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This study examines the required actions of the brigade command post elements for command and control in battle, in Central Europe in 1985. For 1985, this thesis used the newly conceived restructured heavy division and the tactics being developed for it to defeat the Soviet forces it would face in Central Europe. A narrative of this possible 1985 battle emphasizes the actions required by the command post elements.

The thesis concludes that the brigade requires three distinct and semi-independent command post elements. A command group is required to position the commander where he is best able to communicate with his commanders and focus the combat power of the brigade. A brigade main command post maintains communications with the division, keeps the commander informed of the overall enemy and friendly situation, and does short term planning for the brigade. A displacement team will insure continuity of command.

Each element of the command post requires the Tactical Control System. The TCS should be mounted in the Mechanized Infantry Combat Vehicle not a highly distinctive vehicle like today's command post carrier.

Major changes are required in the brigade command post of today if it is to survive on the 1985 battlefield.

A BRIGADE COMMAND POST

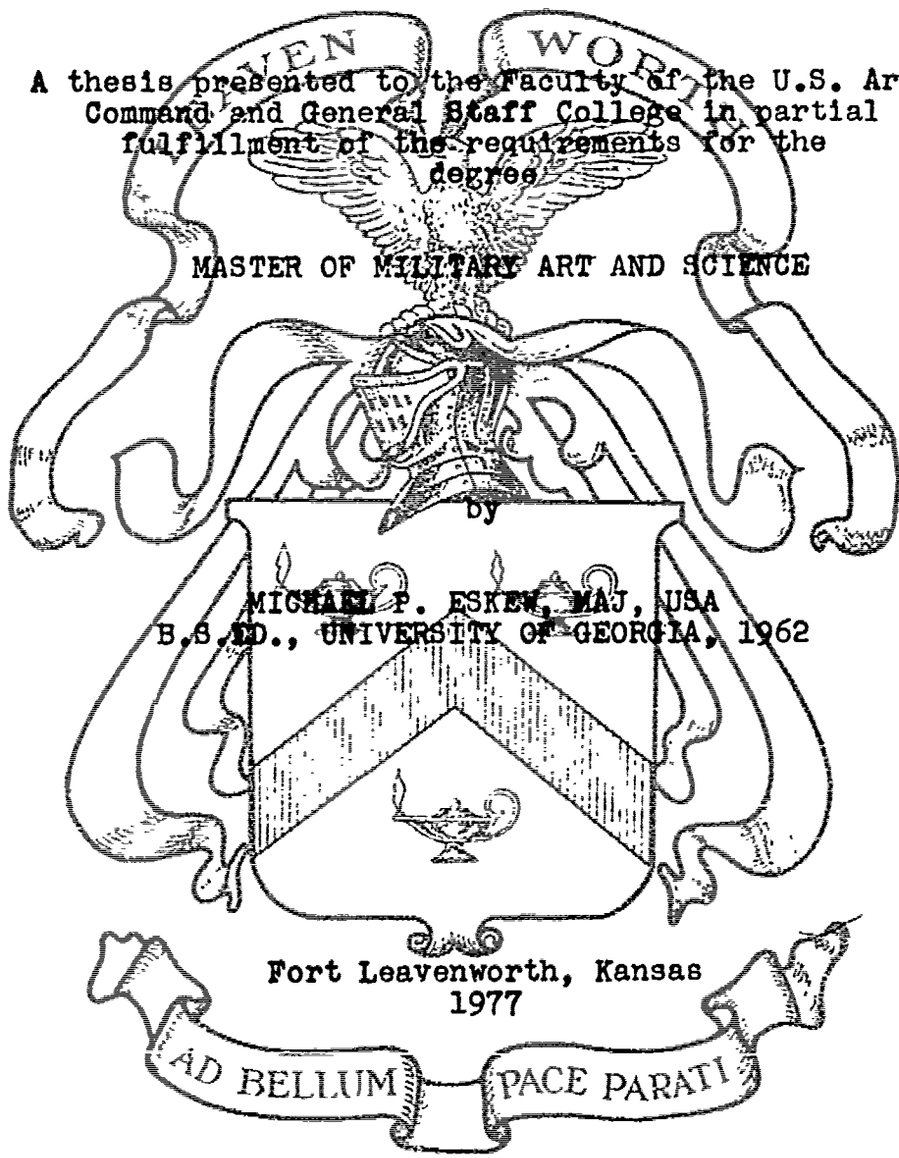
FOR THE 1985 ARMORED DIVISION

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

MICHAEL P. ESKEW, MAJ, USA
B.S.Ed., UNIVERSITY OF GEORGIA, 1962



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1977

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The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

The brigade command post of today is big and unwieldy. It physically covers almost a square kilometer and has an electronic signature of like proportions. Personnel and equipment are authorized for sustained operation from only one location. It requires large communications and working areas and a large staff to operate and maintain it. The brigade headquarters has little organic security and features unique vehicles and radio antennas. This command post will not survive on the 1985 battlefield.

For 1985, this thesis used the newly conceived restructured heavy division and the tactics being developed for it to defeat the Soviet forces it would face in Central Europe. A narrative of this possible 1985 battle emphasizes the actions required by the command post elements of the brigade in battle.

These command post elements will be prime targets for the Soviet attacker. He will employ accurate direction finding equipment to locate the brigade command post elements. He will use high power jammers to disrupt command post commucations and will direct firepower, ground and possibly airmobile forces against the command post elements.

To operate effectively in this threat environment, the brigade command post of 1985 must be significantly different

from the present command post.

The thesis concludes that the brigade requires three distinct and semi-independent command post elements. A command group is required to position the commander where he is best able to communicate with his commanders and focus the combat power of the brigade. A brigade main command post maintains communications with the division, keeps the commander informed of the overall enemy and friendly situation, and does short term planning for the brigade. A displacement team will insure continuity of command.

Each element of the command post requires the Tactical Control System (TCS), a potential technological breakthrough for command and control. TCS will allow the commander and staff to see the overall battle situation in a far more timely and comprehensive manner than is possible today.

The TCS should be mounted in the MICV not a highly distinctive vehicle like today's command post carrier.

Adopting and equipping the command post elements as proposed by this thesis will enhance the survivability and preserve command and control.

Major changes are required in the brigade command post if it is to survive on the 1985 battlefield.

ACKNOWLEDGEMENTS

I entered this project with firmness of purpose and clarity of goal. In the ensuing months the persistent encouragement and helpful push of my wife, Sniggy, made it's completion possible.

The editorial assistance of Major John E. Hildebrandt was invaluable. The guidance, direction, and at times application of Firepower and Shock Action from my armor advisor, LTC E. W. Dale, guided it's content and composition. The conclusions reached and recommendations made are my own.

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CHAPTER ONE

INTRODUCTION

The present army division, adopted in 1958 as the Reorganization Objective Army Division (ROAD) division, is undergoing a critical review by Department of the Army. The ROAD division organization may have been adequate for the 1958 Soviet threat, but will this organization be adequate for 1985? Probably not! The Chief of Staff of the Army, Gen Fred C. Weyand, has directed testing of a division organization, restructured for 1985, which is a clear alternative to the ROAD type division.[1] This division, hereafter referred to as the Heavy Division is radically different from the ROAD type division. It offers some dynamic challeges to the commanders of 1985.

The brigade was chosen as the element for examination in this study because it's commander and staff play such key roles on the battlefield of the future. The brigade is the crucial link between the combat resource provider, the division, and the fighter, the maneuver battalion. On the 1985 battlefield the brigade commander will see the battlefield 50 kilometers beyond his front.[2] This will greatly increase his ability to anticipate the enemy and defeat him with forces and firepower. The combat power available to him includes

assets he commands and those he receives from division. The personnel and equipment provided to him for controlling his brigade must be responsive, flexible, and be able to survive.

The current armored division consists of three brigade headquarters, six tank battalions and five mechanized battalions. There is a divisional Armored Cavalry squadron and an aviation company which provides division command and control helicopters.[3] (Figure 1)

In the heavy division there are three brigades, each with five assigned battalions.[4] (Figure 2) This division has greater artillery capability because of more observers and target designators as well as 40% more tubes.[5] (Figure 3) The engineers have been placed in a role of assisting our mobility and countering that of the enemy. Additionally, there is a chemical defense company organic to the division.[6] (Figure 4) The fifteen battalions of the heavy division are composed of nine tank battalions and six mechanized battalions. The air cavalry troop of the current divisional cavalry squadron has been removed. It, along with brigade and division artillery helicopter sections, are placed in the aviation battalion which also has an attack helicopter company. The cavalry squadron is to have 36 main battle tanks in lieu of the present 27 armored reconnaisnace assualt vehicles..

The current brigade is organized with a headquarters which follows the traditional four functional areas. It has the capability of providing operational control of up to five maneuver battalions.[7]

The brigade of the heavy division will be organized with a bifunctional staff of operations and intelligence on the one side and personnel and logistics on the other. For ground reconnaissance missions a scout platoon has been added. The brigade will normally have three tank and two mechanized battalions assigned. Figure five shows both the current and heavy division brigades.[8]

The brigade command post (CP) of the current division often had some 150 people and 55 vehicles in and around it. The physical layout of this CP covered a square kilometer. It's electronic signature was of the same proportions. It was extremely difficult to physically hide it and virtually impossible to hide it from enemy electronic warfare. Figure six is a sketch of a typical brigade CP's composition and arrangement.[9]

The present and proposed armor battalions, as the basic maneuver element of combat power, are shown at Figure 7.[10] The mechanized infantry battalions are not shown. For command and control purposes at brigade, their structure is the same with some differences in weapons systems and personnel to man them.

Noteworthy in a review of the battalions is the fact that the companies become smaller, single weapons system companies. Maintenance, mess, administration, and supply are consolidated at battalion and combat service support (CSS) is provided by the CSS company within the battalion. Indirect fire support is provided by six 81mm mortars in the headquarters company. The battalion has a separate TOW antitank guided missle company.

These streamline changes will allow the company commander to concentrate on fighting.

The brigade commander's problem is infinitely more complex. This thesis will examine his problem. What should be the configuration of the brigade command post for 1985? What equipment does it need and what personnel?

In order to make this determination the Soviet's capability to find the brigade CP and to bring combat power against it will be examined. When his attack begins, the offensive tactics he employs to find and destroy our CPs as a priority mission will be examined.

The ground tactical plan we will employ to destroy his attack and the assets the brigade commander will have available to him will be explained and wargammed in the study. By this means the questions of configuration and requirements will be answered and a recommendation made.

The assumptions of this study:

The heavy division will be utilized as the 1985 division.

The brigade will be a part of a forward deployed force in Europe.

Available assets will be those planned for 1985.

The Soviet threat against forces in Central Europe, projected for 1985, will be used.

This study will be confined to the operations/intelligence portion of the CP.

This study will not consider information published after 28 February, 1977.

Three definitions basic to this study are included here.

Appendix one is a glossary of terms used throughout the study.

> Command and control. The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of his mission.[11]
>
> Command Post. A unit's or subunit's headquarters where the commander and the staff perform their activities.[12]
>
> Zone. The area of responsibility assigned to a unit. Used in this paper for both offensive and defensive operations.

This study will focus on the problem of the brigade commander to employ perhaps one-half of the division. As will be shown in Chapter Two, the Soviets have excellent capabilities to locate our command posts and to place devestating power against them. Perhaps through additional study of variables beyond the scope of this study and increasing advances in knowledge and technology, the brigade CP will be developed so as to provide sustained, responsive, and flexible command and control on the 1985 battlefield.

ENDNOTES

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6 Ibid. p. I-1-59

7 Department of the Army. Headquarters and Headquarters Company Armored Division Brigade, TOE 17-42H. 30 November, 1970. p. 2.

8 Op. cit. Headquarters Training and Doctrine Command, p. I-1-38.

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11 Department of the Army. Dictionary. AR 310-25. June, 1972. p. 74.

