from our experience in employing field artillery in the desert during WW II have been incorporated into our current thinking.

SECTION II

TERMS AND CONCEPTS

In order to develop a common foundation of understanding, it is necessary to define briefly certain key terms and concepts and discuss their relationship to desert operations. The first concept which needs to be understood is the mission of field artillery. In FM 6-20, Fire Support in Combined Arms Operations, the following is found: "The mission of the field artillery is to destroy, neutralize or suppress the enemy by cannon, rocket and missile fire and to assist in integrating all fire support into combined operations."[2] The intent is to provide fire power for combined arms action. The "how to" comes from the tactics employed. Field artillery tactics are those methods, procedures, and actions that are used to apply combat power effectively through fire support means.

How does the application of this combat power occur? The field artillery applies combat power by placing units in organizations and assigning missions to them. More simply put, commanders tactically tailor artillery units in much the same manner that maneuver units are tailored to accomplish specific missions. This tailoring process provides for the maximum combat power to be applied at the decisive point while allowing the commander to retain the necessary flexibility to react to any battlefield situation.[3] There are five fundamentals that are

to be considered when organizing field artillery units for combat operations. These fundamentals as outlined in Field Manual (FM) 6-20-2J, Division Artillery, Field Artillery Brigade, and Corps Headquarters, are as follow:

> 1) Maximum feasible centralized control.
> 2) Adequate field artillery support for committed combat units.
> 3) Weight to the main attack in the offense [or most vulnerable area in the defense].
> 4) Facilitate future operations.
> 5) Immediately available field artillery support for the commander to influence the action.[4]

It is the first two fundamentals which are the primary cause of the dilemma of fast versus massed fires. The critical question becomes, how does one tactically tailor units to solve this classic artillery dilemma? What mission assignment provides the optimum mix of rapid response and flexibility to mass fires for an unforeseen tactical situation? The art involved in the solution of this problem is in balancing both requirements and still successfully accomplishing the mission. This brings us to some of the most confusing and misunderstood issues in the field artillery - centralized and decentralized control.

The description of centralized control found in FM 6-20-2J is as described below:

> Field Artillery is most effective when control is centralized at the highest force level consistent with the fire support capabilities and requirements for the overall mission. Centralized control of field artillery permits flexibility in its employment and ensures that effective support can be rendered to each subordinate element of the command and to the force as a whole.[5]

Decentralized control is at the other end of the scale. Generally speaking, artillery that is decentralized is more responsive to the maneuver brigade or battalion commander. Thus, from the division commander's point of view, he loses control of artillery assets when they are decentralized.

Traditionally, control of artillery has been centralized in the defense and decentralized in the offense. The expression of this association in current U.S. Army artillery doctrine may be found in the following excerpts from FM 6-20-2J:

> In an offensive situation, a lesser degree of centralized control is required than in a defensive situation, because the supported force has the initiative. To help close combat elements retain this initiative and maintain the momentum of the attack, the force commander may grant subordinate field artillery commanders wider latitude. The direct support [DS] and reinforcing [R] missions represent a lesser degree of centralized control.[6]
>
> As a general rule, a supported commander should maintain centralized control of his fire support during defensive operations so that he can react quickly when the enemy's main effort is discovered. In the defense, more centralized control of FA [field artillery] resources can be maintained through the assignment of GS [general support] or GSR [general support-reinforcing] missions.[7]

From the division commander's point of view, the mission of direct support is the most decentralized, and the mission of reinforcing is the next most decentralized. Moving toward centralization, the mission of general support-reinforcing is the second most centralized, and, finally, general support is the most centralized.[8]

The concepts of centralized and decentralized control of artillery can easily become confusing. In the past, field artillerymen have tended to organize artillery units for combat based on whether or not the maneuver elements were involved in offensive or defensive operations. It is important to remember this association of centralized control in defensive situations and decentralized control in offensive situations in examining principles and concepts of artillery employment in the desert.

