MECHANIZED CAVALRY

REPRINT - 1936

ACADEMIC DIVISION
THE CAVALRY SCHOOL
Fort Riley, Kansas

1932 - 1933

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Fort Riley, Kansas

INSTRUCTION CIRCULAR No. 6 September 18, 1934

1. Part 1, MECHANIZED CAVALRY, 1932-1933 was printed before the Scout Car was incorporated in the organization of the Cavalry Regiment.

Part 1, MECHANIZED CAVALRY will be used as a text for instruction in Armored Cars.

2. The advent of Scout Cars, however, makes certain changes necessary as Scout Car Regulations (Tentative) soon to be issued will be the text for Scout Cars.

a. The Scout Car has taken over the less distant reconnaissance missions formerly performed by Armored Cars for security detachments of Cavalry.

b. Cavalry security detachments will usually have Scout Cars attached to them.

c. Scout Cars may perform distant reconnaissance missions when Armored Cars are not present.

d. Distant reconnaissance missions will normally be performed by Armored Cars when available.

e. Armored Cars may be attached to security detachments even though these detachments have their own Scout Cars when the situation is such that long distance reconnaissance is no longer necessary, or when sufficient Armored Cars are available. Such attachment is justified.

By order of the Assistant Commandant.

JOHN MILLIKIN,
Lieutenant Colonel, Cavalry,
Executive.

OFFICIAL:

P. C. FEBIGER,
Captain, Cavalry,
Secretary.

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CONTENTS

MECHANIZED CAVALRY

PART I

GENERAL

1. DEFINITION. — *a.* From a military viewpoint mechanization is the combining of armor protection, firepower and mobility in motor-propelled vehicles, for assuring effective maneuver and striking power in battle. Mechanization, as applied to cavalry, seeks to transplant the cavalry characteristics of mobility, firepower and shock to completely motor-propelled fighting units largely equipped with armored vehicles.

b. Mechanized cavalry consists of self contained units equipped with motor-propelled armored vehicles designed for reconnaissance and combat.

c. Those motor vehicles essentially of high road mobility and long radius of action, having fire power and protective armor, and whose mission is essentially reconnaissance, are hereafter designated armored cars. They possess varying characteristics.

d. Those types of armored vehicles having essentially fighting missions, including shock-action, and possessing firepower and comparatively heavier armor protection, and a high degree of cross-country mobility, are hereinafter designated combat cars. They also vary as to characteristics, but in general are designed to operate on either wheels or tracks.

e. Those motor vehicles having a comparatively short range of action, greater power of shock action, and

a greater amount of protective armor are designated as tanks. Tanks are normally employed by infantry.

f. Carriers are motor vehicles, preferably armored, to transport weapons, supplies and personnel to or on the battlefield.

g. Each type of armored vehicle may have varying powers and limitations dependent upon armor and armament carried and method of obtaining traction.

2. CLASSIFICATION.—*a.* Due to the development of armored fighting motor vehicles having varying combinations of characteristics, an exact classification of armored vehicles is difficult.

b. Armored cars and combat cars may be classified according to equipment, armament, and crew, into two main types:

(1) Command, and

(2) Fighting.

c. Tanks are infantry weapons and may be at times attached to Cavalry. They may be classified according to size, weight of armor, and armament into three main types: light, medium, and heavy. A fast, light tank is the type most suitable for action with cavalry.

3. CHARACTERISTICS. — *a. Armored Cars.* — Despite certain differences, all armored cars have in common some general characteristics.

(1) Favorable characteristics are as follows:

Mobility. — Combined with a long radius of action, the mobility of the armored car renders it especially valuable to perform long distance reconnaissance and harassing and delaying missions.

Fire Power.—The armored vehicle may deliver fire while the car is either moving or halted. When the car is in motion the accuracy of the fire is impaired to a varying degree, and, when practicable, firing, especially at mid or long ranges, should be done when the car is halted. The

ideal is a heavy burst of surprise fire from a concealed car, followed by a quick get-away to another good and covered firing position.

Invulnerability.—With the quantity of armor of good quality that may be placed on armored cars, the armor will generally protect against shrapnel bursts, and ordinary caliber .30 ammunition, and against armor piercing caliber .30 at mid and long ranges.

Moral Effect. — Armored vehicles have a great moral effect and they may be used to disorganize hostile resistance by rapid movement and sudden bursts of surprise fire.

(2) Unfavorable characteristics are possessed in common by all armored cars as follows:

Restricted Mobility.—If wheeled vehicles, armored cars may move freely only over roads or comparatively smooth ground, and can negotiate rough going only with difficulty; they may be stopped by natural or artificial obstacles.

Limited Observation. — The armored vehicle is provided with observation ports, which if open, allow practically unrestricted observation and, if closed, restricted observation through eye-slits. However, unless part of the car is exposed observation from within the car is difficult. Extended observation without exposing the car may be obtained only by causing personnel to leave the car for that purpose. Observation from within the car is quite limited at night.

Easily Discovered.—The height of the car, the noise it makes when in motion, and the dust it creates under certain conditions permit it to be rather easily discovered.

Breakdowns. — Armored vehicles of present types are subject to the usual motor and mechanical troubles of motor vehicles.

Weight. — Both relative weight and absolute weight must be considered. Relative weight is the proportion between load to be moved and horse-power. Absolute weight is the total poundage, and the greater the weight the more the work required in strengthening bridges and culverts, and in pulling vehicles out of holes and ditches.