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ARMORED DIVISION

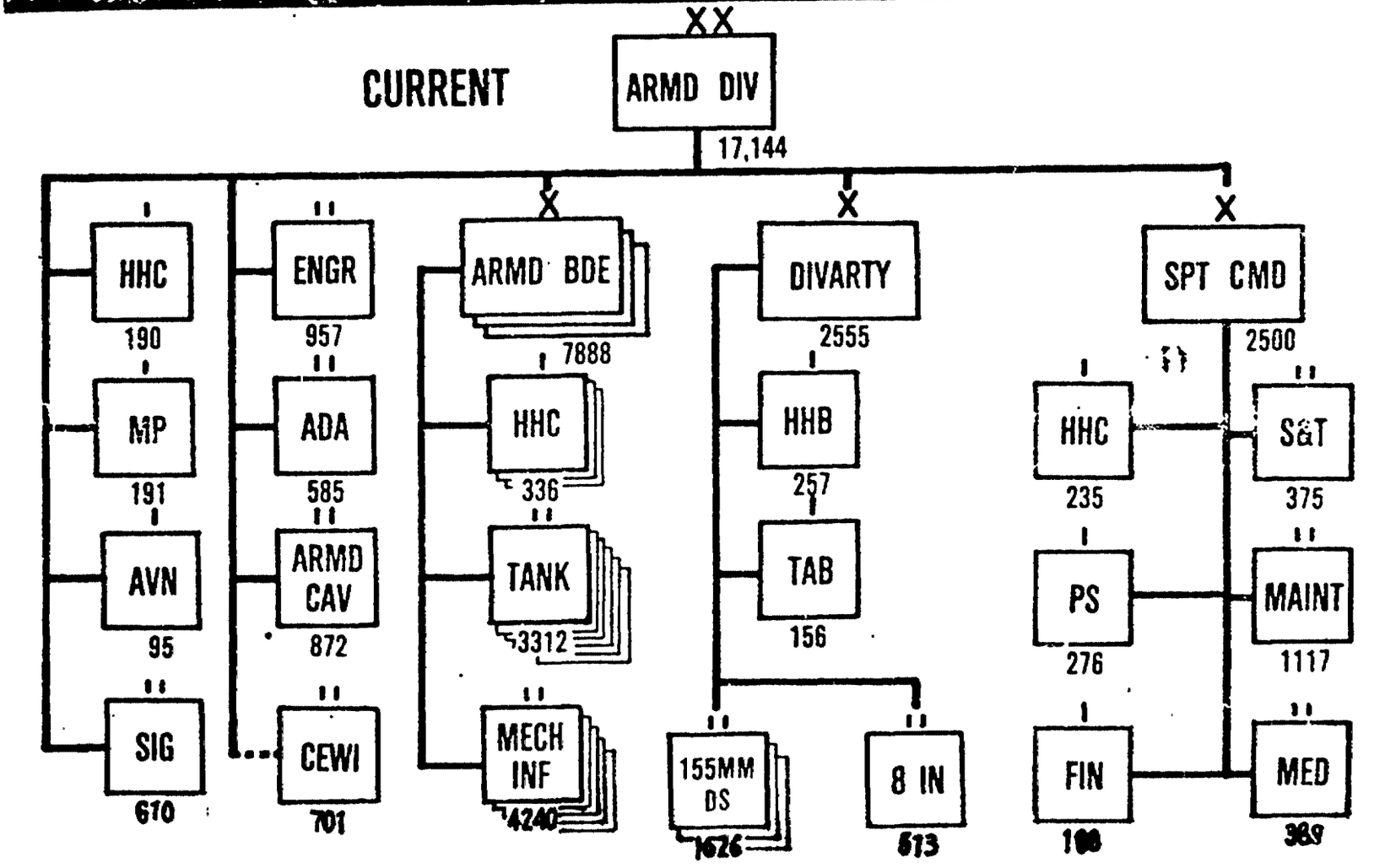
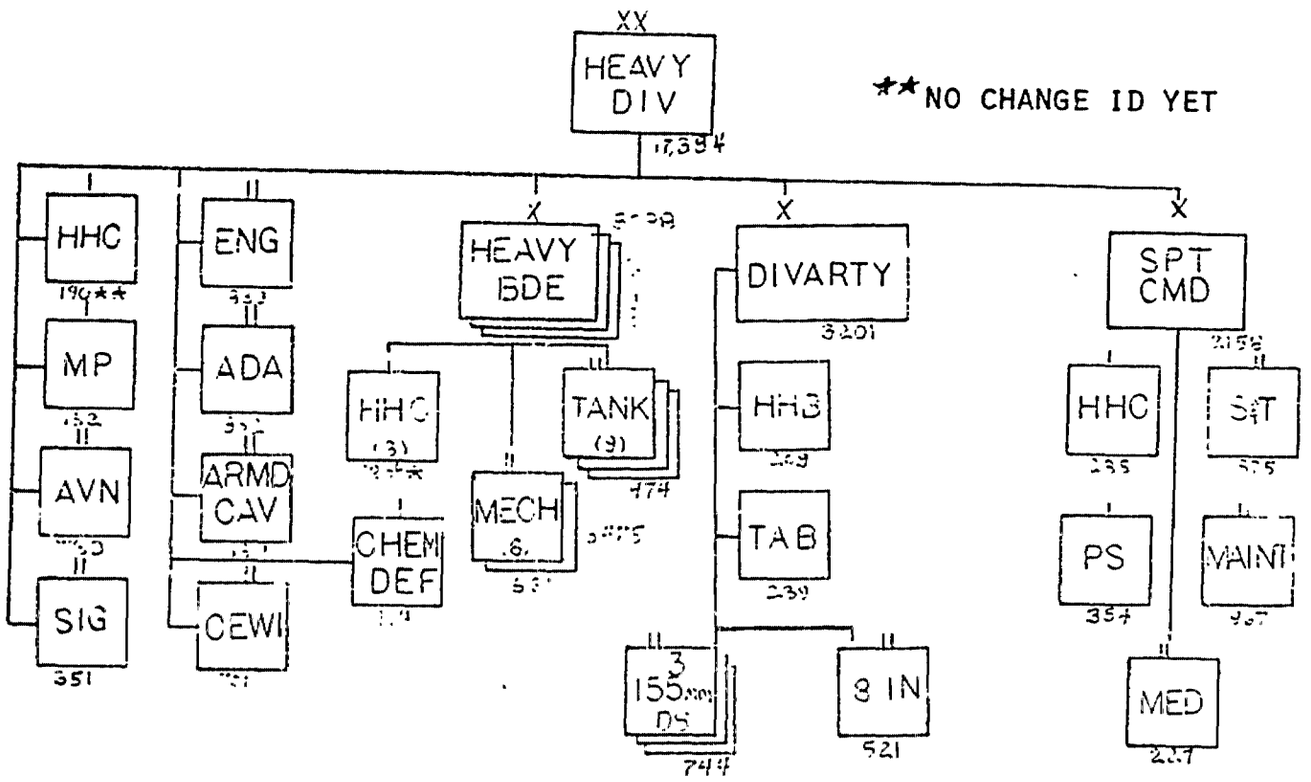


FIGURE 1

FIGURE 2

HEAVY DIVISION



NOTE: DIVISION AIR DEFENSE ARTILLERY APPROVED 11 NOVEMBER, 1976 BY CDR TRADOC.
IT HAS A GUN AND A MISSLE BATTALION, EACH ALSO HAS STINGER AIR DEFENSE WEAPONS

FIGURE 3

FIRE SUPPORT

CURRENT ORGANIZATION

** 3 DS 155MM BN - 18 TUBES EACH
** 1 GS 8" BN - 12 TUBES
** TARGET ACQUISITION BATTERY

ALTERNATIVE ORGANIZATION

** 3 DS 155 BN - 32 TUBES (4 BATTERY - 8 TUBES EACH)
** 1 GS 8" BN - 16 TUBES (4 BATTERY - 4 TUBES EACH)
** TARGET ACQUISITION BATTERY

--RPV
--TPQ 36/37 RADARS

** 07 COMMANDER (TAKES ONE ADC SPACE)
** GREATER FIREPOWER
** BETTER EXPLOITATION OF CLGP, DUAL PURPOSE ICM, SMOKE
** MORE OBSERVERS/DESIGNATORS
** 70% INCREASE IN TUBES FOR 25% PERSONNEL INCREASE

