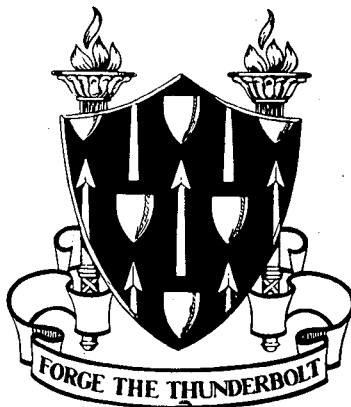


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GENERAL SUBJECTS DEPARTMENT

COMMON SUBJECTS BRANCH



45.60-110

TITLE ARMOR IN THE NUCLEAR AGE

JACK B. LESLEY, CAPTAIN

US ARMY ARMOR SCHOOL

Fort Knox, Kentucky

JACK B. LESLEY

CAPTAIN

ARMOR IN THE NUCLEAR AGE

It was just another summer day during World War II--the bombers took off for the raids over Japan and the land forces continued their plans for the inevitable invasion of the Japanese mainland. Then, with a blinding flash and a mushroom cloud, the Nuclear Age was born. "Hiroshima upset the world's military applecart. Professional soldiers returned from World War II or Korea dare not rest on their laurels. The next war, if it comes, is going to be different--made so by the biggest 'X' factor ever introduced into military calculations, the atomic bomb."¹

From this day in July of 1945, the military planners of the world began to change their concepts of the battlefield. The bywords of this change became mobility, flexibility, extensive communications and firepower. From this beginning came new concepts of organization and doctrine. "Through this period of change came one arm which is not new. "We have in the Army a combat-tested arm which blends the quintessence of past experience in mobile warfare with the latest equipment and is most forward thinking in its application of the principle of battlefield mobility."² That arm is Armor."

Before a discussion of Armor can begin, it is imperative that we define Armor and establish its role in modern warfare.

Definition: Armor is a fighting combined arms team consisting of tanks, armored infantry, armored artillery, armored engineers, and armored reconnaissance/security units, supported on the battlefield by Army Aviation, a flexible and rapid communication network, and a mobile logistics system, all trained, and equipped for mounted ground combat. Armor is in fact the full expression of the philosophy of

flexible organization, armor-protected firepower, mobility, shock action, and teamwork.

Role: The role of armor is the conduct of highly mobile ground warfare, primarily offensive in nature, and characterized by a predominance of mounted combat. This role is performed by the armored division, armored cavalry regiment, separate armor groups and battalions, and the armor elements of infantry and airborne divisions.

ORGANIZATION

Armor is generally organized into divisions, groups, tank battalions, armored cavalry regiments and armored cavalry squadrons. (See Annexes A through D). For purposes of brevity and due to the similarity of organization, I shall discuss in detail only two of the major organizations.

The Armored Division: The division has five tactical and one support headquarters for command, control, and administration to include attached and supporting elements which may be assigned for a specific mission. These are division headquarters, three identical combat command headquarters, division artillery, and division trains.

The operations of the division are built around the three combat command headquarters. These headquarters are organized to accept any task organization of the combat and support elements which the commander may dictate. It is very flexible and changes of organization may be made with little or no warning. This enables armored elements to react rapidly and successfully to the ever changing combat situation.

The combat elements of the division consist of four armor battalions and four armored infantry battalions. Their organization is

very similar. Each has a headquarters and headquarters company and four line or combat companies of three platoons each. The armor battalion headquarters has four medium gun command tanks in addition to the seventeen tanks per combat company. This gives a total of seventy-two tanks per battalion. The infantry company is transported in seventeen armored personnel carriers. These tracked vehicles give the infantry company equal cross country mobility with the tanks. They have the additional capability of water floatation.

The division artillery has both nuclear and non-nuclear capability. It is entirely self propelled and is capable of supporting the division in a rapid moving situation. It has a total of fifty-four 105mm howitzers, twelve 155mm howitzers, four 8-inch howitzers and two 720mm rocket launchers.

The division has an aviation company to further add to its flexibility. This company has the capability and missions of aerial photography, aero-medical evacuation, reconnaissance, troop transport, and courier-messenger service. To accomplish this mission, the company contains twenty-two fixed wing aircraft and twenty-eight rotary wing aircraft.

Complete administration and logistical support is supplied to the division by division trains. This unit supports the division in depth and is completely mobile.