Draws Fire.—Armored vehicles may be expected to draw fire as soon as they come within range, consequently, they ordinarily should not be stationed near other troops.

b. Combat Cars. — (1) Favorable characteristics of this cavalry fighting vehicle are:

Mobility.—All combat cars possess a high degree of cross-country or tactical mobility derived from the employment of a track-laying device.

Invulnerability. — All combat cars may be armored to provide all-around protection against shrapnel bursts and armor piercing caliber .30 projectiles at all ranges. Combat cars may be armored to include protection against present cavalry automatic weapons and vary widely in maximum speeds obtainable. In proportion to their speed on the battlefield combat cars derive protection from the difficulty inherent in hitting a moving target.

Fire Power.—Actual and proposed armaments of combat cars vary between the limits of caliber .30 machine guns and 75-mm guns, and preferably with a combination of weapons in each car. As fire usually is delivered from moving cars, accuracy of the fire is low except at the shortest ranges.

Shock. — Combat cars possess the tactical characteristic of shock and their value lies in their ability to close on and crush an enemy in position.

(2) Unfavorable characteristics possessed in common by all combat cars and tanks are as follows:

Limited Observation. — Even to a greater degree than is usual in armored cars, is observation limited from within the combat car when all ports are closed.

Easily Discovered. — The size of the combat car, the noise it makes when moving, and the trace or track it leaves usually lead to its early discovery.

Weight. — The absolute weight is in excess of the safety limits of many culverts and bridges found on country roads; this factor will often limit the strategical mobility of the combat car.

Breakdown. — A larger percentage of automotive troubles will appear in the combat car than in the armored car or commercial automobile.

Difficulty in Control. — The problem of exercising battle control over combat-car units has not yet been fully solved.

Fatigue of Crew. — Due to limited space, and construction of the combat car, the fatigue of the crew during continued operations or operations at speed must always be borne in mind.

4. ARMOR PROTECTION. — The use of armor for protecting fighting motor vehicles results in a compromise between the opposing factors of protection and mobility. The weight of armor one inch thick is approximately forty-four pounds per square foot. The penetrative effect of small arms projectiles now in use is about as follows:

.30 caliber service will not penetrate .3 inch armor plate.

.30 caliber armor piercing will penetrate .3 inch armor plate up to short ranges.

.50 caliber service will penetrate .5 inch armor up to about 500 yards distance.

.50 caliber armor piercing will penetrate one inch of armor at least to 300 yards distance, and ½ inch armor at 1000 yards.

37-mm gun projectiles at normal impact will penetrate one inch of armor at 500 yards.

The attempt to provide absolute protection for armored vehicles against the effect of hostile small arms fire by piling on armor can result only in decreasing the mobility of the vehicle to such a degree that it becomes practically valueless to cavalry. Consequently, it becomes necessary to armor the armored car and combat car to provide a reasonable degree of protection and to rely upon their speed on the battlefield and the initiative and judgment of the personnel for further protection.

PART II

MECHANIZED CAVALRY WITH HORSE CAVALRY UNITS

SECTION 1

ARMORED CAR UNITS WITH HORSE CAVALRY

SECTION I

ARMORED CARS WITH HORSE CAVALRY

CHAPTER I

INTRODUCTION

5. GENERAL. — When supplemented by armored car units the cavalry arm may expect to obtain the following advantages:

a. Extended reconnaissance.

b. Conservation of horse and man power.

c. Increased mobility.

d. Added fire power

e. Improved communications.

f. More efficient battle reconnaissance.

6. DEFINITION.—Armored cars are motor vehicles having fire power, high road mobility, armor protection and long radius of action whose missions are essentially reconnaissance and whose fighting ability is sufficient to enable them to accomplish their missions.

7. CHARACTERISTICS. — *a. Mobility.* — (1) This feature, combined with a long radius of action, makes possible long distance missions and conserves man and horse power in one of the cavalry's most important missions: reconnaissance.

(2) Since it is apt to be a good target for hostile fire, the safety of the armored car largely depends upon its handiness in operation, and its ability to vary its speed. Variations in speed, and ability to move at speed, are essential factors in the protection of the crew and vehicle, and, in addition, add greatly to the morale of the personnel. Mobility is affected by the relative and the absolute weight; reserve

power; design; reserve of gas and oil; efficiency and initiative of the crew; terrain; and weather conditions.

b. Armor.—The design of armored cars normally used with horse cavalry, gives reasonable protection to the crew against hostile small arms fire. This favors accurate and well observed fire from the car itself. The vulnerable parts of the car unless suitably armored, may readily be disabled. The sense of security and protection given by the armor is conducive to the boldness and initiative of the crew.

c. Fire Power.—In general, it is essential that all armored cars have weapons to use against hostile personnel and weapons with which to combat hostile armored cars.

d. Demolition Agent.—Due to their mobility, armored-car units may be given distant missions involving demolitions. For such special missions demolitions may be carried in the cars.

e. Observation.—Compared with the mounted trooper the observation of the crew from within the armored cars is considerably less. However, the mobility and cruising radius of a car make it possible to cover a much greater area than any other agent of ground reconnaissance. The small apertures in the turret and sides of the body reduce vision from within the car, especially with ports closed under battle conditions.

f. Difficulty in Concealment.—In spite of modern camouflage methods, the armored car presents a good target for all types of weapons. In open country where cover is scarce it presents an excellent target. In dry, dusty country the clouds of dust raised when traveling at speed make it very easy to locate.