CHEMICAL DEFENSE COMPANY

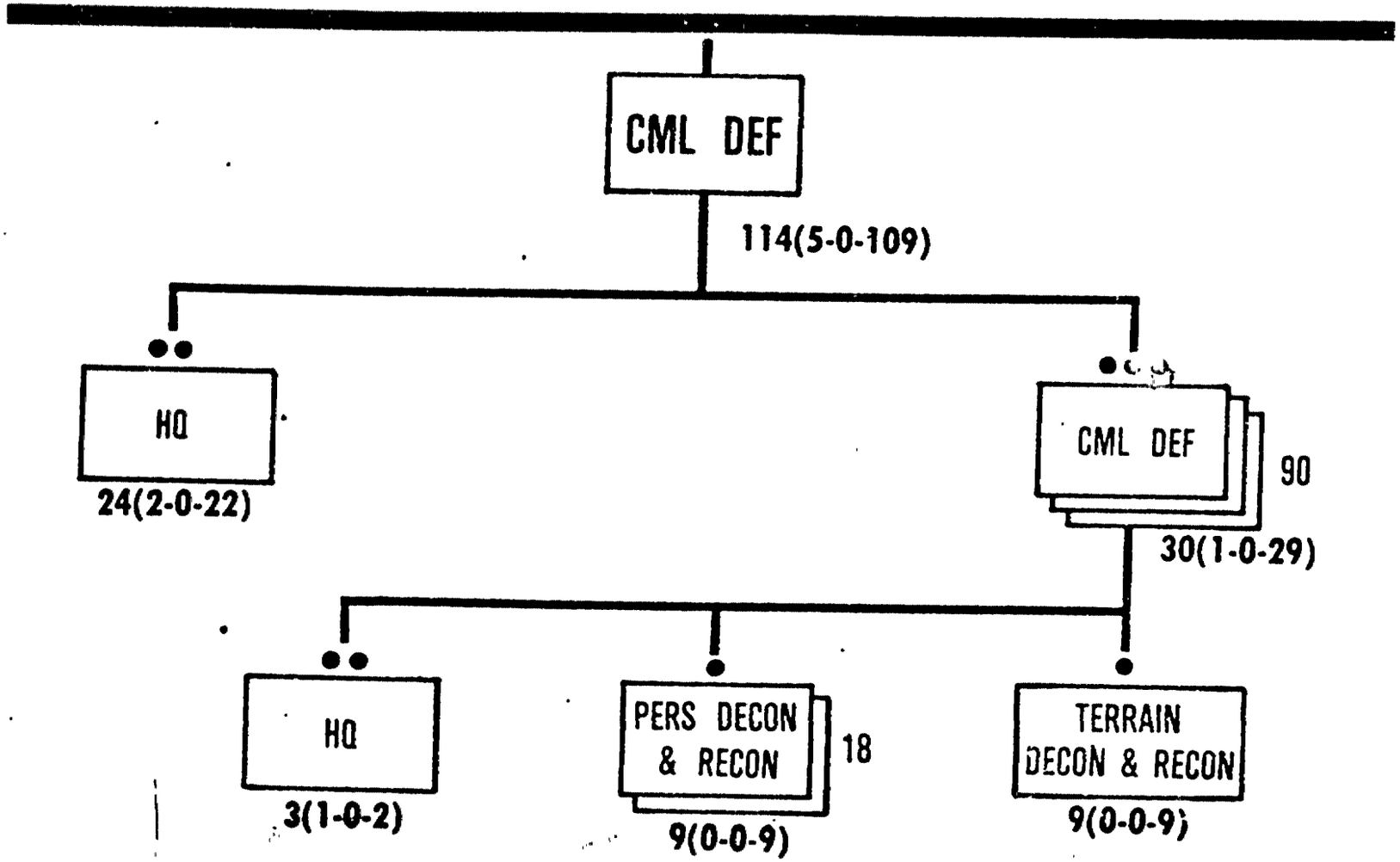


FIGURE 4

BRIGADES

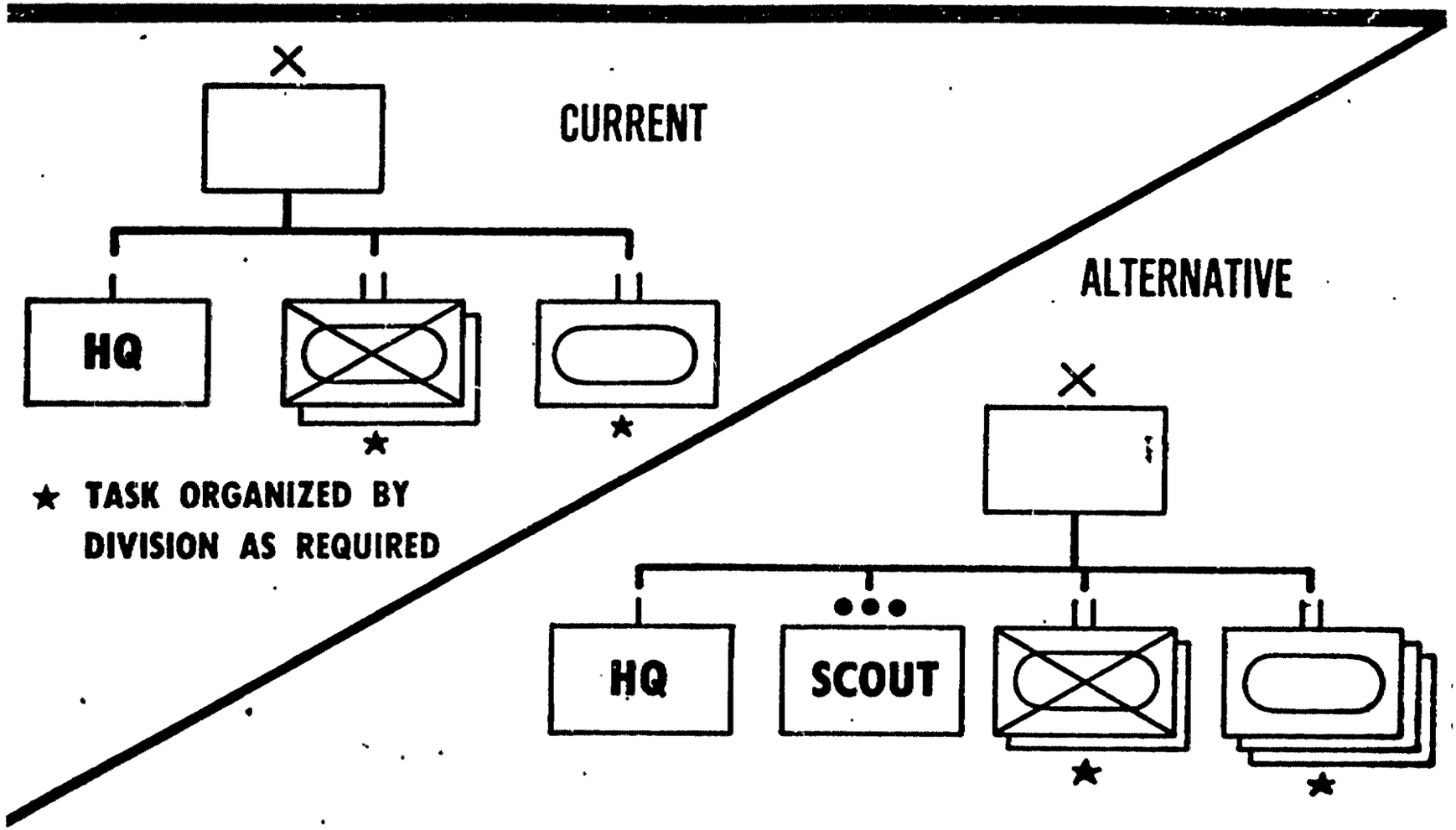
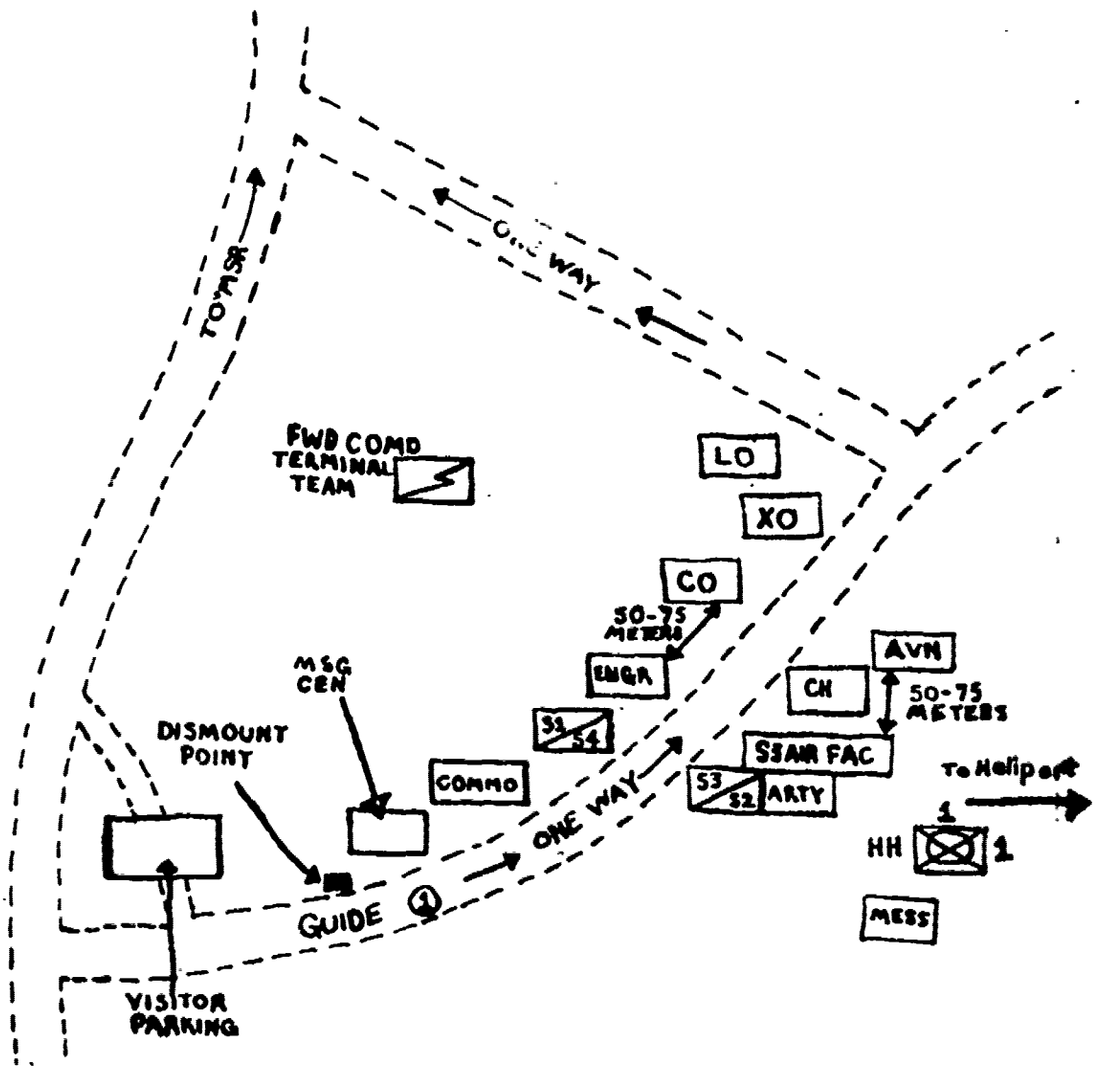


FIGURE 5

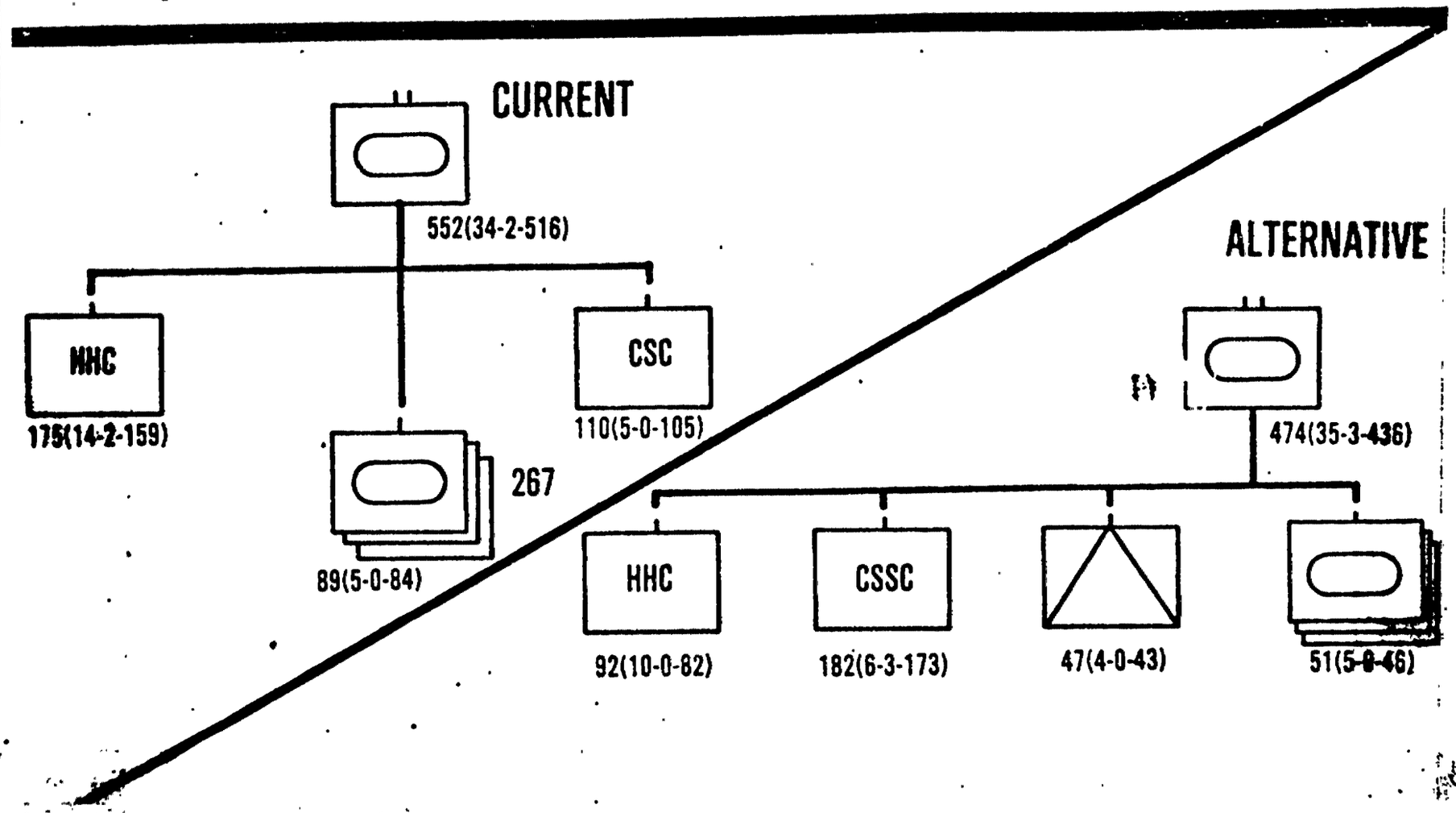


NOTES:

1. Only necessary traffic allowed beyond dismount point.
2. The communication platoon is located throughout CP area in its function.
3. The signal forward command terminal team is normally located continguous to the CP and provides VHF links to higher and adjacent headquarters.
4. Distances between elements, i.e., engineer, CO, comm, at least 50-75 meters.
5. Security elements mech rifle plat and command vehicle section will be deployed to provide local security.

FIGURE 6

TANK BATTALION



CHAPTER TWO

THE THREAT

The US brigade which is in the area of the Soviet main attack can expect to be attacked by at least one division and perhaps more than one division.

The attack portrayed in this chapter will be essentially the attack portrayed in the US Army Intelligence Threat Analysis Detachment report "Military Operations of the Soviet Army". It will be a nonuclear attack by a Soviet motorized rifle division formed for breakthrough by the Soviet forces. It will be assumed that the attack will be initially met by a covering force not under control of the brigade. The enemy will be attrited and deceived as to the true location of our defense. This action will force the Soviet commander to organize for breakthrough.

The capability of the Soviet type equipment and tactics to locate command posts, to jam the command and control communications, and to attack the facility with tactical air and artillery fire was well demonstrated during the 1973 Arab-Israeli War.

The 1973 War focused attention on the vulnerability of command and control facilities to interuption or destruction. Arab attack with ground or air delivered fire, accurately directed and adjusted with apparent ease, became a nemesis

of Israeli commanders.

> At 1630, 6 October immediately upon the start of hostilities the headquarters of the Israeli Barak Brigade was hit by air and artillery. The headquarters of the 7th Brigade was struck at the same time. The commander of the Barak Brigade, Col Ben Shaham, moved his advanced headquarters out immediately. Traveling light, Shoham's command group used only one half-t ack. He was accompanied by his signals officer and his intelligence officer. Wherever Shoham's command group moved and operated it's radios it was heavily attacked by artillery.[1]

In fact, the Soviets do have the equipment and techniques which provide them the capability to "systematically analyze our communications with signals intelligence long before the battle begins and during the battle...."[2] "The enemy may be expected to attempt the destruction or jamming of at least half of our command, control, and weapons electronic systems."[3]

During his attack theSoviet commander can be expected to employ signal intelligence "both in intelligence collection and as a means of tactical reconnaissance to include targeting for artillery forces and air strike."[4]

The Soviet army has long been a proponent of massive artillery fires. The siege at Stalingrad in World War II is probably the most well known example of the standard use of Soviet artillery. Soviet capability to mass 75 to 100 artillery tubes per kilometer to assist his breakthrough can easily be seen as a potent tool with which to disrupt command and control.

Factors which weigh heavily in assessment of the Soviet artillery threat for the 1985 battlefield is his tradition

of keeping older towed equipment and also introducing self-propelled artillery.

The self-propelled artillery is medium caliber (120mm-160mm) with capability to place accurate fire up to approximately 20 kilometers. The significance of this development is obvious when the vast number of massed tubes the Soviet commander has to employ for his breakthrough is considered. The capability to travel with and to be employed in close support of his habitual tank heavy force for attack is indeed potent.

In addition to the presently potent and developing artillery means of fire support, two additional areas are being expanded. Perhaps as a lesson learned from US use in Vietnam, tactical high performance aircraft and armed helicopters are being introduced into the Soviet arsenal for ground support missions.

Until recently, the Soviets have emphasized production of fighter-inceptors rather than surface attack aircraft. With the advent of the SU-19 "Fencer" the Soviets are placing emphasis on air to ground attack capability. This aircraft, called by former Chairman of the Joint Chiefs of Staff, Admiral Thomas H. Moorer, "the first Soviet fighter aircraft with true ground capabilities"[5] and the modification of older model Soviet fighter aircraft to improve their surface attack capability[6] has added a relatively new dimension to Soviet airpower.

For fire support, a development equally as profound as

the addition of tactical ground support aircraft is the advent of the Soviet armed helicopter. "The Mi-24 'Hind' is the most heavily armed attack helicopter in the world and is capable of carrying cannon, rockets, bombs, and antitank missiles."[7]

When considering these developments the Soviet tradition of retaining in active use those items of equipment such as towed artillery for which a newer and more advanced model has been fielded must be remembered. The 1985 battlefield commander's problems are increasing.