The Armored Cavalry Regiment: The regiment is organized on the basis of two per field army or one per corps. It has a regimental headquarters and headquarters troop and four reconnaissance squadrons.

The regimental headquarters is fire control headquarters of the

unit and each of the four squadrons is a self supporting unit which is capable of operating as a part of the regiment or on independent missions.

To accomplish its mission, the squadron is organized as a combined arms team consisting of a headquarters and headquarters troop, three identical reconnaissance troops, a tank troop and howitzer battery. Headquarters and headquarters troop contains the command and administrative elements to control and support the squadron. Each reconnaissance troop has a headquarters section with one 76mm light gun tank and troop support elements, and three reconnaissance platoons. Each platoon consists of a scout section, a tank section with two 76mm light gun tanks, a rifle squad mounted in an armored personnel carrier, and a 4.2-inch mortar support squad mounted in a full tracked carrier. The tank troop has a headquarters section with two 90mm medium gun command tanks and three tank platoons of five tanks each. The howitzer battery has six self propelled armored 105mm howitzers and is capable of supporting the squadron.

In addition, the regiment has an aviation troop which consists of thirteen each fixed wing and rotary wing aircraft. The troop has the capability of radar surveillance, air transport of troops and supplies, aerial photography, courier-messenger service and battle-field reconnaissance.

To further increase the effectiveness of the regiment "the revised TO/E provides that medium gun tanks may be substituted for light gun tanks throughout the regiment when authorized by the theater commander. This will enable major commanders to greatly increase

the regiment's offensive and anti-tank capabilities when employed in
an area requiring such increases."⁴

BASIC MISSIONS

In performing its role, armor is capable of executing all types of ground combat in either nuclear or non-nuclear warfare. Armor is ideally suited to a nuclear environment because its armor protection shields personnel completely from thermal effects and attenuates significantly the effects of blast and radiation. Armor can maneuver and fight when other troops are dug in or must avoid contaminated areas. Armor's inherent characteristics of mobility, armor protection, flexibility, shock action, and responsiveness to command endow armor with the optimum capability for successfully accomplishing the following missions.

a. Deep penetration and wide envelopment. Large armor formations with battlefield mobility and the ability to maneuver in whole or by element, controlling tremendous nuclear and nonnuclear fire support, provide forces with power and momentum for deep penetrations and wide envelopment. In the enemy's rear areas these forces attain great freedom of action as they maneuver to seize decisive objectives, disrupt communications, destroy command posts, missile sites, artillery, troop reserves, and capture or destroy supplies.

b. Exploitation. Armor has the fighting power to create its own opportunities for exploitation as well as provide the higher commander with a destructive force he can use to rapidly exploit the successes of other formations. For example, the armored division, as part of the corps fighting team, may be used by the corps commander

to expand the successes of infantry or the effects of nuclear preparations. Objectives appropriate for the armored division are those decisive ones beyond reach of foot troops and which will ensure successful accomplishment of the corps or field army mission. Armor/airborne link-up operations may best utilize the abilities of each force in certain of these situations.

c. Mobile defense. Armor is ideally suited to conduct a mobile defense over extended frontages. However, since it is designed primarily for offensive action, it is best employed in defensive operations as the highly mobile counterattack or striking force of a higher command. The armored division, alone or in conjunction with nuclear weapons, provides the corps and army commander with a powerful reserve to be employed in destroying enemy attacking forces. The armor unit's capability to move, live, and fight on the nuclear battlefield permits its employment in compressing or canalizing enemy forces into suitable dispositions for destruction by attack with nuclear weapons.

d. Destruction of enemy armored formations. Destruction of enemy armor is essential to successful ground combat and is a continuing requirement in all offensive and defensive operations. The tank is our primary armor-defeating weapon.

e. Reconnaissance/Security. As the range of weapons is extended, as the battlefield becomes less populated, and as units are more widely dispersed, the need for reconnaissance and counterreconnaissance becomes more acute. Armored cavalry units provide reconnaissance for the higher commander by ground and aerial means, or a combination of both. Reconnaissance, counterreconnaissance, and security missions

demand highly mobile forces with a ground combat capability. In addition to detecting enemy forces and providing warning, these forces must destroy enemy elements within their capabilities. The characteristics of armor units provide the higher commander with forces well suited to conduct covering, probing, screening, and rear area security operations and to act as advance, flank, or rear guards. Armor units are uniquely suited for antiairborne and antiguerrilla operations.