g. Vulnerability.—The operation of an armored car depends primarily on its ability to move at speed. The vital parts of the machine, even though well protected, are always a potential hazard under fire. A pneumatic tire punctured by small arms fire when the car travels at speed may result in a wreck.

h. Effect of Improper Maintenance.—No piece of army equipment reacts unfavorably more quickly to negligence than does the motor vehicle. With its large cruising radius and excessive hours of use, it is essential to the life of the vehicle and its continued good performance that it have systematic servicing and checking of wearing parts.

i. Confinement to Roads.—Although armored cars are normally employed on roads, this does not preclude their use across country when necessary to accomplish a given mission. It must be remembered, however, that the cross-country speed of these wheeled vehicles is far below their rate on good roads and that they are extremely sensitive to terrain. For most cross-country work the horseman is usually more certain than the armored car.

j. Susceptibility to Demolition Operations and Barricades.—A well-constructed barricade across a road flanked by impassable ditches will deny further immediate advance to armored cars provided there is an active defense to prevent removal of the obstacle.

k. Conservation of Man and Horse Power.—Within certain limits, various reconnaissance missions formerly assigned to horse patrols may now be given armored cars. A saving of man and horse power is thereby affected.

l. Cruising Radius.—The reconnaissance type of armored car should be able to travel at least 300 miles on one filling of gas, oil and water. This will permit it to carry out a mission at about 100 miles distance with the usual "looping" both ways.

m. Camouflage.—To minimize the effect of hostile observation, armored cars may be camouflaged by using foliage or by painting with colors harmonizing with predominating colors in the theater of operations.

CHAPTER II

ORGANIZATION

8. GENERAL.—The following table of organization, No. 414-P, shows the personnel and equipment of the Armored Car Platoon and Troop, Cavalry Division, which will be used as a basis for tactical problems unless changed by instructions in each particular case.

Due to the lack of funds and personnel, the organization and equipment of the Armored Car Troop now a part of the 1st Cavalry Division do not conform to the tables as issued by the War Department.

The Armored Car Squadron at present is a component only of the War Strength Cavalry Division; it comprises a headquarters and three armored-car troops.

The armored car troop of the mechanized regiment differs in organization from that of the armored car units of the cavalry division. See Tables of Organization appended to Part III.

T/O 414 P

ARMORED CAR TROOP, CAVALRY DIVISION

1	1 Units	2 Specialists rating (class)	3 Troop headquarters	4 1 platoon	5 3 platoons	6 Total troop
2	Captain		1			1
3	First lieutenants		[b]1			1
4	Second lieutenants			1	3	3
5	Total Commissioned		2	1	3	5
6	First sergeants		1			1
7	Staff sergeants, including		1			1
8	Repair		[c](1)			
9	Sergeants, including		2	3	9	11
10	Mess		(1)			
11	Platoon			(1)	(3)	
12	Section			[c](2)	[c](6)	
13	Supply		(1)			
14	Corporals			[c]2	[c]6	6
15	Privates, first class, and privates, including		29	12	36	[a]65
16	Armorer	4th	[c](1)			
17	Buglers		(2)			
18	Chauffeurs, cars, cross-country	6th	(4)			
19	Chauffeurs, trucks	5th	(4)			
20	Clerks	6th	(1)			
21	Cooks	4th	(1)			
22	do	5th	(1)			
23	Drivers, armored car	4th		(4)	(12)	
24	Gunners, machine gun	5th		(4)	(12)	
25	Gunners, submachine gun			(4)	(12)	
26	Mechanics, general	3d	[c](3)			
27	Assistant mechanics and gunners		(12)			
28	Total enlisted		33	17	51	84
29	Aggregate		35	18	54	89
30	Cars, armored			4	12	12
31	Cars, cross-country		1	1	3	4
32	Trucks, cargo 2½-ton		3			3
33	Trucks, tank, gas		1			1
34	Guns, machine, caliber .30			4	12	12
35	Pistols		35	18	54	89
36	Rifles			8	24	24
37	Submachine gun			4	12	12

[a] Includes—
21 privates, first class
44 privates

[b] The senior lieutenant acts as second-in-command and supply officer.

[c] Each platoon is divided into 2 sections of 2 cars each, each section being commanded by a section sergeant who also acts as commander and observer of his car, the other car being commanded by a corporal. Each car has a crew of 1 sergeant (or corporal) as commander and observer and 3 privates (driver, gunner, machine gun, and gunner, submachine gun).

[e] Repair unit.

Summary of specialists' ratings:

3d class	3
4th class	14
5th class	17
6th class	5

NOTE—The equipment listed hereon is tentative pending publication of Tables of Equipment which will govern.

CHAPTER III

COMBAT PRINCIPLES

9. GENERAL.—*a.* It should constantly be borne in mind that an armored-car unit is primarily a reconnaissance agent, and that its combat value always is incidental or secondary. However, when occasion requires or opportunity offers, and armored-car unit may carry out combat missions or operations, of importance to the cavalry force with which they are working.

b. When it is necessary to operate by stealth or to make a detailed reconnaissance of a critical area denied to armored car units by character of the terrain or by hostile defensive organization, then dismounted reconnaissance must be made by personnel of the armored-car crews. Precaution must be taken to prevent dismounted personnel from being cut off from their vehicles, and to insure that the mobility and fire power of the vehicles are maintained for their own security.

c. During darkness, the work of armored-car units is restricted due to the danger of being seen and heard while handicapped by their own limited observation and decreased mobility. Where the terrain permits, however, and the situation demands their use, armored-car units may perform valuable service at night by reconnoitering a road net; by maintaining contact with hostile forces previously met during daylight; or, by covering bottle-necks of approach, as mountain passes or stream crossings.

d. It must be borne in mind that the ideas presented in this chapter are merely general, set down to illustrate the operations of armored-car units, and that they are not final in form. Commanders of armored car units of any size must rely upon their own judgment and initiative.