Another source of disruptive and destructive influence on the 1985 commander will be Desant. "The threat concept for achieving mass inside enemy held areas, at the same time economizing the combat forces is termed Desant."[8] What this means is that the attack to the front of the brigade will continue unrelenting while other trained forces conduct coordinated attacks in rear areas. Included are organized military airborne, airmobile forces, and civilian partisans. Projection of Desant forces up to 320 kilometers beyond the front lines is a consideration within the scope of the Soviet Front commander.[9]

Dismounted operations by organized military units are doctrinally planned using troops from motorized rifle units. Sufficient helicopters are available to the division to lift battalion sized ground forces. "Seven airborne divisions are know to exist."[10] The airborne divisions have the capability to be parachuted or airlanded in their objective area. High

on the Soviet priority list for parachute or heliborne operations is the destruction of command and control facilities on the battlefield.[11]

The coordination of the Desant forces' attack with the attack of the Soviet motorized rifle division presents a grave threat to command and control.

The Soviet attack will likely be preceded by a heavy artillery preparation. The large number of artillery tubes previously mentioned will have their fires augmented by rockets and perhaps missles. The mission of the preparatory fires will be to place massive barrages on our defensive positions to disorganize command and control, disrupt fire control, and to suppress our direct and indirect fire weapons in order to create a soft spot for breakthrough. As the Soviet commander progresses he will attempt to displace his artillery to cover his advance by continually laying a heavy volume of fire in front of his attacking forces. This technique has been characterized as a "rolling barrage" of artillery fire.

At the point of his breakthrough the motorized rifle division commander will attempt to narrow his attack to a width of five to eight kilometers. His mission is to breakthrough our defenses to include brigade and division command posts, destroy our division artillery and to continue the attack against our corps reserves. His objective is to carry the battle to our rear area rather than seizing and consolidating terrain objectives. His emphasis will be on speed. The surprise which he hopes to achieve, his speed of advance,

and massive air and artillery fires will provide protection of his flanks. Any bypassed resistance will be dealt with by follow on forces.

To accomplish hisobjectives the motorized rifle division commander will normally organize so as to have "two motorized rifle regiments, each reinforced with a tank battalion and an antitank company in the first echelon; one reinforced motorized rifle regiment in the second echelon; one tank regiment minus battalions attached to the first echelon in reserve."[12] Once the first echelon has moved as far as our division artillery positions, the second echelon can be committed to widen the breach, destroy bypassed resistance, or continue the attack to exploit the division objective which may be as deep as 50 kilometers. If the second echelon is so committed, the first echelon regroups and continues the advance as the new second echelon or prepares for other missions such as counterattack or assumption of the division's primary mission.

The motorized rifle division commander will have available for the attack some 265 tanks, sufficient infantry vehicles for his motorized rifle troops and that combat support previously mentioned in this chapter. Figure 8 shows the organization of the motorized rifle division.[13]

The defending US brigade will be organized as outlined in Chapter One. The manner in which the brigade commander will organize his defense to destroy the enemy, his objectives and ground tactical plan will be outlined in Chapter Three.

ENDNOTES

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2 Training and Doctrine Command, Deputy Chief of Staff for Operations Readiness and Intelligence, "Electronic Warfare The 4th Dimension of Army Combat Power," Threat Monograph (Fort Monroe, Va., July, 1976), pp. 6-7.

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12 Ibid. p. 109.

13 Ibid. p. 103.

FIGURE 1

CHAPTER THREE

THE GROUND TACTICAL PLAN

This chapter will describe the ground tactical plan the brigade will employ to destroy the enemy attack. The conceptual defense is based on study of RDOM 71-100, the Restructured Division Operations Manual.

In order to counter the large number of highly mobile forces and the lethal nature of the enemy attack, a new defensive concept is being developed. This concept requires detailed intelligence in order to focus on the enemy attack, to concentrate the brigade's forces at the correct spot, and to make maximum use of mobility and firepower.

Chapter One outlined the numbers of forces we will be able to employ. The division will have to defend a zone 50 to 60 kilometers in width. In order to defend on this front the division will use all three brigades forward, rather than keeping a brigade in reserve.

Recognizing the mobility and firepower of the attacker and the ability of our divisions and brigades to defend, one of the principle features of the developing doctrine is to plan and fight the defense in depth. In previous defensive concepts we have attempted to conduct a rigid defense with emphasis on allowing little or no penetration of our established defensive line. In the emerging concept, defense in

FIGURE 2

depth, brigades could expect to conduct the battle in a zone that was some 20 kilometers deep. The division would plan for another 25 kilometers behind the brigades for it's division support area.[1] A sketch of the battlefield showing brigade and division support area is at Figure nine. On such a battlefield certain prerequisities must be met in order for us to win. Army doctrine states that four such prerequisites make up the battlefield dynamics:

> 1. Adequate forces and weapons must be concentrated at the critical times and places. The combination is combat power.
>
> 2. The battle must be controlled and directed so that maximum effect of fire and maneuver is concentrated at decisive locations.
>
> 3. The battle must be fought using cover, concealment, suppression and combined arms teamwork to maximize the effectiveness of our weapons and to minimize the effectiveness of enemy weapons.
>
> 4. Our teams and crews must be trained to use the maximum capabilities of their weapons[2]

The first step in winning is seeing the battlefield. The commander requires intelligence to concentrate combat power at the critical places and times.[3]

As outlined in Chapter Two, the covering force is operating in front of the brigade and under the control of the division commander. It provides him on-the-ground information to assist in concentrating forces while deceiving the enemy of the location of our defensive positions. While the covering force is the principal on-the-ground source of information of enemy intentions, as shown at Figure two, other divisional organizational resources are available. Among these is the

combat electronic warfare intelligence (CEWI) battalion which can perform the vital functions of electronic information gathering and targeting outlined in Chapter two. The division also has information available from corps and from the Air Force and other services operating in the area.

Once the division commander has seen the battle clearly enough to know where to concentrate forces, he allocates resources to the brigade commander who controls and directs the battle. The assets available to the brigade commander will be examined in Chapter four. The division commander continually watches the progress of the battle to ensure that he concentrates the proper forces at the proper place, at the proper time, with the proper resources.

The brigade commander must also have a clear understanding of the enemy intentions in order to control and direct the battle. As indicated above, the brigades zone will be as much as 20 to 25 kilometers wide and perhaps 20 kilometers deep. The brigade commander organizes his assigned forces and any additional forces he has been given to fight as combined arms units. He fits these forces to the terrain in his defensive zone to insure that he is making maximum use of the ground to hide and protect his operating systems while forcing the enemy into areas where his weapons systems may be suppressed and his forces destroyed.

Although the division commander and his intelligence staff will give the brigade all the information they have pertaining to his zone, the brigade commander will gather infor-

mation from his resources. As indicated in Chapter one, he has a scout platoon in his headquarters company for reconnaissance missions. The covering force to his front will provide a liasion party from which he will get information pertaining to the enemy attack. His own units, preparing their defenses, will also provide information.

As the battle progresses, the brigade commander continues his assessment of enemy intentions. He controls the battle. He accomplishes this by:

a. Concentrating through maneuver of his troops (who have been well trained in the capability of their weapons)

b. Application of firepower and combat support resources

c. Directing the battle

Chapter four will contain, in addition to the previously mentioned combat assets, those command and control assets available to the brigade commander.

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ENDNOTES

1 Headquarters U. S. Army Combined Arms Center, "Division and Brigade Operations Restructured Division Operations Manual," RDOM 71-100 Test, (Fort Leavenworth, Ks., December, 1976). p. 4-47A.