Normally, as mentioned previously, artillery support has been reconciled by the assignment of one of the four standard tactical missions. The range of the weapons has provided the mobility to react to the battlefield situation, and flexibility has been gained by the ability to rapidly change missions by means of a radio transmission. The artillery range fan has provided both mobility and flexibility. Therefore, the centralization or decentralization of control has not necessarily been a hindrance to responsiveness, because missions could rapidly be changed among units that were within mutually supportive distances. However, as increases in distances between units become the rule rather than the exception, the problem changes and traditional solutions become invalid. Centralization of artillery assets is now required to maintain the flexibility to provide massed fires. Rapidly responsive fast fires are equally critical to the success of desert operations. Traditional solutions to the organization of field artillery do

not appear to work well in a desert environment. To understand why, the nature of the desert environment and desert combat actions need to be examined.

SECTION III

TERRAIN AND MANEUVER CHARACTERISTICS OF DESERT OPERATIONS

Desert terrain varies throughout the world from mountains to vast expanses of sand. As one writer said, "...deserts, like sea frontiers, separate the spheres of influence of the world's great powers."[9] An excellent description of the desert environment comes from a recent translation of a Soviet manual, Artilleriya V Osobykh Usloviyakh (Artillery in Special Conditions), which describes the desert as follows:

> A desert is an extremely arid region where there is *almost no precipitation*; temperature of the air is high and varies sharply during a 24 hour period, of a month or year. Most deserts are characterized by open, barely rugged terrain, almost a complete lack of vegetation, uniformity of locality, sandstone, rocky saline soil, a lack of water, fuel and building materials, frequent and strong winds, dust (sand) storms, mirages and unfavorable sanitary-epidemic conditions.
>
> In deserts there are poor road networks and often few settlements. Vitally important regions are located at definite centers, at times at a significant distance from one another. In this connection, combat action in desert localities is conducted for capturing or holding vitally important regions (objectives) of tactical significance. Combat action is dispersed, as a rule, on a broad front and carried out with a high command character.[10]

With these mental images in mind, what type of warfare is expected to be waged? What are the characteristics of desert operations?

Desert warfare is described in Field Manual 90-3, Desert

Operations, as follows:

> Tactical mobility is the key to successful desert operations. Obstacles and areas such as lava beds or salt marshes, which preclude surface movement, do exist. But most deserts permit true two-dimensional movement by ground troops similar to that of a naval task force at sea. Speed of execution is essential and requires self-contained all-mechanized or airmobile forces with excellent communications. Dismounted infantry are used in areas where vehicle movement is limited, such as mountains, or sometimes to establish strongpoints and blocking positions.[11]

Desert operations are extremely active and are subject to rapid changes. Maneuver is a main feature, and the force that is the most mobile and possesses the greatest speed has the advantage.[12] The measure of success as outlined in FM 90-3 is as follows:

> Successful offensive operations depend on rapid, responsive, and violent maneuver, seeking a vulnerable enemy flank and exposing none to the enemy. The enemy, realizing the danger of remaining stationary in this terrain, may chose to defend by attacking. The resulting meeting engagement between two attacking forces will often be a series of flanking actions with success going to the one who can find the other's unguarded flank first.[13]

Additionally, the freedom of movement inherent in desert operations favors the use of wide envelopments, turning movements, and deep operations which seek to destroy enemy LOCs and vital rear area locations.[14]