f. Close support of infantry. This mission is most frequently fulfilled by the armor battalions of the infantry division and the armor group. Whether employed as units or as tank elements detached to infantry battle groups, armor battalions greatly increase the firepower and mobility of the infantry attack and defense and provide a powerful armor-defeating capability.

g. Economy of Force. Armor^{ed} cavalry and armor groups are excellently organized and equipped to perform economy of force missions, thus permitting a commander to maneuver the preponderance of his forces to another area for a decisive blow. Armored cavalry is eminently suited for employment in areas not requiring the fighting power of the armored division.⁵

FUTURE DEVELOPMENTS

No one believes that the organization and doctrine of armor is the ultimate for modern warfare. Research and development must continue to build a stronger and more versatile unit. Briefly, I would like to discuss some of the future plans for armor.

The future battlefield is an unknown quantity. "The spectrum of environments extends from the snowy wastes of the Arctic through the more favorable areas of the temperate zone to the deserts of the

6

Middle East and the jungles of Africa." This battlefield will be characterized by a shortening of reaction time. Firepower of the combatants will be increased because of the atomic capability and also the great advances in standard or non-nuclear weapons. This increase in firepower will cause much greater tactical dispersion. Units will be miles apart instead of the yards we know today. The blank spaces of this battlefield will be covered by nuclear and non-nuclear weapons.

Tactical doctrine will be based on this increase of firepower and dispersion. There will be no "front" but a general battle area. Units will rapidly form for specific missions and rapidly disperse upon its conclusion. This will eliminate becoming a target for destruction.

7

The future battlefield calls for an increase in mobility. Our logistical elements will have to be made more flexible. Some of the future improvements will be the rolling fluid transports, the GOER type vehicle, and the introduction of diesel and future exotic fuels. To further increase mobility, a greater variety of aircraft is under development. These aircraft will include:

1. A zero ground pressure aircraft.
2. UTOL air vehicle for extended ground reconnaissance.
3. STOL medium observation aircraft for long range visual and electronic observation.
4. UTOL aircraft for airlift of personnel and general resupply.
5. U/STOL aircraft for command liaison and communication.
6. A surveillance drone.

The addition of these air capabilities will greatly increase the

mobility of armor on the battlefield of tomorrow.

The ground vehicles of tomorrow include the following:

1. Main battle tank.
2. Armored reconnaissance/airborne assault vehicle.
3. Armored personnel vehicle.
4. Armored scout vehicle.
5. Recovery vehicle.
6. GOER.
7. Consolidated family of wheel vehicles.

In the development of these vehicles, a greater emphasis will be placed on an amphibious capability and air transportability. There must also be an improvement in communications to cover the large dispersion of units. All of this equipment must be durable and reliable and, of major importance, at a cost which the economy budget can afford.

"For our weapons system we are exploring every avenue of promise whether it leads to increased firepower, lighter weight, multiplied speed, simplified operation or more efficient use of nuclear material."

Of course, the missile development will continue, but parallel to this development is the increased work with conventional weapons and ammunition. This will preclude a void in our capabilities if there should be a ban on nuclear weapons and their use.

These are a few of the future trends which will keep armor in pace with tomorrow. Only with constant research can we continue to improve. This improvement is a must if we, with our limited manpower, are to successfully continue to fight against communism.

SUMMARY

Today, as in past years, armor is the combat arm which adheres to the principle of mobility on the battlefield. With its inherent characteristics of mobility, firepower, shock action, flexibility, and armor protection, the branch of Armor is the Combat Arm of Decision--yesterday, today, and tomorrow.