2. Department of the Army. Operations, FM 100-5. December, 1976). p. 3-3.

3 Ibid. p. 7-2.

A TYPE SOVIET MOTORIZED RIFLE DIVISION

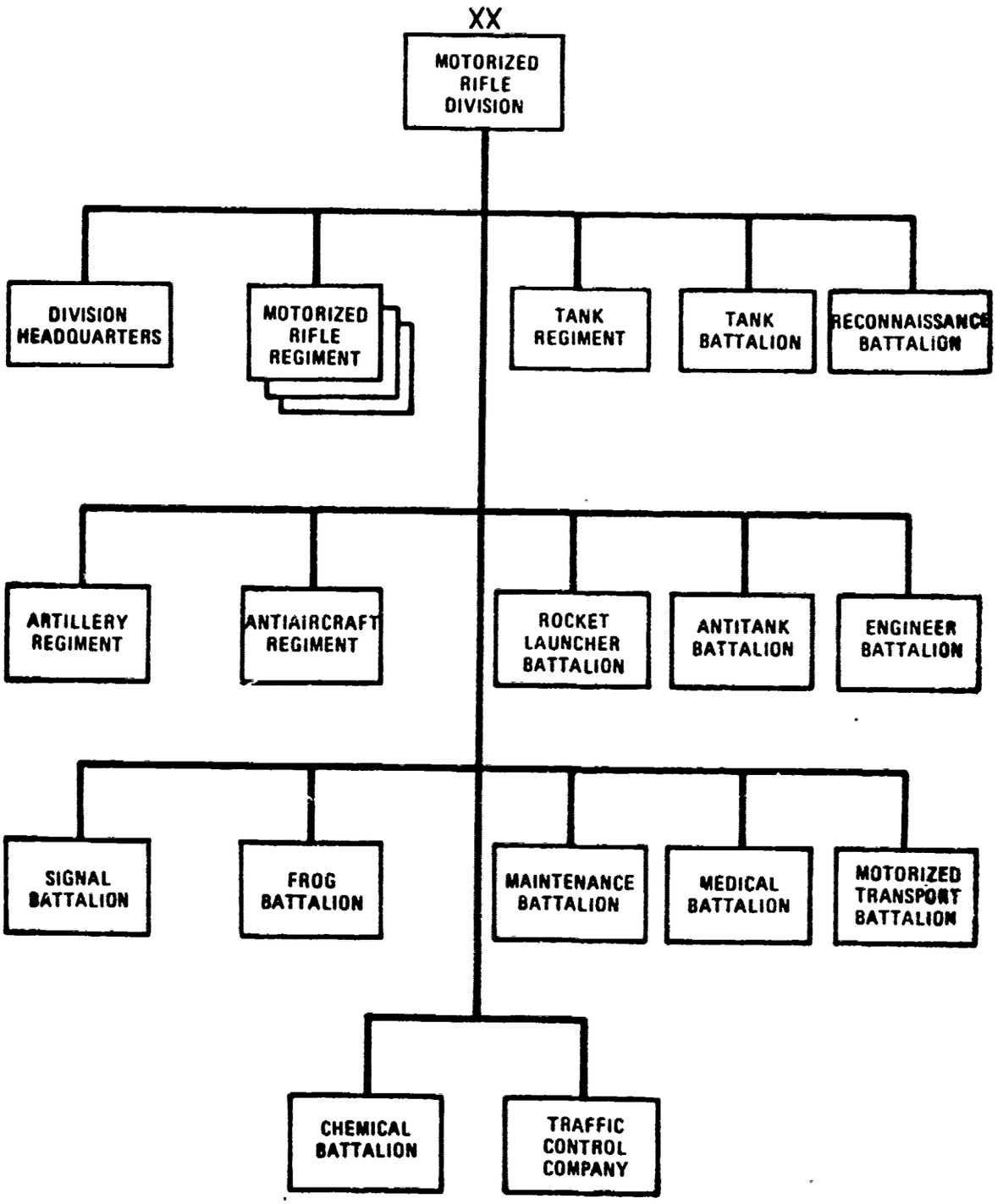

FIGURE 8

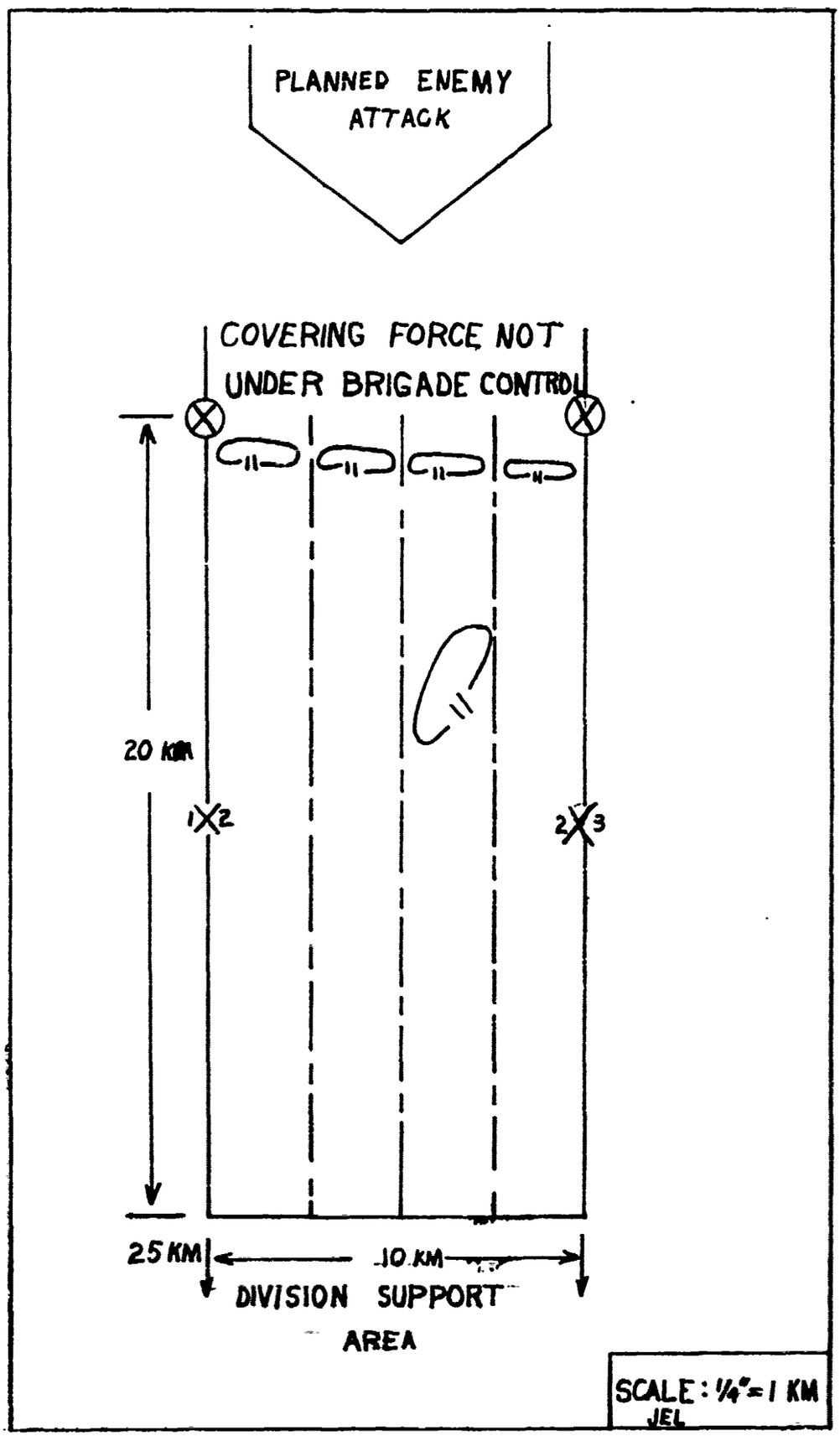
PLANNED ENEMY ATTACK
COVERING FORCE NOT UNDER BRIGADE CONTROL
20 KM
1X2
2X3
25 KM
10 KM
DIVISION SUPPORT AREA
SCALE: 1/4" = 1 KM
JEL

FIGURE 9

CHAPTER FOUR

AVAILABLE ASSETS

The maneuver battalions of the brigade are organized with a strong antiarmor capability. Each of the brigade's three tank battalions are to be equipped with 36 tanks presently known as the XM-1 main battle tank.[1] "A tank unmatched in battlefield mobility, firepower, and shock effect" according to the the Commander of the Army Material Development and Readiness Command, Gen John R. Deane.[2] The mechanized battalions' antiarmor capability rests principally with the twelve 3000 meter range TOWs located in it's antitank company. For closer tank engagements, the rifle companies are armed with the 1000 meter Dragon and the shorter range Viper.

As a companion vehicle to the XM-1 tank, the mechanized infantry's vehicle is planned to be the MICV.[3] A troop carrier, designed to provide an armor protected infantry fighting vehicle, the MICV with it's 25mm Bushmaster weapons system will provide the mobility required for maneuver and the firepower for protection and suppression.[4] The basic infantry weapon will remain a rifle. The grenade launcher, an improved squad automatic weapon, mortars, and machine guns will complete the infantry's close in fighting weapons.[5]

The restructuring study referred to previously provides the 1985 brigade commander with the immediatley available

destructive firepower of cannon launched guided projectiles, known as Copperhead. The addition of a laser seeker, guidance and control equipment and a shaped charge warhead make the Copperhead round somewhat heavier and longer than a normal 155mm high explosive round; however, since it responds to a laser target designator the additional weight and length are not critical range limitations. Planned range effectiveness with high probability of destruction is between 3 and 20 kilometers. The projectile will be fired for the brigade by it's supporting artillery battalion and targets will be illuminated by observers who accompany the brigade's maneuver companies. As long as the laser target designator illuminates the target it doesn't matter if the target is moving or stationary.[6]

The remaining immediately available element to the brigade is the engineer company normally supporting the brigade, whose commander habitually serves as brigade engineer. The engineers can perform the traditional missions of barrier construction, wire and mine emplacement, and enhancement of friendly mobility and survivability. Through the reorganizational increase, the supporting engineer company's mobility/countermobility capabilities will be enhanced by assignment of one combat engineer vehicle per platoon as opposed to the presently authorized one per company.[7] SLUFAE (Surface Launched Unit Fuel Air Explosive) is planned to be available for breaching twelve meter gaps in friendly or enemy minefields at ranges up to 1000 meters. SLUFAE is designed as a system to launch in single or variable ripple fire, a fuel air explo-

sive round which dispenses a load of highly volatile chemicals into areosal clouds over the target area. Detonation of the clouds produces an effect that neutralizes or detonates mines.[8]

For our mine and barrier use the new FASCAM (Family of Scatterable Mines), which can be delivered by helicopters, artillery, Air Force aircraft, or by ground means, will be available. FASCAM will provide the brigade commander the capability to employ mines with a specific active life on a preplanned basis or perhaps most importantly, during conduct of the battle.[9]

The attack portrayed in Chapter Two will require assets beyond those immediately available to the brigade. As indicated in Chapter One, the brigade's resource provider is the division. The division commander can possibly provide up to three additional maneuver battalions, armor, infantry, or armor-infantry to the brigade.

The brigade in the zone of the enemy's main attack can expect to be provided with additional artillery. Normally the fires of a field artillery group will augment the division artillery. The battalions of the group may be given the mission of reinforcing the field artillery battalions in direct support of the brigades or may be retained under control of the division artillery. In the situation depicted in Chapter Three, the brigade commander can expect to receive the support of much of division artillery and the reinforcing field artillery group.[10] Fires from the 64 weapons of these two battalions and any other units capable of supporting can be rapidly re-

directed through the automated management of the fire support system using TACFIRE. The automation of TACFIRE will enable the field artillery weapons to be focused rapidly and accurately to influence the battle. Access to TACFIRE and the additional artillery assets will be accomplished by the brigade's fire support coordinator.

The division commander will also get additional engineer assets from corps. The corps units may be placed under operational control of the division or they may be attached to it.[12] The division commander has several options in the use of engineer assets but in this case he would probably give the brigade's supporting engineer company an additional platoon or perhaps two platoons of the divisional battalion and use the corps assets in the division rear. This arrangement takes advantage of existing relationships and utilizes units of like mobility to assist the brigade. The corps units with wheeled vehicles would have difficulty assisting the maneuver units but could operate in the division rear with less difficulty.

Additional support the division has available to assist the brigade is the attack helicopter company of the divisional aviation battalion which at the start of the battle will probably be given to the brigade for utilization. The prime weapons system of this company will be 21 of the advanced attack helicopters (AAH). "This helicopter will be armed with sixteen of the latest in laser-guided antitank missle systems, a 30mm cannon and 2.75 inch rockets."[13] These armaments and the as-

sociated fire control and aircraft survivability equipment will make it capable of performing it's mission under day, night, or adverse weather conditions.[14]

The brigade will get support from the Air Force tactical air assets available to the division. The Air Force provides the brigade with a tactical air control party and communications for requesting, coordinating and controlling the tactical air assets.[15] The principle Air Force asset for close air support is the A-10, a new airplane, designed as a close support airplane. "The A-10, with designed survivability, can carry up to 16,000 pounds of mixed ordnance on ten underwing pylon stations. It may include both freefall and laser-guided weapons, rockets, or antitank missles."[16] "It can take off in less than 5,000 feet of runway, cruise out 250 nautical miles, loiter for up to one hour and thirty minutes, deliver ordnance for ten minutes and return to base with twenty minutes of fuel reserve remaining."[17] The A-10 is expected to be able to kill several tanks per sortie.

The division's air defense artillery (DIVADA) is composed of a gun battalion and a missle battalion. For close in air defense each battalion will also be armed with Stinger,[18] a man portable, infrared guided missle with capability for identification - friend - or - foe.[19]

The principle weapon of the missle battalion is currently planned to be the ROLAND,[20] a low altitude all-weather system. "The ROLAND has the advantage of being completely selfcontained within a single vehicle including all fire control equip-

ment, automatic loading twin launchers, spare missles and search and tracking radars."[21]

The gun battalion's primary weapon is planned to be a system currently under development called, GLAADS. "This system is being developed as a mobile, rapid fire system in the 20-40mm range with optical, laser and infrared sensors to acquire and fix targets and feed data to on-board computers."[22]

If the brigade commander has been allocated air defense assets to plan for in his defense a liasion element from the battalion of DIVADA providing the bulk of the support to the brigade will function in a similar manner as the field artillery liasion representatives at brigade.[23] As general rule in the defense, the bulk of the air defense assets will be retained under DIVADA control with some gun and Stinger elements placed in direct support of the brigade.[24]

The Combat Electronic Warfare Intelligence (CEWI) battalion at division is organized to provide the brigade commander with support on a mission basis. Normal support will include an interrogation of prisoners of war (IPW) team, a counter-intelligence (CI) team, remote sensor (REMS) and ground surveillance radar teams. Within the brigade area other CEWI assets may be operating under division control. These assets will coordinate directly with the brigade. Typical of the type elements likely to be operating as such are elements from the electronic warfare company. Signal intelligence (SIGNIT) and electronic warfare support in the form of collection or jamming information can be provided to the brigade.[25]

This chapter enumerates the assets available to the brigade commander both organically and those provided by division. Previous chapters have outlined the friendly unit composition, the threat, and the ground tactical plan to be implemented. The remaining elements to be examined are command and control assets available to the brigade. Due to the physical size of his area, the diverse elements requiring his attention, and the many tasks he must perform, the brigade commander must make extensive use of electronic communications. "The Tactical Control System (TCS) is being developed to provide needed electronic communications."[26]

The TCS is a portable, compact, modular data processing station for field use at all echelons in a variety of highly mobile tactical applications."[27] TCS will provide the brigade with the interface it needs with the division's Tactical Operations System (TOS). "The maneuver battalions will be equipped with a facsimile device capable of handling 1600 characters per second to provide input and perhaps a display and limited storage capability."[28] It is by the integration of the facets of command and control systems that the brigade will have access to the intelligence data collected at division, combat information and spot reporting from the battalions and a capability to receive and dispatch page displays or overlays with here-to-fore unapproachable speed. A picture of the TCS equipment the brigade is planned to have is included at Figure 10.

The system will use standard army field radios and crypto

devices for transmission and reception. (Currently planned to be the SINCGARS family with 100% security.)[29] It will be powered by either vehicular power, if it is required to operate on the move, or by military standard generators. The system, though still under development, is planned to allow for compiling functions and spaces as well as reductions in physical requirements. Communications, tactical displays, and working areas all of which lead directly to command posts of the magnitude described in Chapter One can be eliminated or greatly reduced by the voice facsimile and display capabilities of TCS.

In 1985 operations orders and plans can be issued very quickly by the brigade to the battalions. This speed and the graphic portrayal of the intent of the brigade commander will give the battalion commanders the needed additional time and guidance to plan and coordinate their fight.

Written Standing Operating Procedures (SOP) have long been voluminous documents produced by almost every level of command. The battlefield portrayed requires workable, common sense, and universally understood procedures used by all elements of the brigade. These procedures must be habits not voluminous written SOPs. Electronic communications are easily lost or degraded. The battalion commanders must understand the plans and orders of the brigade and the expected actions of their sister maneuver elements and supporting forces. If these procedures are understood, dependence on the use of electronic communications can be eased.

The threat to command and control is great. Electronic emissions, if habitually radiated from one location will bring destructive fire. Yet, complexity of the control of the dynamic battlefield will require electronic communications. We must make judicious use of this means and take all measures available to confuse and deceive the enemy as to our use.

Despite SOPs and the rapid, secure, and accurate capabilities of TCS the brigade commander's presence becomes ever more critical on the battlefield. To win when fighting outnumbered requires sound timely decisions carefully atuned to the crucial events of the battle. The brigade commander must be on the spot to clearly see the battle, assign missions, allocate means, and direct the battle. He must be present and completely knowledgeable of the situation in order to influence the battle and insure mission success.

Chapter Five will describe the battle, pitting the organization depicted in Chapter One, the ground tactical plan depicted in Chapter Three, the available assets of this chapter, against the threat depicted in Chapter Two. The purpose of the chapter is to emphasize brigade command and control requirements in battle. Analysis, reccomendations and conclusions concerning these requirements will be made in Chapter Six.

ENDNOTES

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2 GEN John R. Deane, "Progress in the Midst of Change," Army, 26:10 (October, 1976), pp. 80-83.

3 Op. cit. Headquarters Training and Doctrine Command, p. I-1-37.

4 "Infantry News," Infantry, 66:4 (July-August, 1976), pp.6-7.