10. PLATOON AND SECTION. — *a.* The platoon is the basic unit of maneuver or combat. It is capable of being

divided into two sections for the accomplishment of a mission, but subdivision of a section should not be attempted. The principle of using two-car teams should be observed; consideration of the dangers of mechanical breakdown and road accidents, and of the need of mutually supporting fires makes this apparent.

Ordinarily, the platoon commander should receive but a single mission from his troop or other immediate commander.

The formations the platoon may adopt are usually limited by the desirability or the necessity of traveling on a road; exclusive of this limitation, they should be left mainly to the judgment of the platoon commander.

b. There can be no rule governing the location of the platoon commander within his platoon. At times he may ride in his platoon cross-country car, using it as a command car or as a liaison car; at times he may find it expedient to ride in the leading or point car of his platoon. If reconnoitering a road toward the enemy, the platoon sergeant or section leader may often best ride in the second car, from which all signals are given; the leading car, acting as a point, will move at increased speed between critical locations; the second car will move in support of the point car, keeping it within observation and supporting distance by variation in speed. The last two armored cars, acting as a team under the platoon sergeant or section leader, move with greater distance from the second car, but ready to support the action of the first two cars (or section) either by fire power, advancing along the road, or by encircling movement off the road.

c. In advancing on one route with the platoon concentrated the unit normally should advance by bounds in the following formation: Figure 1.

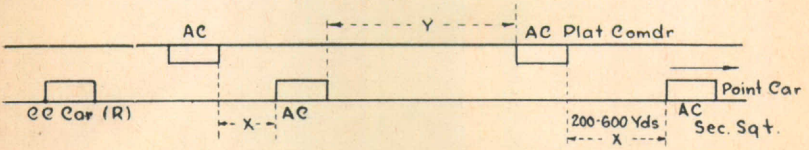


Figure 1

Distances are governed by factors of visibility and mutual support.

The cross-country car should follow in the rear by bounds, within easy supporting distance, depending on the terrain and visibility. It will be used for reconnaissance and for liaison, and will be governed by relayed signals.

d. When the platoon leaves the road in combat situations, it adopts some variation of line, of echelon, or a combination of both. See paragraph 7, Chapter I.

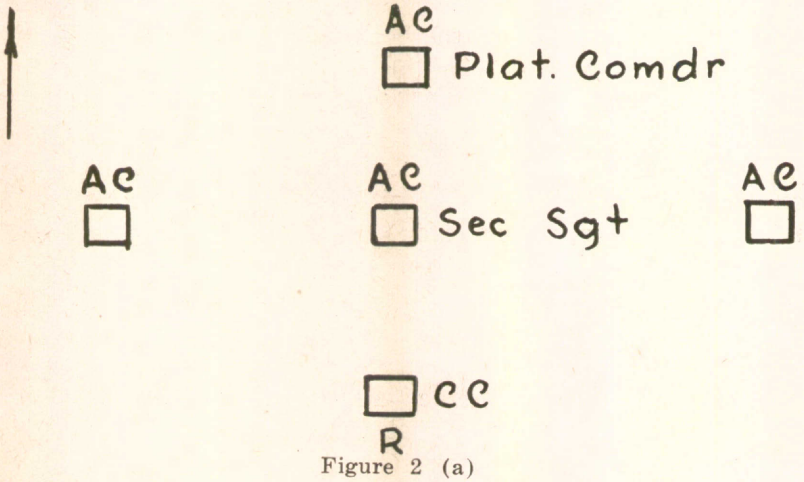
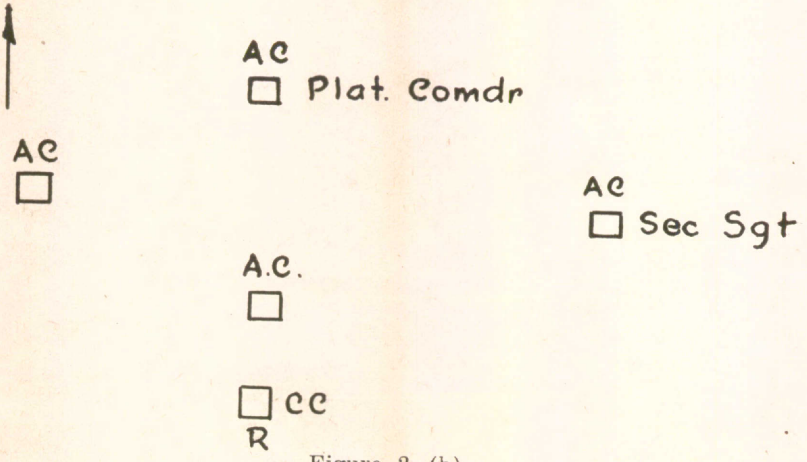


Figure 2 (a)