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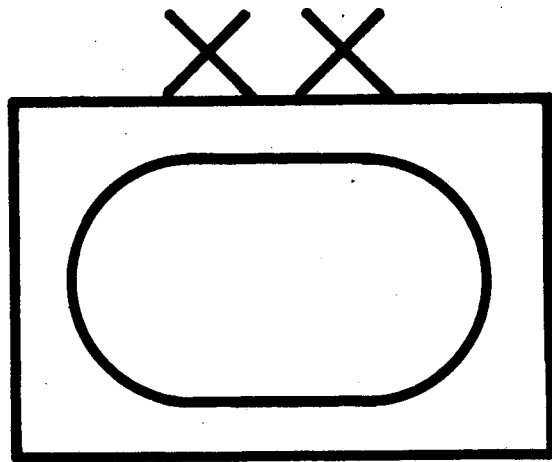
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FOOTNOTES

1. W. R. Kinter and G. C. Reinhart, Atomic Weapons in Land Combat. (Harrisburg, Pennsylvania: The Military Service Publishing Company, 1953 and 1954). Preface.
2. George C. Hoffmaster and Paul M. Fisher, "Armored Division Organization and Doctrine," (Armor LXVII-6, September-October 1958), p. 6.
3. The Definition, Role and Basic Missions of Armor: (AFP-7727-U-Army-Knox-Apr. 59-5c), p. 1.
4. John A. Beale, "Revision of the Armored Cavalry Regiment," (Armor, LXVIII -5, May-June 1959), p. 7.
5. The Definition, Role and Basic Missions of Armor. (AFP-7727-U-Army-Knox-Apr. 59-5c), p. 1.
6. Arthur G. Trudeau, "New Dimensions in Tactics, Weapons, and Materiel", Time, Tactics and Technology, Part II. (Department of the Army Pamphlet 70-15), p. 19.
7. Ibid., pp. 20-23.
8. Mobility (AFP-9405-M-Army-Knox-Apr. 59-5c), p. 2.
9. Trudeau, op. cit., p. 25.

ANNEXES

- A. Armored Division Organization
- B. Armored Cavalry Regiment Organization
- C. Tank Battalion, Infantry Division Organization
- D. Armor Group Organization