5 Eric C. Ludvigsen, "Making Do and Modest Progress," Army, 26:10 (October, 1976), pp. 145-168.

6 LTC Charles L. Williams III, "CLGP The Smart Round," Field Artillery Journal, 43:2 (March-April, 1975), pp. 29-32.

7 Op. cit. Headquarters Training and Doctrine Command, p. I-8.

8 Op. cit. Ludvigsen, p. 164.

9 Headquarters U. S. Army Combined Arms Center, "Division and Brigade Operations Restructured Division Operations Manual," RDOM 71-100 Test, (Fort Leavenworth, Ks., December, 1976). pp. 2-51-2-52

10 Ibid. p. 4-37.

11 Headquarters U. S. Army Combined Arms Center, "Command and Control of Combat Operations," DFM 101-5 (Fort Leavenworth, Ks., 30 November, 1976), p. 5-39.

12 Op. cit. RDOM 71-100 Test, p. 2-56.

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14 U. S. Army Command and General Staff College, "Selected US and Soviet Weapons and Equipment," RB 30-2 (Fort Leavenworth, Ks., July, 1976), p. 95.

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17 MAJ Michael L. Ferguson, "A-10 Close Air Support Stone," Infantry, 66:3 (May-June, 1976), pp. 24-28.

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19 Op. cit. Ludvigsen, p. 168.

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21 Ibid. p. 51.

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23 U. S. Army Air Defense School, "Air Defense Artillery, " RDOM 44-3 Test, (Fort Bliss, Tx., December, 1976). p. xxxii

24 Ibid. p. 7-19.

25 Op. cit. RDOM 71-100 Test, p. 4-30.

26 Statement by Major K. W. Bernard, personal interview, 1 February, 1977.

27 Presentation brouchure developed by the Singer Company titled "Query Control Station" since renamed "Tactical Control System," (October 20-22, 1975).

28 Op. cit. Bernard interview.

29 U. S. Army Signal School, "Integrated Tactical Communications System," (Fort Gordon, Ga., March, 1976). p. 20.

TACTICAL CONTROL SYSTEM

WITH PRESENT RADIOS AND CRYPTO DEVICES

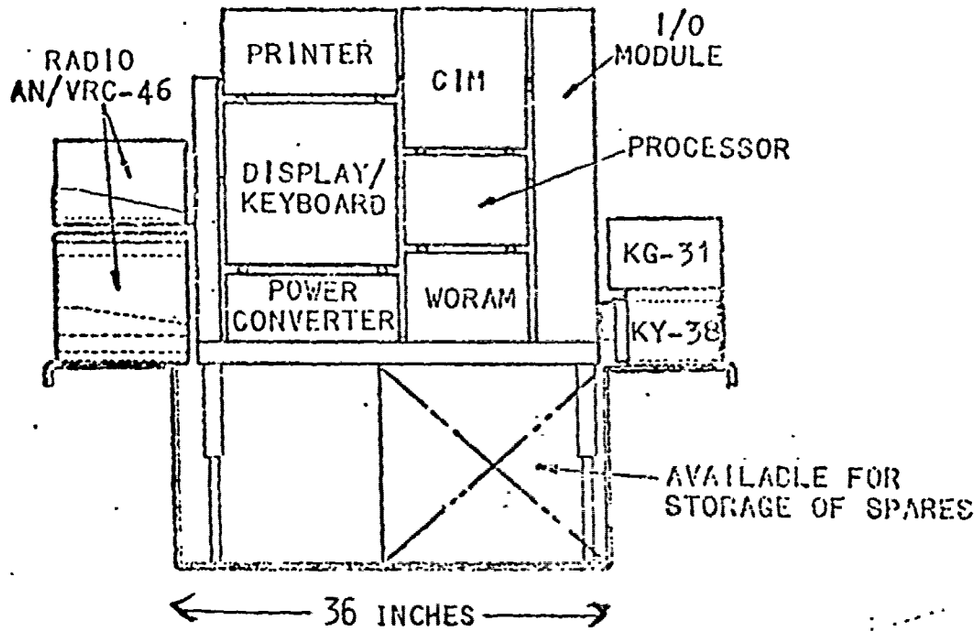

FIGURE 10

CHAPTER FIVE

THE BATTLE

The battle portrayed in this chapter will utilize the friendly organizations, tactical doctrine and Soviet attack described in earlier chapters. The defending division will be organized as the restructured Heavy Division. The defending brigade will use as a guide the Restructured Division Operations Manual (RDOM 71-100 Test) to organize and conduct it's defense. The Soviet attack will employ organizations and tactics outlined in U. S. Army Intelligence Threat Analysis Detachment Report No. 14-U-76, (Military Operations of the Soviet Army).

The defending division commander has constituted a covering force of four battalions and has retained control of the covering force. The mission assigned to the covering force is to engage the enemy, strip away his recconnaissance forces, deceive the enemy as to the true location of the division's defense, cause him to commit himself early to breakthrough and formation of his main attack, and to attritt the enemy as heavily as possible.[1]

The brigade in the path of the enemy's main attack is the division's center brigade. It is organized with four battalions disposed laterally across the brigade zone in prepared positions. The brigade's fifth battalion is in prepared posi-

tions located some five kilometers to the rear of the front four. It is located so as to deal with the assumed enemy penetration. The division commander has tentatively designated one of the covering force battalions to be allocated to the brigade upon completion of it's initial mission. The covering force battalion, when released by division, will move to one of several positions selected by the brigade. The brigade has also selected several other tentative positions should the requirement for eight battalions arise.

The division's attack helicopter company with 21 attack helicopters, each carrying 16 HELLFIRE missles, has been allocated to the brigade. It is located at a forward rearm and refuel point within the brigade's zone. The mission assigned to the brigade is to defend in zone and allow no penetration rearward of the brigade's rear boundry. A sketch of the enemy planned attack and brigade defense is at Figure 11.

To effectively control his brigade in the defense, the brigade commander has established a main command post about 15 kilometers to the rear of the brigade's prepared defenses. He has formed a command group to accompany him forward into the battalion areas where the main enemy attack is expected. To insure continual command and control, a command post displacement team has been located some distance from the main command post. It is to remain on listening silence until required to assume control. The command group and displacement team will each have security elements as will the brigade main command post. All three elements and their security should be

in like armored vehicles. There are several benefits derived from having the command and control elements and their security in like vehicles. The first and most obvious reason is that if they are sighted by attack or photographic aircraft they are not readily identifiable as command vehicles. Armor protection is required on all vehicles for protection against artillery, air, or ground attack. The antiarmor capability of the security vehicles will be assisted by the weapons of the command vehicles. Maintenance and support requirements are lessened if all vehicles are of like type.

When the battle starts, the enemy motorized rifle division commander will be deceived by the covering force as to the true defensive positions of the friendly division. As he forms for breakthrough he will position his artillery well forward and will focus the combat power of his 16 maneuver battalions with supporting arms at the defending brigade. Before he is attritted by the covering force, the motorized rifle division commander will have 245 medium tanks and 115 armored personnel carriers supported by 132 tubes of artillery, attack helicopters, and excellent air defense coverage.[2] His mission is to breakthrough our defenses to include division reserves, to overrun our brigade and division command posts, to destroy our artillery and to continue the attack to seize objectives 50 kilometers to our rear.

Considerable information regarding the enemy's disposition and actions will be available to the brigade commander before his forces contact the enemy. As the covering force battle

reaches an area about ten kilometers from the brigade's defensive positions, the graphic display of the Tactical Control System (TCS) should give the commander a good picture of the battlefield. This picture will be a composite of information available to the division and transmitted as depicted at Figure 12. This is a significant difference in the battle of 1985 as compared to today's battle. The brigade commander will have a timely and quite complete graphic portrayal of his forces, those of the remainder of the division, and the array of the enemy in depth as it approaches the brigade's maneuver forces.

The portion of the covering force fighting directly in front of the brigade may be forced back more quickly than those covering forces on it's flanks. The covering force will pass through the brigade relaying all information and intelligence they have on the enemy. The battalion of the covering force which was tentatively designated to join the brigade will be requested by the brigade. Upon division approval it will move to it's position. The remainder of the covering force will move to the rear to other positions selected by division. As the covering force hands off the battle to the brigade, the action has the effect of identifying the true location of the brigade's defense. This defense will cause the enemy to slow his advance and realign for his breakthrough.

With the passage of the covering force the brigade assumes responsibility for all fire support coordination within and

to the front of it's zone. The fires of artillery, close air, and the attack helicopters must all be coordinated and controlled by the brigade. In the effort to fix or halt the enemy, the TCF picture becomes an infinitely important tool. The enemy situation will be refined at the brigade by information received from the covering force, the air and helicopter assets being employed by the brigade and by information supplied by the battalions. The division will continously update the picture from information it receives on the enemy from it's CEWI battalion, corps assets, Air Force sources and perhaps national sources.

The information supplied will allow the brigade commander to better predict the location of the enemy's planned penetration. The commander will have more time in 1985 than today to plan his artillery support, close air support, and helicopter attacks and fine tune the positions of his maneuver units. The division will be able to confirm for the brigade that it will be receiving the enemy's main attack. Based upon this, the division will inform the brigade of what additional maneuver and fire support assets it will make available. The TCS will allow the brigade commander to see the same portrayal of the battlefield viewed by the division commander. He can quickly assess his requirements and coordinate any additional ones with division.

None of these actions or decisions to take action can be implemented without some delay for response time. The capabilities of TCS enable the decision maker to more quickly and ac-

curately analyze the situation. It enables the commander's decisions to be announced and disseminated to the implementers far more quickly than present capability allows. The main command post maintains communications with the division to insure that the TCS pictures of friendly flank units and the enemy's attack remain updated.

The brigade must allow sufficient time for the battalion from the covering force to reconstitute and rearm itself and to occupy it's positions. The fires of this battalion and those of the brigade's organic battalion deployed behind the four battalions on line are not now capable of aiding in the battle. The brigade commander must determine any further requirements for assets and allow time for their reaction. A determination of how much tactical air and artillery can be utilized must be made. Consideration for employment of engineer support, FASCAM, and additional CEWI assets must be made. Location of the attack helicopter rearm and refuel point as well as other ammunition resupply points is a critical decision which must be addressed. These valuable facilities must be close enough to minimize the delay in resupply yet concealed and protected from the enemy's fire.

Keeping track of logistics support and maintaining radio contact with the brigade's personnel and logistics officer is a job of the main command post. The headquarters company administrative and logistical support with it's thin skinned vehicles which is a part of today's command post will be located away from the command post. The threat of hostile

electronic warfare, air, artillery, or ground attack requires the 1986 brigade command post to move quickly and frequently to enhance survivability.

At the point when the initial engagements of the enemy force are undertaken by the maneuver battalions the command and control problem of the brigade commander becomes more complex. His basic problem is the effective coordination of all means made available to him to service the enemy targets which are presented.

Key to halting the enemy will be disruption of his command and control as he attempts breakthrough. Efforts must be made to find key enemy nets supporting the breakthrough - air defense, artillery, regimental, division - and their disruption timed to support the brigade plan of fires and maneuver. The CEWI battalion liasion officer should be at the brigade main command post to coordinate and direct this effort.[3] The capability of which far exceeds today's abilities.

If the battalions with the supporting means available to the brigade are unable to halt the enemy advance and fix him, the brigade commander will be placed in a position of being forced to recognize that a shift of maneuver forces is required. Consideration must be given to additional attack helicopters and maneuver battalions and to possible locations to which they should move.

The decision to shift forces fighting from prepared positions must be approached with caution and a keen sense of timeliness. If the forces move too early they give up the

benefits of their positions, and then must pay attention to their own movement as well as that of the enemy. If the decision is made too late their prepared positions may well be bypassed. Against these considerations the commander must consider the advantages of the firepower of additional forces.

Once recognition of an impending requirement to shift forces is accomplished the commander will, in all probability, request additional battalions from the division. The main command post will handle the request and coordination with the division. The positions tentatively identified for the additional battalions to occupy will be confirmed or adjusted. As soon as the division commander approves, the movement of the two additional battalions will commence. Coordination and control of their movements requires careful attention to insure that it is accomplished quickly and that the units arrive at the position the brigade has selected with a minimum of delay. The main command post will assume this task.

Once approval has been granted for the additional forces the brigade commander, from the command group, will probably begin to shift his forces to fully focus the firepower of the six battalions he already has. The assumed penetration will be confirmed or adjusted and efforts to engage the enemy with all available assets will intensify. At Figure 13 is a sketch showing the battle with eight friendly battalions committed.

The command group has been located well forward so that the brigade commander has face to face contact with the battalion commanders and is within easy radio range of forces at

the critical points. From his well forward position he can verify the situation at the line of contact in order to more clearly assign missions, allocate means, and direct his forces. His presence serves to motivate his soldiers. The command group uses vehicles just like those of the battalions and if observed appears as a rifle platoon. It must move for protection and requires antiarmor weapons for defense. It must be kept small.

The engineer company commander should be with the brigade command group. He will concentrate the engineers at key points around the assumed penetration. They will utilize the added number of combat engineer vehicles to assist the maneuver battalions in the preparation of their positions and to construct obstacles in the woods and towns. Using increased mine laying and delivery capability, they will reinforce obstacles and slow movement across open trafficable terrain.