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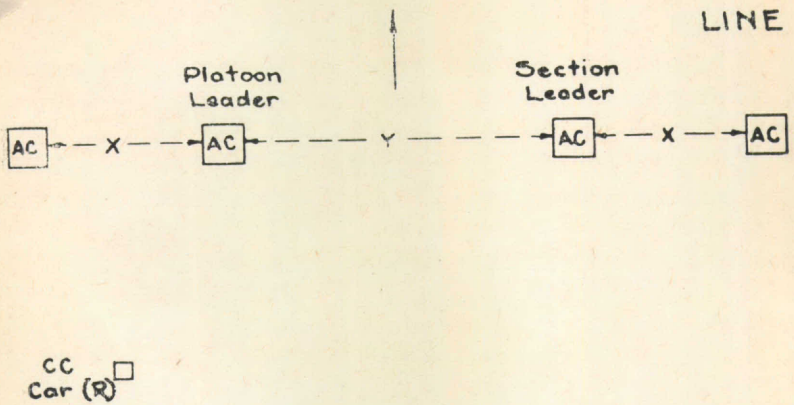


Figure 2 (c)

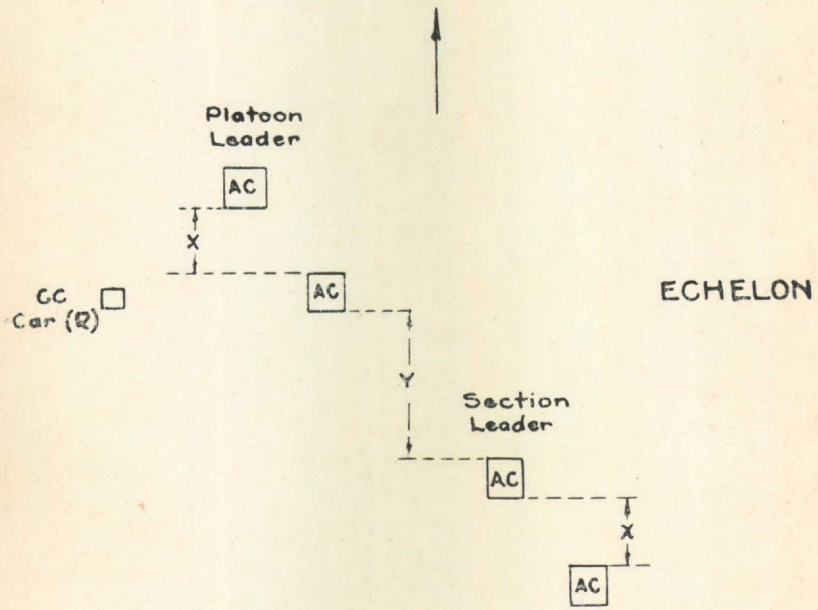


Figure 3

This formation (Fig. 3) disposes the platoon in depth, permits mutually supporting fires, and minimizes the effect of the fire of artillery and anti-armored-car weapons. It presupposes a threat from the flank.

e. The normal fire tactics include rapid movement to a favorable firing position, halting and delivering the maximum of fire, followed by a rapid change of position. Full advantage of the mobility of armored cars is taken to open fire at the minimum ranges consistent with EFFECTIVE FIRE combined with CONTINUED FREEDOM OF ACTION. In the approach, advantage is taken of concealment afforded by the terrain to secure the full effect of surprise. Sufficient distance between armored cars must be taken in all situations to give timely warning and insure freedom of maneuver to the remaining cars if the leading car is ambushed.

f. In reconnaissance, the primary duty of armored cars, many situations will occur which cannot be anticipated. The tactical handling of the armored car platoon must depend upon circumstances and the common sense of the commander.

In general, the platoon must move by bounds. Where danger of ambush is great or secrecy is essential, the cars may be held under cover at the end of each bound and men dismounted to observe carefully to the front and flanks. Where time will not permit this method of reconnaissance, or where the dismounted men will be dangerously exposed to hostile patrols in the vicinity, then observation must be had from within cars that are exposed to the minimum degree.

In reconnoitering a zone, the armored car platoon may find it desirable to operate by sections. A possible disposition of the platoon in a situation of this kind is shown in Figure 4.

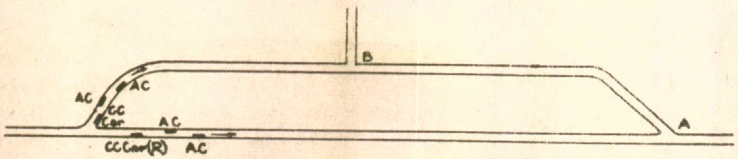


Figure 4

In this case let us say the platoon less one section, continues on the principal route in the zone, and sends one section to proceed along a parallel route to the north. It is to be noted that this division keeps the "two-car" team intact. Whether the cross-country car is sent with the northern section would depend on the situation. The platoon commander must give detailed instructions to the detached section and prescribe an assembly point such as "A" for rejoining the platoon.

Let us suppose now that the detached section reaches the point "B" and lateral reconnaissance is necessary to the north. See Figure 5.