Soviet motorized rifle and tank divisions are able to take advantage of the open terrain of the desert which is ideal for the employment of large numbers of tanks, APCs, and mobile logistical units.[15] It appears that when Soviet forces conduct

offensive operations in the desert, the assigned frontages of tactical maneuver units increase; a division attack frontage, for example, may often be as wide as 50 kilometers, a sector 6-8 times wider than would normally be assigned in central Europe. The increase in frontage is probably because the Soviets expect to permit wide gaps between advancing subunits, with greater independence given to battalions and regiments. Secondly, divisional subunits will most likely attack in a one-echelon formation with a strong reserve committed whenever the situation demands. Soviet battalions are expected to operate independently and seek to attack the flanks of units, exploiting gaps in defenses and penetrating them to get into rear areas, in order to seize road junctions, water points, key terrain features and to encircle forces to destroy them.[16] These missions vary from those expected to be encountered in Europe, particularly with the independent employment of battalions. The exception would appear to be maneuver battalions organic to division-size Operational Maneuver Groups (OMGs), which are expected to operate independently.

Defensive operations should be undertaken temporarily by Soviet forces only to gain time to continue offensive operations. Strong mobile reserves should characterize desert defenses and be used to support critical sectors; they should also be ready to counterattack into the flanks or rear of encircling or penetrating opposing forces. Soviet planning stresses the use of

rugged terrain to gain secrecy, thus taking advantage of surprise by attacking from unexpected directions.17

From both the Soviet and the U.S. perspectives, successful desert operations will depend on rapid response and violent maneuver by armored and mechanized forces. Desert combat will be characterized by speed, mobility and aggressive offensive actions. Opposing units will seek gaps in enemy lines and will attempt to exploit these gaps in order to attack deep into the enemy's rear with semi-independent or independent forces to cut LOCs, attack centers of gravity and destroy vital rear area objectives. As units seek gaps and flanks in opposing lines, the result will be a series of meeting engagements or flanking actions with success going to those units that find unguarded flanks first.

Such warfare presents a difficult challenge for fire support. Artillery units that are in close support roles will not be within range to provide mutually supporting fires. Therefore, the capability to retain flexibility through changing from one standard tactical mission to another is lost. The direct support artillery that accompanies the maneuver units must remain within range of them to support their combat operations. These extended ranges will prohibit massed fires. How have others attempted to deal with this problem? The next section examines this question.

SECTION IV

HISTORICAL BACKGROUND: BRITISH AND AMERICAN WW II EXPERIENCE IN NORTH AFRICA, 1940-44

The last involvement the United States Army had in the employment of large units in desert combat operations was in North Africa in World War II (1942-1944). The same is true for the British Army, whose famed Western Desert Force began operations against the Italians in 1940 and fought the Axis forces there until victory in 1944. The battles that will be examined for the British are the battles of Salum (1941) and El Alamein (1942) and for the US, the battle of Kasserine Pass (1943). Specifically, the focus will be on how these armies organized their artillery for combat to meet the challenges of desert operations.

The British began the desert campaigns amid the turmoil and uncertainty surrounding the advent of armor forces and maneuver warfare. They had experienced the German blitzkrieg on the Continent and believed that the new way of war demanded that they provide fire power to the lowest levels. To accomplish this, they organized their army so that, "...there was a battery for each battalion in the brigade, which permitted a natural grouping and fostered affiliation with specific battalions."[18] Brigadier R.G.S. Bidwell, a British military historian, writes

that the new methods which were being adopted brought many problems, for example, "...the armored school undervalued artillery..."[19] They thought it hampered speed and movement. He also points out that, "...the failure to employ field artillery correctly in the Western Desert, for instance, seems to have been due to a failure to think out its role, and not to a pre-conceived doctrine."[20]

An example of the British perception of the role of the regimental artillery and its commander is shown in the following statement: "Normally, at the beginning of combat the artillery regimental commander attaches his battalions to tank regiments, and does not try to control their fire."[21] Adding to the problem, we see that, "As a result of this extreme decentralization of the artillery, its commanders found themselves without role or responsibility, had difficulty in exercising their authority, and their views were often disregarded."[22] This, then, was the situation in which the British found themselves as they began the desert campaigns. They had decentralized to such a degree that the artillery batteries were attached to tank regiments for close fire, and they made no attempt to mass fires.[23] Most British officers felt that it would be valuable to mass fires, but they did not believe it was practical or necessary with their system.[24]