ORGANIZATIONAL CHARTS
ARMORED DIVISION

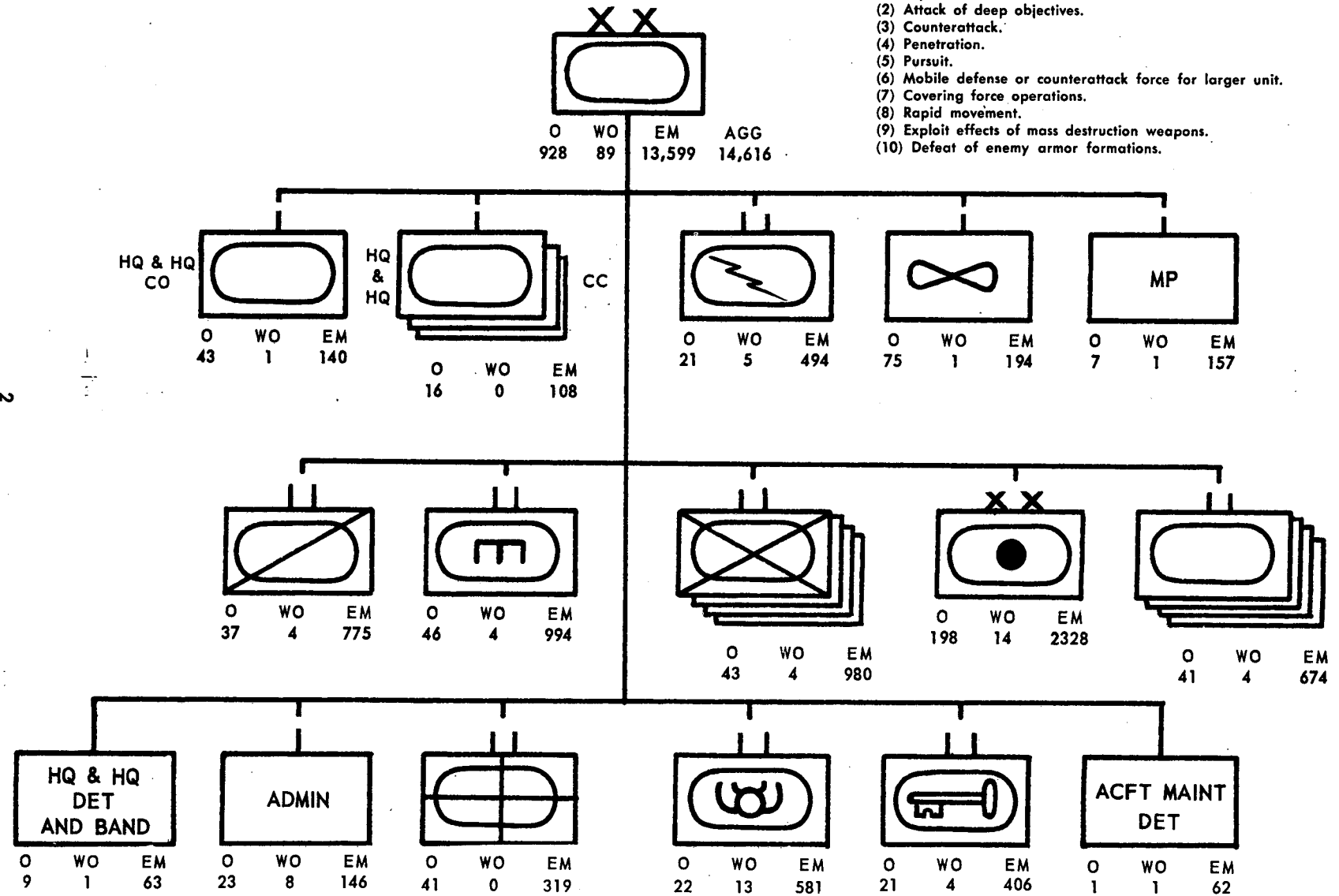
ANNEX A

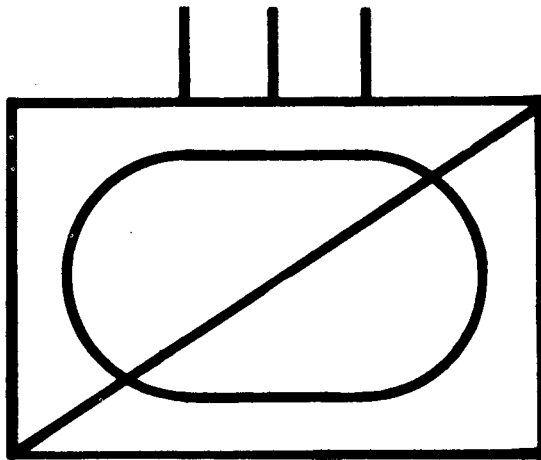
MISSION: Destruction of enemy forces by fire, shock, and movement in independent action or in coordination with other elements of a corps.

ASSIGNMENT: To army.

CAPABILITIES: Conducting all types of ground operations as an independent armored force of combined arms or as a part of a larger force.

- (1) Exploitation.
- (2) Attack of deep objectives.
- (3) Counterattack.
- (4) Penetration.
- (5) Pursuit.
- (6) Mobile defense or counterattack force for larger unit.
- (7) Covering force operations.
- (8) Rapid movement.
- (9) Exploit effects of mass destruction weapons.
- (10) Defeat of enemy armor formations.





ORGANIZATIONAL CHARTS
ARMORED CAVALRY REGIMENT

ANNEX B

MISSION: To perform reconnaissance and to provide security for the unit to which assigned or attached. In addition, the regiment may be employed in the offense, defense, delaying action and as an economy force unit.

ASSIGNMENT: Assigned to field army and corps.

CAPABILITIES: a. Perform reconnaissance and provide security for the corps over wide fronts.

b. Engaging in close combat for limited periods of time without reinforcements.

c. Maintaining communications over wide areas and at extended distances from other units.

d. Rapidly exploiting the success of nuclear weapons or other units.

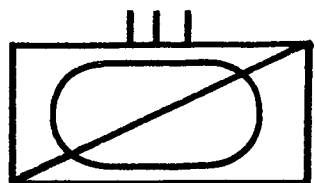
e. Target acquisition and surveillance by air and ground reconnaissance.

f. Providing defense against airborne and guerilla attack.