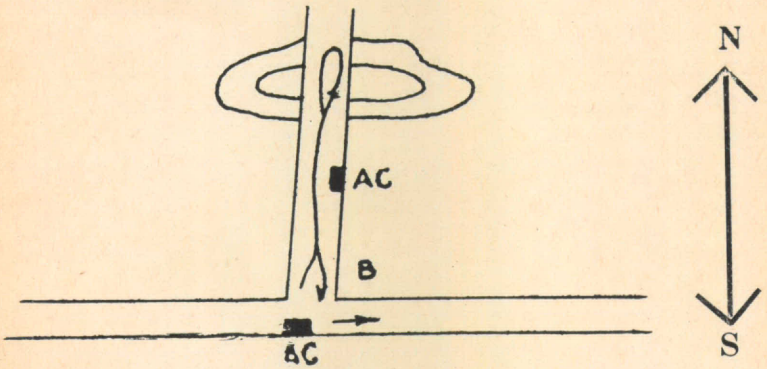


Figure 5

Here the section leader's car might remain on the axis of advance and the remaining armored car be sent to perform the reconnaissance. The section leader's car would cover the axis of advance and be prepared to move to support the car making the reconnaissance. Notice of the need for support would be by observation or the sound of firing. In no case should the reconnoitering car be sent beyond supporting distance and if this is necessary the entire section should make the reconnaissance and attempt to make a loop to regain the axis of advance.

Again, let us assume the platoon on reconnaissance approaches a town on the axis of advance. See Figure 6.

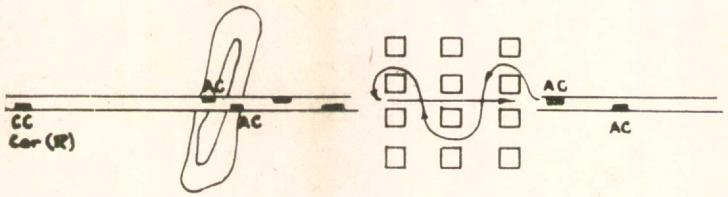


Figure 6

In this case the leading section should be rushed rapidly through the town by the most direct route. The remainder of the platoon should halt short of the town in observation and to cover the advance of the leading section. Upon arrival at the far side of the town one of the cars of the leading section should return by a roundabout route through the streets and signal "all clear" when the remainder of the platoon will advance.

Again, let us assume that the platoon encounters a barrier on the axis of advance. See Figure 7.

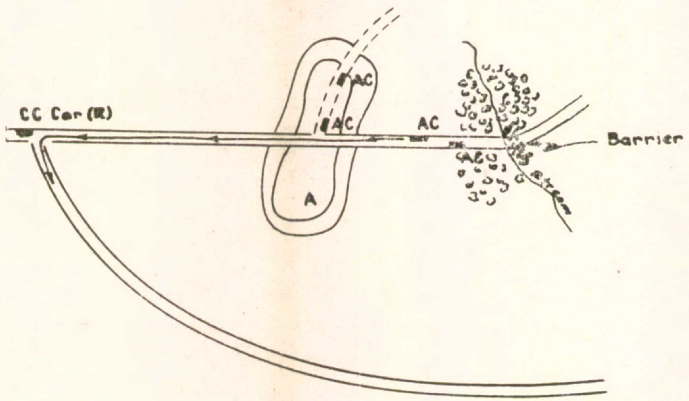


Figure 7

Here the point car of the platoon might be surprised. The remainder of the platoon would have closed up as soon as the point car disappeared over the ridge A. Then

the barrier is encountered, and assuming it is covered by suitable weapons, there is no recourse for the point car but to back out of action to the cover of Ridge A. This movement should be covered by the remainder of the platoon, care being taken to clear the road as much as possible, and maximum fire power being developed at the earliest possible moment. Once withdrawn from action, the point car should be ordered back to take an alternative route followed by the remainder of the platoon.

g. In offensive action in conjunction with other troops the armored car platoon may be required to cooperate by attacking an enemy flank or rear. The formations and tactics of the platoon should resemble those outlined above. Its objectives should be critical points, and effective firing positions should be selected. The cars should be kept constantly changing position even though it is simply back and forth on a road, and reconnaissance must carefully be maintained to prevent the unit from being cut off.

h. Likewise, in withdrawals and delaying actions, the platoon will be required to cooperate with other troops. The platoon commander must be familiar with the general plan and must study carefully the road net. Every effort must be made to delay the enemy at natural obstacles. Firing positions suitable for withdrawal should be gained rapidly and the maximum rate of fire of all cars should be developed as soon as possible. If the firing position is satisfactory, the development of the enemy's attack and the operations of hostile anti-tank weapons dictate the necessity of changing position. Care must be taken that cars are not cut off.

11. TROOP.—The troop commander will receive his orders from the armored-car squadron commander or from the commander of the troops to which attached. Seldom, if ever, will his troop be engaged as a unit. In any event, he assigns missions and coordinates the action of his platoons. The actual fighting and performance of the missions must be entrusted to the platoon commanders. The

troop commander must provide for maintenance and supply and must insure that proper communication is maintained.

It can be seen, therefore, that the armored car troop commander is the coordinator of the action of its platoons. Even when employed as a unit, the road net and terrain will usually permit only the assignment of missions to platoons and the changing of these missions to conform to the situation.

12. SQUADRON.—The squadron commander will exist only in the war strength division. His duties will be mainly administrative and in a staff capacity. His orders will normally come from the division commander, and his recommendations for the missions and employment of armored cars will frequently be required. He will designate missions for the troops of the squadron and will coordinate their action.

The squadron rarely will be employed as a unit and ordinarily its action will cover a very wide front. The most difficult problems within the squadron will be those of supply, of communication and the means taken to prevent delay in getting information through promptly and by the most direct route.

CHAPTER IV

COMMUNICATION

13. MEANS OF COMMUNICATION. — Troop headquarters and each platoon are equipped with command or cross-country cars equipped for radio communication between the platoon or troop and to higher headquarters.