In the battle of Salum (Operation BATTLEAXE), 15-17 June 1941, the British had decentralized their artillery to the point

that they could not mass fires due primarily because of the large distances between artillery positions. They had attached their artillery to supported units down to the brigade group (US regimental combat-team) level. This caused some very serious problems, as pointed out below:

> American artillery observers with the British army in their Libyan desert campaigns repeatedly pointed out the British decentralized approach to artillery support, i.e., attaching the units to brigades or regiments, which moved and fought in mutually insuppotrable columns. When questioned about this practice, British commanders spoke of the urgency of rapid response - which was deemed better in an attached status - as being more important than concentrated fire. By the autumn of 1941, the lessons of the desert seemed to indicate that decentralization was necessary. As a British military historian wrote of the period: "Most commanders were defeated by the actual command problem of moving, deploying, and regrouping artillery, and took refuge in decentralization."[25]

As the desert campaigns progressed, the British paid a very high price in terms of human lives to learn the lesson of the importance of being able to mass their artillery fires. The ineffective use of artillery proved to be one of the most serious deficiencies for their army. Their inability to mass fires at the decisive point was at the very center of the problem. An interesting insight as to the "why" of this problem is provided in the following statement:

> In examining the tactics of the British in desert warfare...the crux of the problem was not in the employment of artillery; it was the British inclination to be `brigade-minded' rather than `division-minded' as was Rommel. The artillery, having the mission of providing support to widely-separated brigades, was simply unable to bridge the distance involved and mass at a decisive point.[26]

By 1943, the British had learned many lessons about desert warfare and had made many changes to correct their problems. The US Army sent many observers to North Africa to determine what changes the British had made so that US forces could benefit from their experiences. LTC William S. Myrick, Jr., an observer from U.S. Army Ground Forces provided this insight in his report in January 1943:

> The British conception of the employment of artillery has been somewhat changed [since 1941], both by the new organization of divisions and the lessons learned in the MIDDLE EAST. Although the role of the division and the armored division have common characteristics, they are designed for different roles. In general, the role of the division is to make the opportunity, and the role of the armored division is to exploit it...Artillery of the division in attack will, whenever possible, be concentrated under the C.R.A. [Commander Royal Artillery] and controlled by him throughout the attack.[27]

The British appeared to be moving towards combined arms operations and centralized control of artillery for desert operations.

In another observers' report, also in January 1943, COL J.M. Reynolds and LTC S. Roth of the U.S. Army Ground Forces provided the following:

> The division artillery has often in the past been employed on fronts too wide to facilitate centralized control. Many commanders feel that the use of brigade groups, corresponding to our combat teams, has cost the British dearly. The tendency now is toward centralization. In all the reports on recent experiences in the western desert, emphasis has been placed upon the necessity for centralized control of artillery. They are all in agreement that control should be centralized under the highest headquarters possible, usually the corps and never below the

> division...the corps artillery commander should do more than coordinate the artillery, he should issue the actual orders for its employment. The British are convinced of the necessity for the massing of artillery fires. They largely attribute their great success at El Alamein to the thorough preparation and massing of artillery fires. It was the first time that the British had attempted a coordinated infantry-artillery attack on a large scale in the Western Desert.[28]

To reinforce the observation about the success at El Alamein, Correlli Barnett in The Desert Generals wrote that, "At Dorman-Smith's suggestion, Auchinleck had now all the artillery regrouped under his own command as an equivalent of Rommel's army artillery. For the first time in the desert since O'Connor the British were to defend and to attack under the cover of mass gunfire."[29] The British had learned from their mistakes and made the necessary changes to their artillery to be able to mass their fires effectively.