Introduction of the A-10 close air support airplane more than triples the armored fighting vehicle kill per sortie capability of the Air Force. The air liasion officer (ALO), operating from the command group, will control the large numbers of A-10s which should be available. They can strike enemy vehicles in covered positions not able to be observed by forward observers or hit by direct fire. The ALO must coordinate with the artillery fire support coordinator (FSCOORD), also in the command group, for suppression of enemy air defense (SEAD), marking of locations, control of smoke and illumination at night, and to insure safety of the aircraft. Sup-

persion should be fired to support simultaneous helicopter and tactical air attacks. The systems compliment one another and tend to saturate air defense.

The role of the FSCOORD coordinating SEAD has already been highlighted. The artillery's observers will be firing a lot of COPPERHEAD, which is the capability that enables the artillery to fix and destroy enemy armored fighting vehicles with far greater ability than today's artillery. In addition to SEAD and COPPERHEAD the FSCOORD must coordinate scatterable mines with the brigade maneuver plans, plus requests to division artillery and the division staff for close air support for counterfire if the enemy's artillery fires begin to neutralize defensive positions.

The displacement team is a key element in the brigade's command and control. It monitors the situation, maintains a link between the command group and division and between the command group and the brigade units. Yet, it does not transmit until communication is lost by the main command post or the command group. It must move as soon as it completes transmitting. It must be always prepared to assume control when the main command post makes it's frequent moves for survivability. The numbers of maneuver units, fire support means, and combat service support facilities which all must be controlled to insure maximum contribution to the battle requires continual command and control.

The positioning, movement, and focus of combat power will determine if the brigade can accomplish it's mission. If the enemy attack is halted within the zone of the brigade and his

forces destroyed, the mission is accomplished.

Chapter six is an analysis of the requirements presented in this chapter, conclusions of the study and contains recommendations for use and further study.

ENDNOTES

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2 Department of the Army, Office of the Assistant Chief of Staff for Intelligence, Intelligence Threat Analysis Detachment, "Military Operations of the Soviet Army," USAITAD Report No. 14-U-76, (Arlington, Va., 25 May, 1976). p. 103.

3 Headquarters Training and Doctrine Command, "Electronic Warfare Company," TOE 30-117T, (Fort Monroe, Va., 1June, 1976). p. 4.

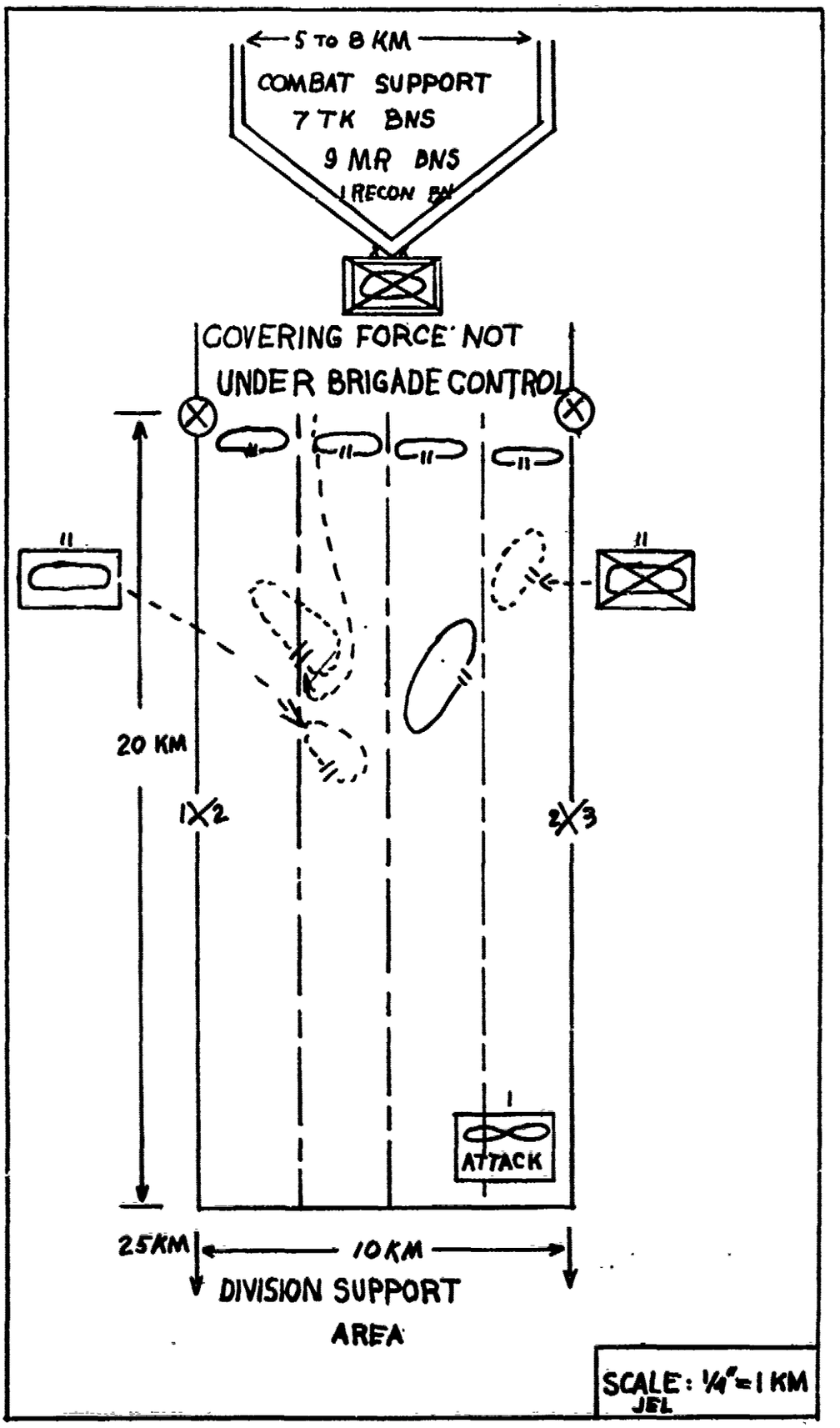
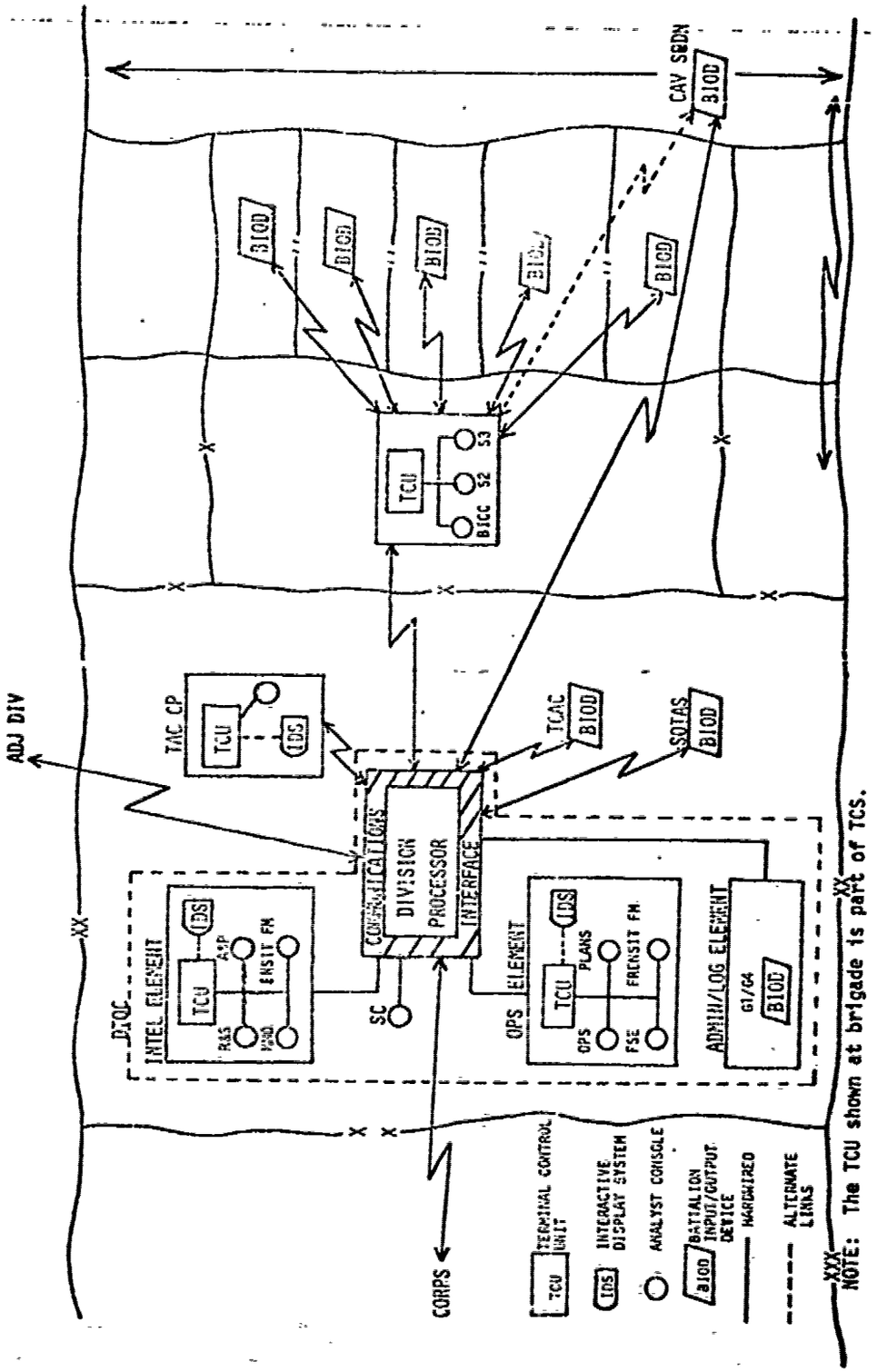

5 TO 8 KM
COMBAT SUPPORT
7 TK BNS
9 MR BNS
1 RECON BN
COVERING FORCE NOT
UNDER BRIGADE CONTROL
20 KM
1X2
2X3
ATTACK
25KM
10KM
DIVISION SUPPORT
AREA
SCALE: 1/4"=1 KM
JEL

FIGURE 11

FIGURE 10



DIVISION TOS ED SYSTEM CONFIGURATION

FEB. 3 917

FIGURE 12

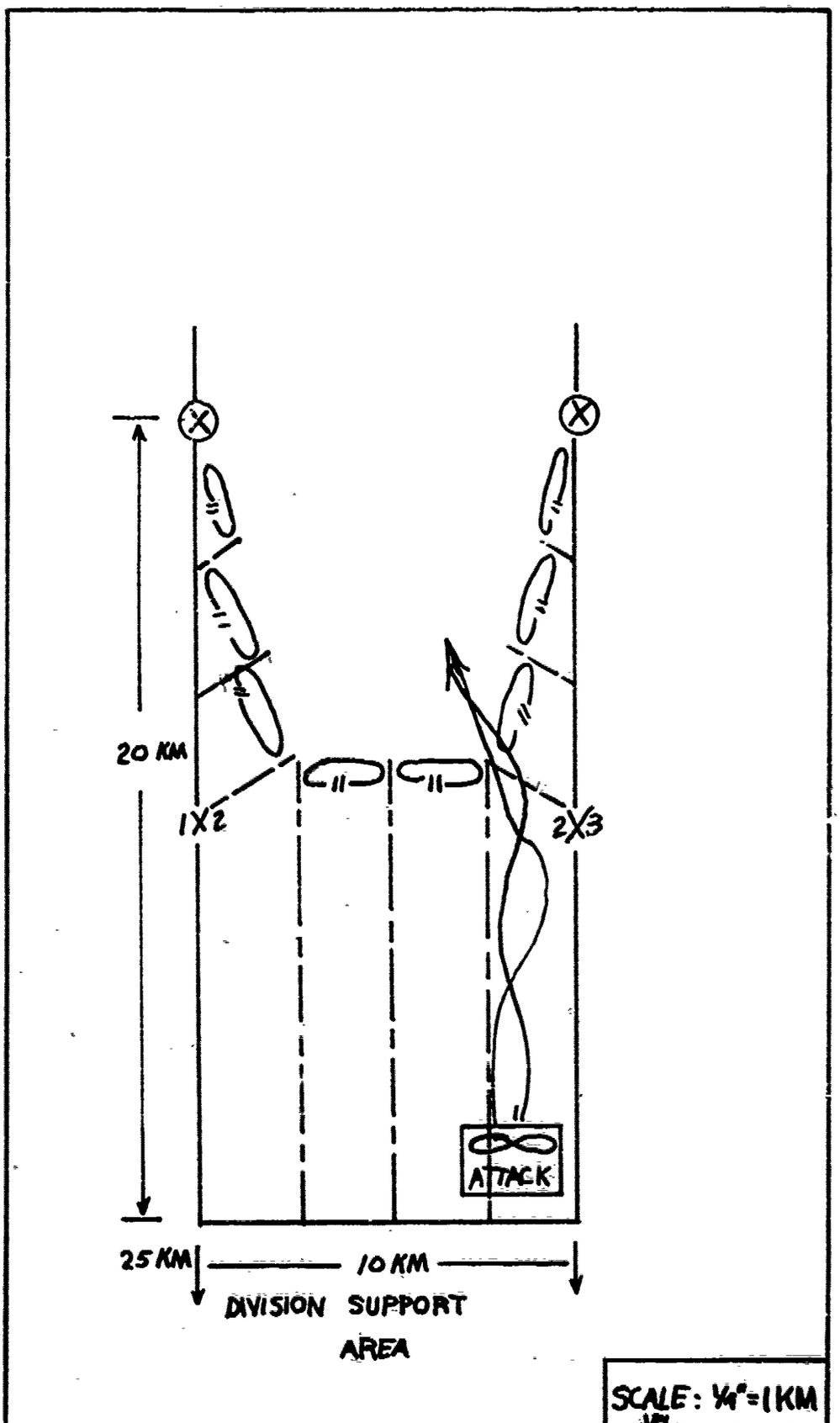

20 KM
1X2
2X3
ATTACK
25 KM
10 KM
DIVISION SUPPORT
AREA
SCALE: ¼"=1KM

FIGURE 13

CHAPTER SIX

ANALYSIS, CONCLUSIONS, and RECOMMENDATIONS

ANALYSIS

The brigade command post of today is huge. It physically covers almost a square kilometer and has an electronic signature of like proportions. It is authorized people and equipment to operate from one location but with some rearrangement can be stretched to an awkward two element organization. It requires large communications and display areas and many radio operators and "map posters". It has little organic security and is highlighted by unique vehicles and radio antennas. The battlefield of 1985 will not allow survival of such a command post.