Radio should be employed in communication within the troop and squadron and from the platoon, troop, and squadron to superior units. In this connection the armored-car unit commander must always consider the time, distance involved, and whether the message to be sent must be cryptographed. If the distance is short, and especially if the message has to be cryptographed, time usually will be saved by employing a motor vehicle to carry the message. Frequently a decision as to whether or not messages may be sent in the clear must be obtained from a superior headquarters. Radio may be used to communicate with aircraft whenever the sets in use permit this.

Panels for communication with aircraft should be employed in connection with dropped and pick-up messages and in sending prepared code messages to aircraft. In the latter work the authorized Air-Ground Liaison Code should be employed. The panels should be carried.

Pyrotechnics at present available to armored-car units include the Very Pistol and the Ground Signal Projector. Each armored car should be equipped with the Very Pistol, and the command car should carry a Very Pistol and projector. The codes used should be those improvised within the unit, and those set down by existing Signal Operations Instructions.

Visual signals available will be by means of flags, or ordinary arm signals. No flag equipment is issued at the

present time and these will have to be improvised by each unit as required. The arm signals used should correspond with existing cavalry arm signals as far as this is practicable. In using flags or arm signals attention will often have to be obtained by firing a burst from a machine gun, by whistle, or other appropriate sound signal.

The use in war of impressed motor transportation for reporting or relaying information by armored-car units may be anticipated.

CHAPTER V

SUPPLY AND MAINTENANCE FOR ARMORED-CAR UNITS OF A CAVALRY DIVISION

14. SUPPLY AND MAINTENANCE FOR ARMORED-CAR UNITS OF A CAVALRY DIVISION.—The supply of armored car units devolves primarily on the Armored-Car Troop Commander who is assisted in this matter by his Supply and Maintenance Officer.

Supplies are obtained by the Supply and Maintenance Officer at refilling points established by the superior unit or are received direct from that unit.

Within the troop there are available 3 (2½ ton) cargo trucks and one gas and oil truck (300 gallons) for supply and maintenance. These are normally loaded as follows:

1—Gas and oil.

1—Supply and ammunition.

1—Rations and kitchen equipment.

1—Spare parts and maintenance.

In the scheme of supply the Squadron Supply Officer acts as a coordinator. He consolidates the requirements of the troop of the squadron, assists the superior unit in selecting suitable refilling points, and supervises the activities of the troop Supply and Maintenance Officers.

With the light repair unit he is equipped to handle all repairs to vehicles up to the time the equipment of a permanent machine shop is required.

The subsistence and supply of the personnel of squadron headquarters is also a care of the Squadron Supply

Officer. However, under present tables of organization the matter of subsistence will have to be handled by the attachment of the personnel to one of the troops of the squadron.

The maintenance inspection of all vehicles in operation as a part of daily routine is very essential to their proper functioning. The replenishing of oil, refueling and especially lubrication of the wearing parts should be checked at halts or at the end of the day's operations.

To insure the maximum number of cars in operation, the armored-car troop should maintain a light repair unit; otherwise, due to the extensive zone of action normally covered by the troops, and the punishment received by the individual car the loss of cars from breakdown will be excessive. Time and means for mechanical preventive maintenance is the sole assurance that the vehicles will be in proper condition when needed.

As a very general guide, the maintenance duties of the crew of the armored car may be listed as follows:

a. The car commander supervises the driver and the gunner, inspects the car, guns and mounts, and checks equipment, oil and fuel for condition, quantity and quality. He stands in the same relation to his car as does a corporal to his squad, and he is responsible to his platoon commander for the condition of his car and equipment, the discipline of his men and the care of their equipment.

b. The driver: (1) Daily: (a) Before departure on any mission, checks oil level in crankcase, water level in radiator, amount of gasoline in tank, spare oil, water and gasoline cans, spare tire, spare parts and tools.

(b) On return from any mission dusts off or washes the car, drains radiator in cold weather, refuels.

(2) When required, and at least each week: Cleans exterior and chassis: cleans body inside and out, oils and greases chassis and motor; checks fuel, ignition, propelling and steering systems for loose connections, loose bolts

or broken or missing parts; checks tire pressure and condition of battery.

c. The gunner. (1) Daily: Oils and cleans guns, inspects and oils gun mounts, fills ammunition racks, inspects fire extinguishers.

(2) Weekly. Cleans gun spare parts and ammunition, cleans and greases turret mechanism.

d. If the crew includes a fourth man, he will be the submachine gunner. He will assist both driver and gunner as directed, and will take charge of the sub-machine gun and its ammunition.

e. The supply and maintenance of the armored-car troop of a cavalry regiment, mechanized, is covered in Part III.

CHAPTER VI

EMPLOYMENT OF ARMORED CARS BY LARGER UNITS

15. GENERAL.—All cavalry officers should be familiar with the elementary tactics of armored-car units in order that they may understand their powers and limitations and, accordingly, the missions they are best suited to perform. From this time on, certain numbers of cavalry officers will be assigned to armored-car units. Furthermore, cavalry units will frequently be working with, or have armored cars attached to them, and it is necessary that the principles governing their employment be well understood.

In any situation in which armored cars are available to the cavalry commander, the latter at once is confronted with the question of what missions they shall be assigned. In this connection, it is certain that the recommendations of the armored-car unit commander should have great weight, but the decision will lie with the cavalry commander and his will be the responsibility.

It must be noted that the cavalry commander should simply assign missions. In order that the armored-car commander may carry out his mission with the maximum success and that he may act immediately and intelligently in an unexpected situation, full information of the enemy and of our own situation and the plan of the commander must be given him.