The British went into the desert campaigns of WW II with their artillery decentralized to provide rapid response and close support fires, and in doing so they gave up the capability to mass fires. Their system lost the flexibility necessary to influence the battle by the delivery of fire power at the decisive point and time. They recognized the problem, and by 1943 they changed to centralized artillery control and relied heavily on massed fires. The lesson to be remembered is that the artillery must maintain the capability and flexibility to rapidly mass fires at the decisive point as determined by the maneuver force commander. The British accomplished this through

centralized control of their artillery at the corps and division level.

The U.S. Army entered the North African theater (Operation TORCH) and the desert campaigns in November 1942 with much the same force structure as the British. The U.S. Army was in a period of doctrinal transition and was also incorporating many items of new and relatively untested equipment. The field artillery was decentralized with support down to the combat team level. The intent was to provide rapid response to close support missions. However, the structure lacked flexibility, and full advantage had not been made of technological advances, particularly in the areas of communications and transportation. Additionally, US forces lacked experience in applying their newly developed doctrine and structure on the field of combat. The first real test of these new concepts was at the battle of Kasserine Pass.[30]

The problem of adopting new maneuver doctrine and tactics was a tremendous challenge for commanders and staff officers alike. For the field artillery, the problem was made even more difficult due to the advent of mechanized and armor forces. It appears that the field artillery was perceived as no longer being the supplier of battlefield fire power. That role had become the property of the tank and airplane. Consequently, the artillery was searching for its place on the battlefield. Its assets had slipped from the control of the artillery force commander,

because it was felt that close support was more important than being able to mass the fires of a large number of tubes at one place at the same time. This proved to be an incorrect assumption.

The inability to mass fires at the division and corps level proved to be the greatest failure of the US field artillery at Kasserine Pass. Even though a type corps existed during the battle, there was no field artillery headquarters on the battlefield that could effect the control and coordination of artillery assets necessary to mass fires.[31] This failure, along with many others, led to a major reorganization of Army Ground Forces, which affected not only the desert campaigns, but also the conduct of the war on the Continent and the way the field artillery is structured today.

In July 1943, GEN Lesley J. McNair, Chief of the U.S. Army Ground Forces, announced a major reorganization of the force. Of particular interest was the reorganization of field artillery in order to give it greater flexibility. Some important aspects of this reorganization were that the field artillery brigades and regiments were replaced with a corps artillery headquarters, and a field artillery group which could control a variable number of battalions was established. The corps artillery commander replaced both the artillery brigade commander and the chief of artillery staff officer. This reorganization increased the ratio of artillery to armor by reducing the tank strength of the armor

divisions. Additionally, the artillery battalion was established as the lowest self-sustaining artillery unit, as opposed to the regiment.[32] This reorganization was designed to give the artillery more flexibility for employment through centralized control, which was a direct result of the lessons learned in desert operations.

The field artillery must be able to provide adequate fire support to influence the battle at the decisive point and time. In WW II, that fire support came from the corps artillery in the form of heavier caliber weapons of field artillery groups. Desert operations dictate flexibility and the requirement to be able to rapidly mass surprise fires, and yet the need for responsive close support fires still exists. What was learned about field artillery operations from WW II desert combat is described in the following statement:

> ...maximum feasible centralized control of a command's artillery assets is just as valid a tenet today as it was in 1943. A number of factors such as great distance separation, rapidity of action, and employment of independent small forces can militate against centralization. Nonetheless, commensurate with the equally important requirement to provide immediately responsive fire support for committed units, centralization must always be strived for.[33]

Control of British artillery was initially decentralized to provide immediately responsive close support fires, but combat experience showed that this practice did not allow the flexibility to be able to mass fires. It was not until they centralized control of their artillery, which allowed them to

mass fires, that they experienced any degree of success in the application of fire power at the decisive point and time. However, in doing so they were forced to sacrifice fast fire support. The U.S. Army artillery did not appear to work much better, because they lacked a control element at the corps headquarters that could coordinate the massing of artillery fires. World War II desert experience demonstrated that due to the wide range of action, artillery was rarely able to be mutually supporting and was unable to mass fires because of the limits of the range fans. There was a demonstrated need for fast (close support) fires and for massed fires. It was obvious that a solution at either extreme, centralized to mass fires or decentralized for fast fires, was *not* the solution. The tactical tailoring of field artillery units for desert operations requires the capability to provide both close support and massed fires.