The Soviet attacker of 1985 will have vast resources to devote to locating and destroying the defender's command posts. The enemy's jamming and disruptive attacks on communications will delay, confuse, and frustrate command and control actions. The enemy's massive firepower will be focused immediately on the command and control centers once they are located. The enemy's air and helicopter assets can fire or direct fires into command posts. The threat of airmobile delivered troops for ground attack and attack by subversive elements is impressive. In order for the brigade to maintain command and control it's command post elements must be small,

dispersed, protected, and moving frequently.

Utilization of multiple command and control elements will increase survivability. The personnel to man them and equipment with which they operate should be included as separate entities in authorization documents.

Formation of a command group to operate well forward is required. Woven throughout the battle are critical decisions. They must be recognized and made rapidly. The initial positioning of forces, planning of fires, assumptions of enemy actions, and development of a universally understood plan are critical decisions which must be made prior to the start of the battle. As the battle progresses toward the brigade, the key word becomes AWARENESS. The brigade commander must be as nearly aware as possible of the advance of the enemy, the positions and actions of his own forces and the time and space factors required to implement any decision he is to make. Operating from a command group at the critical points greatly increases the brigade commander's awareness.

The brigade's main command post's most vital function is to maintain the flow of intelligence information from the division to the brigade commander. Reports to higher headquarters, acquisition, coordination, and movement of additional forces, thorough intelligence analysis, and all the other command and control functions for which the command group has neither the time nor the facility to conduct must be accomplished by the main command post. Major among it's responsibilities is to maintain a 'round the clock capability. The

command group will operate at the critical times. It should consist of the commander and key staff officers who should not attempt sustained 24 hour operations.

The threat from enemy air and artillery against the main command post will cause it to move frequently and thus, because of enemy electronic warfare or terrain restrictions, degrade or lose the vital links with the division. A displacement team serves to maintain the continuity of command when the main command post moves. It monitors all action, keeps posted on intelligence, plans, and events, and only transmits when neither the command group nor the main command post can respond.

Continuous protection of all three elements of the brigade's command and control including antitank weapons protection from isolated enemy armor forces that may break through is essential. Some protection at times may be furnished by the brigade's scout platoon; however, such assignment denies their use to conduct recconnaissance, economy of force operations, or to serve to guide additional battalions into the brigade zone. Such use would allow positioning of additional battalions without new electronic transmissions, because the brigade command post could continue just communicating to it's scout platoon. Utilization of a platoon from one of the brigade's infantry battalions is another available option. For sustained operations, requiring integrated security protection, neither of these two options is advisable. Organic security is required.

The key technological development is the ability of 1985 communications. The Tactical Control System (TCS) is the tool which enables the brigade commander to see the entire battlefield. He can see the friendly units on his flanks and the enemy attacking the division. TCS will give him the capability to zoom in on any part of the battle, at anytime to see a graphic picture which is constantly updated. This capability will allow the commander to focus massive firepower with it's longrange pinpoint accuracy at targets out to ranges heretofore unapproachable. TCS will enable the battalions of the brigade to receive the commander's decision with a clear picture of the battle and mass their fires quickly and efficently. The speed of transmission and graphic display features of TCS help the commander see the situation quicker and in more detail. These advantages will enable him to make better decisions quicker than today.

The MICV is to be the infantry's companion vehicle to the tank presently known as the XM-1 of the tank battalions. It is a modern, well protected vehicle, with significant anti-armor capability. It has ample space for a troop compartment which could be utilized to mount a TCS console. Survivability on the battlefield requires that command posts be difficult to locate and difficult to destroy. Placing the command and control elements of the brigade in an armored fighting vehicle of a type common on the battlefield will enhance it's survivability.

There is plenty of firepower available, the brigade's requirement is to maintain communications to get it, concentrate

and coordinate it.

The capability of FASCAM, SLUFAE, and COPPERHEAD will enable the brigade to fix the enemy at a time and place far more to the choosing of the brigade commander than ever before. Once the enemy has been fixed, his destruction is greatly enhanced by the maneuver battalions supported by the A-10, AAH, COPPERHEAD, and the increased conventional artillery coordinated by TACFIRE.

The command and control elements as well as the maneuver forces will be better protected during movement or once halted by the addition of GLAADS and ROLAND. The air defense liasion officer to the brigade from the new division air defense artillery (DIVADA) will be able to coordinate and provide protection from the enemy's helicopters and tactical aircraft.

The new CEWI battalion has a dual capability with which to support the brigade. On the one hand it is the principal provider of the critical intelligence which it either produces itself or obtains from higher echelons and on the other hand it provides electronic warfare support to the brigade.

The enemy's well established offensive electronic warfare capabilities will undoubtably be directed at the brigade. His jamming capability, which in part forces the brigade commander with his command group well forward to give orders verbally at the critical points and the essentiality of the intelligence links to division require the protection of the CEWI battalion.

The personnel, equipment, and systems available to assist

him in command and control must be carefully utilized by the brigade commander to insure efficiency, accuracy, and timeliness.

The physical and electronic signature of the current brigade command post make it an almost unmistakeable target for the enemy. It's 55 vehicles and 150 personnel cannot be electronically or physically protected from Soviet attack. The technological breakthrough of TCS enables the functions of command and control to be accomplished in widely dispersed areas with fewer prople. Employment of a three element command and control system with each of the elements consisting of very few vehicles all of a type common on the battlefield is much more easily protected. The frequent moves of the brigade main command post, the listening silence of the displacement team and the closeness of the command group all provide electronic security. With enhancement of physical security and electronic protection, survival of brigade command and control on the 1985 battlefield becomes a reality.

CONCLUSIONS

To enhance survivability, insure continuity of communications, and provide continual command and control, establishment of three separate and distinct command and control elements is required. See Figure 14.

Establishment of a command group to operate well forward to fight and coordinate the battle is essential. It should be small with no more than two armored fighting vehicles plus a security vehicle. It should consist of the commander, oper-

ations and intelligence officers, the fire support coordinator, air liasion officer, at times the engineer officer, and few other personnel. It should be equipped with a complete TCS console. It should not be prepared for 24 hour operation.

Personnel and equipment for establishment of a displacement team must be provided. This team should be small in size, consisting of not more than one armored fighting vehicle with a security vehicle of like type. The personnel to staff it should be an assistant operations officer and operations and intelligence assistants. It's mission is to establish itself, monitor all communications, and be prepared at any moment to maintain continuity of command of the brigade should the brigade main command post or the command group be unable to exercise command. It must be capable of 24 hour operation and be equipped with a complete TCS console.

The main command post should consist of sufficient personnel to provide intelligence, planning, and communications services required by the brigade. The DIVADA liasion officer, CEWI battalion liasion officer, and at times the engineer will be at the main command post. It must have a minimum number of armored fighting vehicles. It is required to move every few hours. The security element protecting it must be adequately equipped to provide close in and antiarmor protection. The headquarters and headquarters company administrative and logistical support functions commonly associated with today's brigade command post must be located elesewhere. This element must be capable of 24 hour sustained operations. It must have

complete TCS consoles with spares of high mortality components.

Each command and control element requires security from ground attack. The brigade should be authorized a security platoon. The platoon should be organized and equipped to provide continous protection to all three command and control elements simultaneously.

The critical and essential element to seeing the battle and the exercise of command and control is communications. The TCS is small and it's capabilities allow elimination of large bulky displays and reduction of personnel to compile and operate them. It should be a part of all three command and control elements.

All command and control elements should be equipped with the MICV. TCS consoles should be mounted in the troop compartments of the MICVs.

RECOMMENDATIONS

I recommend that this study be forwarded to Concept and Force Design Directorate of the Combined Arms Combat Developments Activity for further examination and utilization. Two areas for further study are: One, the utilization of the MICV with TCS as a command post vehicle. Two, the number of TCS consoles to be authorized to the brigade headquarters.

BRIGADE COMMAND AND CONTROL ELEMENTS

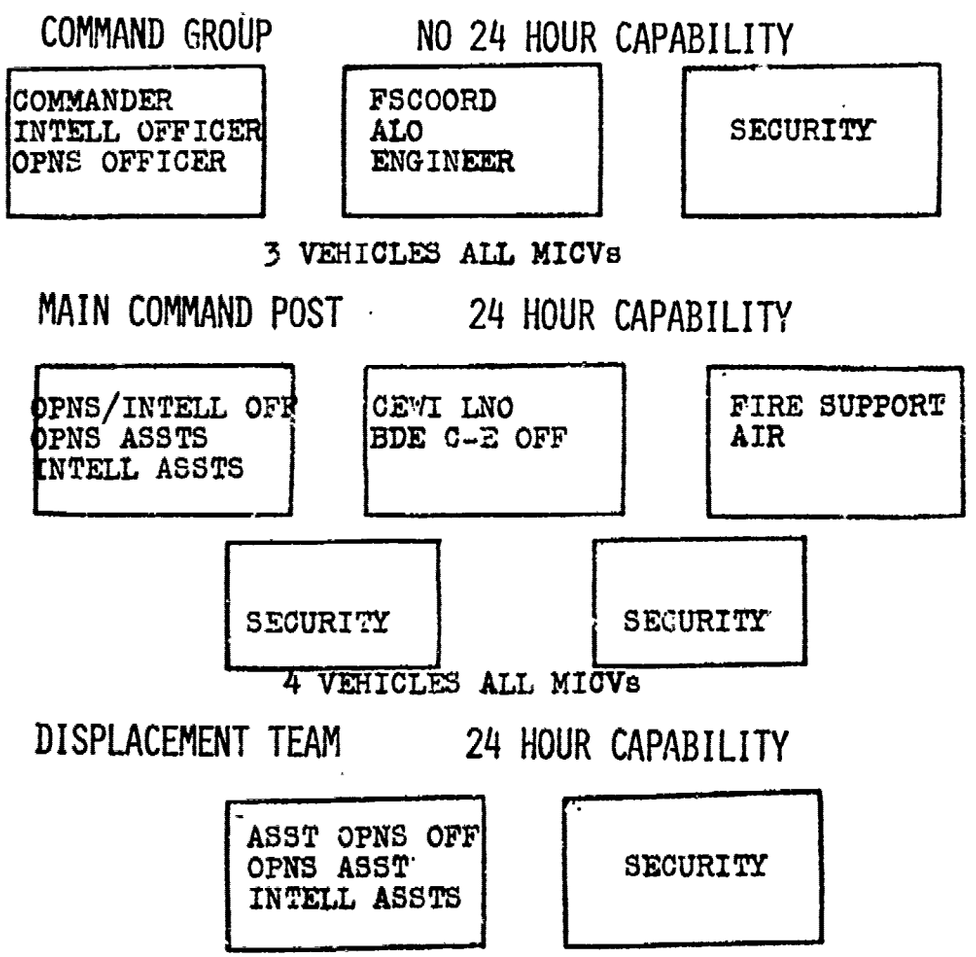


FIGURE 14

APPENDIX

GLOSSARY

AAH Advanced Attack Helicopter

ALO Air Liasion Officer

CEWI Combat Electronic Warfare Intelligence

CI Counterintelligence

CP Command Post

CSS Combat Service Support

DIVADA Division Air Defense Artillery

FASCAM Family of Scatterable Mines

FSCOORD Fire Support Coordinator

IPW Interrogation of Prisoners of War

MICV Mechanized Infantry Combat Vehicle

mm Millimeter

RDOM Restructured Division Operations Manual

REMS Remote Sensor

ROAD Reorganization Objective Army Division

SEAD Suppression of Enemy Air Defense

SIGNIT Signal Intelligence

SINCGARS Single Channel Ground and Airborne Radio Subsystem

SLUFAE Surface Launched Unit Fuel Air Explosive

SOP Standing Operating Procedures

TACFIRE Tactical Fire Control (of field artillery)

TCS Tactical Control System

TOS Tactical Operations System

TOW Tube Launched Opticall Tracked Wire Guided Missle

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