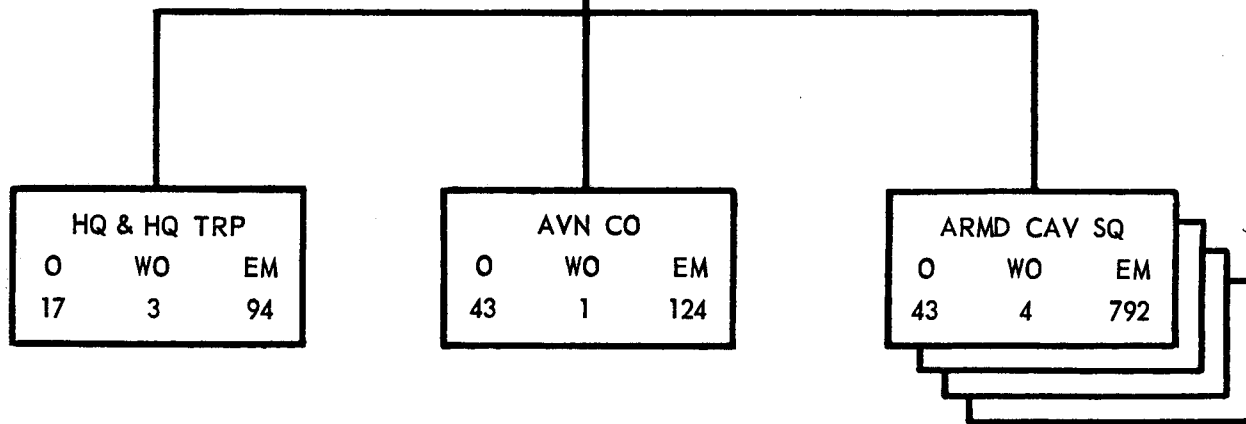
g. Protecting rear areas and lines of communications.

h. Controlling and coordinating substantial attachments of combat or combat support elements.

BASIS OF ALLOCATION: Two per field army; one per corps.



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SUMMARY OF EQUIPMENT

WEAPONS

| | |
|--|----|
| GUN TANK 90-MM OEM..... | 17 |
| GUN MACHINE CAL .30 BRG M-37 OEM..... | 18 |
| GUN MACHINE CAL .50 BRG HB FLEX..... | 2 |
| GUN MACHINE CAL .50 BRG HB OEM..... | 20 |
| GUN SUBMACHINE CAL .45..... | 36 |
| LAUNCHER ROCKET 3.5-INCH..... | 3 |
| PISTOL CAL .45 SEMIAUTOMATIC..... | 82 |
| RIFLE 7.62-MM SEMIAUTOMATIC LT BARREL..... | 22 |

VEHICLES

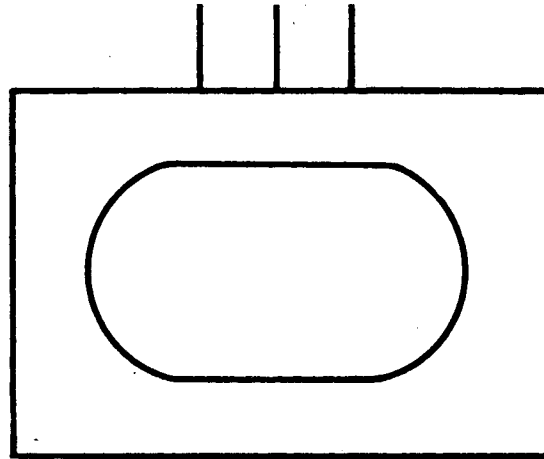
| | |
|---|----|
| BULLDOZER EARTH MOVING TANK MOUNTED..... | 1 |
| CARRIER PERSONNEL FULL-TRACK..... | 2 |
| TANK RECOVERY VEHICLE MEDIUM..... | 1 |
| TANK CMBT FULL-TRACK MED GUN..... | 17 |
| TRAILER AMPHIBIOUS CARGO 1/4-TON 2-WHEEL..... | 1 |
| TRAILER CARGO 1-1/2-TON 2-WHEEL..... | 2 |
| TRAILER TANK WATER 1-1/2-TON 2-WHEEL..... | 1 |
| TRUCK CARGO 2-1/2-TON 6X6 LWB..... | 1 |
| TRUCK CARGO 2-1/2-TON 6X6 LWB WVN..... | 1 |
| TRUCK UTILITY 1/4-TON 4X4..... | 3 |

SIGNAL EQUIPMENT

| | |
|----------------------------------|----|
| AN/GRC-3..... | 11 |
| AN/GRC-4..... | 9 |
| AN/PRC-8..... | 1 |
| AN/VRC-8..... | 1 |
| AN/VRC-13..... | 2 |
| RADAR SET PORTABLE AN/PPS-4..... | 1 |
| RADIACMETER IM-93/UD..... | 8 |
| RADIACMETER IM-108/PD..... | 4 |

NOTE. For manning chart see Tank Company, Armored Division, page 46.