SECTION V

ORGANIZING FIELD ARTILLERY FOR DESERT OPERATIONS

There are a number of battlefield conditions that existed on the desert battlefields of WW II that have application on today's desert battlefield. The range of artillery weapons is still a limiting factor in operations. Even though weapon ranges have increased tremendously, the speed and mobility of mechanized forces and the range of communications equipment have also increased which, in effect, serve to offset any advantages that the increase in weapon range may provide. Artillery units will still be out of mutually supporting range, which means that the problem of not being able to rapidly mass fires by changes in standard tactical missions still exists.

The desert battlefield is still characterized by fast moving combat operations and rapid changes from offensive to defensive situations. The critical requirement to provide responsive close support fires may even be more crucial today. Artillery units with direct support missions must be able to accompany maneuver units, and there also must be artillery available to mass fires. The fast versus massed problem is still present. The characteristics of successful desert operations such as speed, mobility, fluid tactical situations and the meshing of offensive and defensive actions require that some artillery be responsive

to the close support mission and some to the massed fire mission.

It has been pointed out that in organizing field artillery for combat, there are a number of factors which must be taken into account. Among these considerations are the range of the weapons available balanced against the space which defines the tactical battlefield, the relative immobility of the artillery weapons systems versus the supported maneuver weapons, the type, number and caliber of artillery weapons available, and finally, the intended structure of the battle, whether it be offensively or defensively oriented. The range of artillery weapons has been shown to be the most limiting factor for desert operations in the past.

Given the task to organize field artillery units to support heavy divisions conducting desert operations, based on previous interpretations of field artillery doctrine, the first question an artilleryman would ask concerns the nature of the anticipated battle: is it to be offensively or defensively oriented? Desert operations, because of the rapid action and the offensively-oriented nature of the envisioned battle, would seem to require a task organization that would favor close fire support to most readily influence combat action. Therefore, the most acceptable organization for combat would appear to be one in which control of the artillery is decentralized. By decentralizing control, we are giving the subordinate artillery commander the capability to be more responsive to the fire

support needs of the maneuver commanders by allowing close support field artillery fires to have the greatest impact on changing tactical situations. This is done by tactically tailoring the force in assigning the missions of direct support, reinforcing or, in some instances, general support-reinforcing. This organization allows the artillery to be most responsive to the needs of the supported maneuver brigade commander.

This is the traditional approach that most artillerymen would present as a solution according to current doctrine for an offensive situation as found in the desert. But this presents a problem, because if control of artillery is decentralized, the advantage of massed fires is lost. This would also mean that the lessons the US and British Armies learned from their World War II experience in desert operations are no longer valid.

This is the essence of the field artillery problem currently facing us in organizing our artillery forces to support desert operations. On the one hand, experiences from history show that artillery is most effective in desert operations when control is centralized, allowing units to rapidly mass artillery fires at the decisive point and the time. Yet on the other hand, interpretation of current field artillery doctrine seems to dictate that in offensive situations, such as are found in desert operations, control is to be decentralized. This dichotomy becomes further confused by the following statement about desert operations from FM 6-20, Fire Support in Combined Arms

Operations: "Desert battles tend to be more centralized..."[35] If this is true, the traditional solution of centralization in the defense and decentralization in the offense becomes questionable.

Furthermore, desert operations require that close support fires be readily available to maneuver units as they conduct wide ranging, fast paced operations. Additionally, there must be sufficient artillery available to the division commander to provide massed fires. Consequently, there needs to be adequate artillery available which can be decentralized to provide fast fires and centralized to provide massed fires.

In desert operations, maneuver brigades are going to require close supporting artillery fires. The simplest solution to this problem would be to decentralize control of the divisional artillery battalions and place one battalion in direct support (DS) of each maneuver brigade. This solution does not differ from current doctrinal guidance. However, eventually, the ideal solution may be to have the direct support battalion organic, as opposed to habitually associated, as current doctrine suggests, to the maneuver brigade. (It would appear that the Soviets are ahead of us in this area, because all maneuver regiments in their tank and motorized rifle divisions have organic artillery battalions.) This would allow the current divisional artillery headquarters to be structured as an operational and intelligence headquarters with minimal staffing only. This would provide for the critical close support mission to be accomplished and also

would allow the division artillery commander to better fulfill his mission as the division commander's fire support coordinator.

In order to assist the division commander in influencing the battle at the decisive point and time through fire power, the fires of the divisional artillery battalions will need to be augmented with fire support from the battalions of the corps artillery. The augmentation of the direct support battalions could be accomplished by the attachment to the division of one (or perhaps more) of the corps artillery brigades. The attachment of a field artillery brigade from the corps artillery, as opposed to the assignment of a standard artillery mission, gives the division commander greater flexibility in the tactical tailoring of units to best support his concept of the operation.

Specifically, to further illustrate this point, let us consider this hypothetical example. A field artillery brigade with five self-propelled (mechanized) artillery battalions is attached to a division. This brigade consists of two 155mm battalions, two 203mm (8-inch) battalions, and one multiple launch rocket system (MLRS) battalion. In order to support the main effort, or the anticipated most critical point of the division's operation, one of the 155mm battalions could be assigned the mission of reinforcing the fires of the direct support battalion of the maneuver brigade in the main effort or most critical sector. To provide the flexibility which is required in desert operations, the other 155mm battalion and one

of the 203mm battalions would be assigned the mission of general support or general support-reinforcing, depending on the tactical situation. The remaining 203mm battalion and the MLRS battalion would be held in general support so the commander could immediately influence the critical areas. The divisional MLRS battery could be attached to the corps MLRS battalion for more effective mission response. Initially, the MLRS units would be oriented to the counterbattery mission to take full advantage of their inherent range, speed and mobility when the enemy counterbattery threat becomes most significant. This would allow for the positioning of the cannon artillery units to not only be protected from their inherent vulnerability to enemy counterbattery fires but also to be able to react by immediate movement to take advantage of offensive opportunities.

This solution provides rapid response for close support fires by the field artillery battalions organic to the maneuver brigades, while retaining the flexibility for the division commander to influence the battle through the fires of the battalions of the attached field artillery brigade. This approach differs somewhat from the traditional solution, because control of the corps artillery units is more centralized than would be expected in an offensive situation. Desert combat demands that artillery is organized so that some artillery is decentralized to provide fast fires to maneuver units, and some is centralized to remain flexible enough to be able to rapidly

react to quickly changing situations and to mass fires at the decisive point and time. The most effective means to acquire this flexibility is to decentralize control of division artillery assets and to maintain centralized control at the division level of the artillery from the corps artillery brigades. Secondly, in desert operations, units move rapidly from offensive to defensive situations, which requires artillery assets to be organized to support both concepts. The meshing of offensive and defensive operations exemplified by the AirLand Battle concept outlined in Field Manual 100-5, Operations, makes the separation of combat operations into offensive or defensive operations invalid.

The nature of the battlefield is too fluid to be organized to support just one or the other concept. Using a sports metaphor, desert operations are more like a soccer game in which the teams are organized to move rapidly from offense to defense and are capable of playing both simultaneously. This idea is contrasted with the way U.S. units are commonly organized, as if they were playing a football game with two teams, an offense and defense. The disadvantage of the football orientation is that in desert operations units will not have the time to realign their assets as they quickly move from offensive to defensive situations. Centralized control of artillery provides the flexibility to react to rapidly changing situations and allows the commander to apply the combat power that fire support gives him at the decisive point and time to influence the battle.