TANK TROOP, 90-MM ARMORED CAVALRY SQUADRON



ORGANIZATIONAL CHARTS

ARMOR GROUP

MISSION: Command, control and supervision of one or more separate tank battalions assigned to a corps or field army.

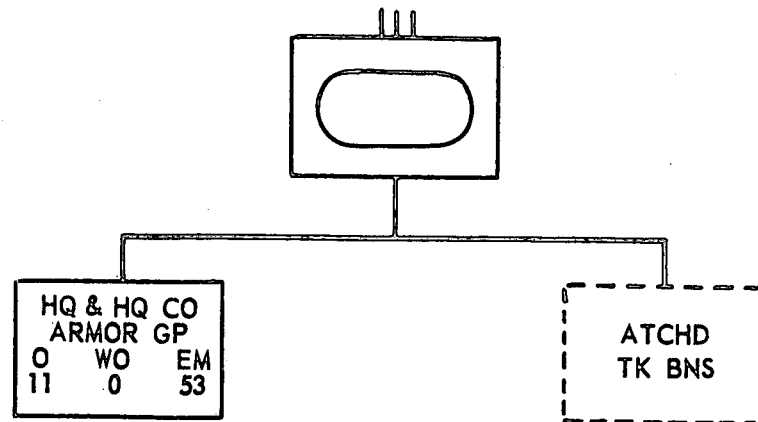
ASSIGNMENT: Assigned to field army or independent corps.

CAPABILITIES: a. Providing command, control and supervision of one or more separate tank battalions.

b. Command, control and supervision in combat of an armored task force comparable to a combat command for short periods.

c. Command, control, and supervision of specialized armored equipment such as flame-throwing tanks, mine exploding tanks, and tanks equipped with flotation devices, which may be assigned to the group to completely or partially equip one or more of the group's tank battalions.

d. Operation of armor section of corps and army headquarters when required.



MISSION: Command, control and supervision of one or more separate tank battalions assigned to a corps or field army.

ASSIGNMENT: Assigned to field army or independent corps.

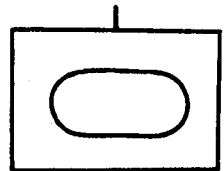
CAPABILITIES: a. Provision of command, control, and supervision of one or more separate tank battalions.

b. Command, control, and supervision in combat of an armored task force comparable to a combat command for short periods.

c. Command, control, and supervision of specialized armored equipment such as flame-throwing tanks, mine exploding tanks, and tanks equipped with flotation devices, which may be assigned to the group.

d. Operation of armor section of corps and army headquarters when required.

HQ & HQ



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GP HQ

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HQ CO

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CO HQ

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AIR CON TM

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GP HQ SEC

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COMM SEC

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ARMOR UNITS

Infantry and Airborne Division

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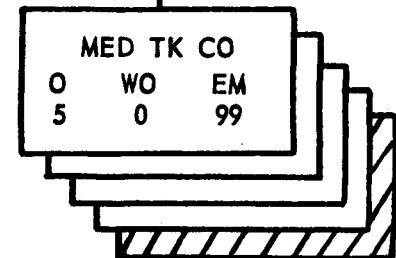
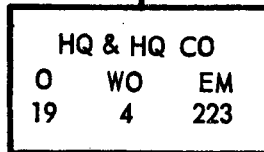
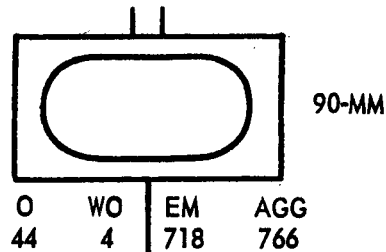
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ANNEX C

MISSION: To close with and destroy enemy forces, using fire, maneuver, and shock action in coordination with other arms.
 ASSIGNMENT: Organic to Infantry Division, TOE 7D.
 CAPABILITIES: a. Attacking or counterattacking under hostile fire.
 b. Destroying enemy armor by fire.
 c. Supporting infantry units by fire, maneuver, and shock action.
 d. Exploiting after breakthrough with high cross-country mobility.
 e. Exploiting rapidly the effects of mass destruction weapons.
 f. Fighting as infantry when required; defending itself against hostile ground attack.

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4/10



NOT INCLUDED IN REDUCED-STRENGTH BATTALION.