SECTION VI

LESSONS LEARNED AND CONCLUSION

Desert operations appear to be ideally suited to the application of AirLand Battle doctrine. The desert also appears to be a good laboratory in which to examine various facets of AirLand Battle doctrine. Since there are many similarities between desert warfare and expected warfare on the AirLand Battlefield, what works in desert operations should also work on the AirLand Battlefield. Field artillery units must be organized for combat so that they are flexible enough to provide mass fires as well as massed fires and to be readily available to take advantage of any situation that is presented on the battlefield. Responsiveness is provided by decentralization of control, and flexibility is provided by the centralization of control of artillery.

The U.S. Army field artillery learned many valuable lessons in previous desert campaigns which have application today. One of the most important of these is the principle of the concentration of combat power through the massing of surprise fires at the decisive point. This is done by having the degree of centralized control necessary to accomplish this rapid concentration. This presents the artilleryman with a critical problem in that the need for close support must be balanced with

the requirement to be able to rapidly mass fires. The field artilleryman must meet the need for close support for maneuver actions while at the same time be able to mass sufficient fire power to rapidly inf'uence the tactical situation in support of the commander's concept of operation and his intent. This trade-off between close support and massed fires is the challenge of the field artillery, not only for desert operations, but also for any battlefield situation.

One of the problems in organizing field artillery for desert combat operations may very well be centered in the application of the general rule of centralizing control of artillery in defensive operations and decentralizing control in offensive situations. Desert operations may require field artillerymen to apply solutions that do not, on the surface, appear to be in concert with current practices of organization for combat. The speed and violence of desert warfare and the dynamics of this type of battlefield will not allow commanders to organize field artillery based on offensive and defensive missions as the general rule seems to suggest. Most probably, the organization that is found at the beginning of the desert battle is the one that will be in place throughout the battle. Gone are the days of the structuring and tailoring of our artillery forces for specific battles or types of battles. Desert operations and AirLand Battle doctrine demand that field artillerymen retain the

flexibility to immediately take advantage of any opportunity presented to take the battle to the enemy.

Current field artillery doctrine adequately supports the organization of artillery units to support heavy divisions operating in a desert environment. The critical factors for desert operations appear to be the retention of enough flexibility to immediately mass sufficient fire power to influence the battle and to be able to provide responsive fires. Field artillery doctrinal concepts support the maintenance of maximum feasible centralized control and adequate support for committed units; however, difficulties arise in the application of current doctrinal concepts and the orientation on offensive or defensive actions. Desert operations require that enough artillery assets be made available to provide responsive close support fires and be flexible enough to provide massed fires. Meeting both requirements necessitates that more artillery assets be provided to the division than is currently envisioned. Centralized control provides the flexibility required to immediately focus the combat power of field artillery at the decisive point and time on the battlefield. Decentralized control provides responsive fires. There must be some of both available.

Field artillery tactics which emerged from the Anglo-American experience in the North African desert in WW II would appear to have application to artillery tactics on today's

AirLand Battlefield. The speed, violence and dynamic nature of that battlefield will not allow forces to be structured for specific types of actions. The nature of warfare will require a high degree of flexibility. Present operations, in particular, and future operations on the AirLand Battlefield, in general, demand some artillery support that is decentralized to provide responsive close support fires and some that is centralized to provide massed fires. Field artillery gains flexibility by centralizing control at the highest level that can readily influence battlefield actions. The application of artillery doctrine requires that field artillerymen realize that the battlefield is dynamic and not necessarily bound by the conventions of offensive and defensive actions. Once the dynamic nature of the AirLand Battlefield is understood, field artillery resources can then be organized for combat so that rapid response and sufficient flexibility is retained to respond to any combat situation.

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