Armored cars working with horse cavalry are not expected to perform the duties of normal close-in security detachments. The mounted trooper still remains the most efficient means of seeking out the small hostile patrol, and of reconnoitering in connection with close-in security. The characteristic of the armored cars fit them to cover long distances in locating larger hostile bodies, or in securing positive or negative information as to hostile occupancy of specific areas, or in observing important potential avenues of enemy approach.

The possibility of improvising armored cars from impressed motor vehicles should always be kept in mind by the cavalry commander. It will not be unusual in any future war to have numbers of improvised armored cars operating with cavalry units.

Armored cars should not be marched in column with other troops having less mobility. They must advance by bounds either ahead of or behind the column, or in suitable spaces in the column, or by a different route.

16. SECURITY.—Under security may be classed the use of armored cars with advance guards, rear guards, flank guards, and outposts.

In the case of advance guards, armored cars, if attached, are most valuable in performing patrolling missions to the front and flanks, thereby saving horseflesh, and assisting greatly in properly committing the advance guard to action. However, before attaching armored cars to an advance guard the cavalry commander must always consider whether or not there is a need for long distance reconnaissance beyond the scope of the advance guard. If such a need exists, then no armored cars should be attached to the advance guard unless a sufficient number are available to supply the needs of the advance guard and also perform the long distance reconnaissance mission.

In the case of rear guards armored cars will be of great assistance in performing patrolling missions, maintaining contact with and delaying the enemy, and giving early in-

formation of encircling maneuvers. The armored cars should normally be attached to the rear guard, and their commander should be thoroughly informed by the rear guard commander of all his plans, and the positions he intends to hold for delaying purpose. Here again the superior commander must keep in mind, however, the possible necessity for long distance missions such as meeting a flank threat or keeping in touch with an encircling force, and should not hesitate to keep the cars under his control if these missions are sufficiently important.

In the case of flank guards a sufficient number of armored cars in proper proportion to the strength of the flank guard may be attached. The cars are invaluable in flank guard situations to perform patrolling and long distance reconnaissance missions. They will simplify the problem of occupying successive key positions and can considerably delay an enemy flank threat. The superior commander should seldom attach all the available armored cars to the flank guard but should consider what additional missions the main body of his command will require.

In outpost work during daylight hours armored cars are valuable for reconnaissance well in front of the outpost line of resistance and for maintaining lateral communication and contact between outguards and detached posts. When they are to be employed in this work they should be attached to the outpost. In many situations, however, the armored cars may be required for long distance missions beyond the scope of the outpost, such as locating approaching enemy columns or picketing an enemy bivouac and the roads leading therefrom. In this case the cars should be kept under control of the superior commander and should not be attached to the outpost.

At night wherever possible, armored cars should be held back of the outpost line of resistance where they may be given an opportunity to rest, maintain vehicles and replenish ammunition. In this case the cars should be held under control of the superior commander ready to move via

reconnoitered routes to likely points of enemy attack on the outpost line. Where the situation requires it, however, and the road net permits, the cars may be employed in night reconnaissance of roads, to report the approach of any hostile elements, or to picket the bivouac of an opposing force.

17. RECONNAISSANCE. — In reconnaissance missions where a zone of advance is assigned a cavalry command, armored cars are of great assistance to the cavalry. In no sense should the armored cars be considered as having replaced the usual cavalry reconnaissance detachment, but they are a means of extending the work of these detachments by supplying information or performing missions normally beyond the scope of these detachments. As in the case of advance guards, the question invariably comes up as to whether the cars should be attached to the reconnaissance detachments or be employed under control of the superior commander. As in the case of advance guards, also, the answer is somewhat the same. Armored cars attached to reconnaissance detachments undoubtedly save horseflesh in patrolling, and assist greatly the work of these detachments, but when long distance missions exist such as the locating of large enemy bodies in the zone, or the trend of advance of these bodies, the cars should be employed under control of the superior commander and be assigned these missions. The ideal is to have sufficient cars to attach small numbers to reconnaissance detachments and employ the bulk on long distance missions.

In reconnaissance the control of armored cars is a matter of great importance and difficulty. This should invariably be done by assigning as objectives lines to be reconnoitered, and wherever possible by indicating future action after the objective is gained.

Radio is the primary means of communication. A table showing the probable time and place message centers are to be established should be furnished armored-car units. Points at which further orders are to reach armored-car units should be indicated whenever possible. Full use should be made of all the means of communication available, and in addi-

tion, impressed motor transportation should be employed in sending out messengers, and advantage taken of the cooperation of aviation in locating armored cars and in getting messages to them.

18. COUNTERRECONNAISSANCE. — In counterreconnaissance missions involving the maintenance of a moving screen by a cavalry command, armored cars are again of great assistance. In this case the counterreconnaissance detachments have the mission of preventing the enemy from passing through this screen, and should be given every means to accomplish this mission. Armored cars, therefore, in proper proportion, should be attached to these detachments whenever available.

The principles of control and communication should be the same as outlined under the heading of reconnaissance.

Where a stationary screen is established the principles for the employment of armored cars are similar to those outlined under outposts. The cars normally should be held under the control of the superior commander to perform during daylight hours reconnaissance missions in front of the screen, or to cover the flanks. Where the enemy is in close contact, the cars, in proper proportion, might be attached to sector commanders to repel attempts to penetrate the screen, be held with the main reserve, or be sent to cover exposed flanks. At night the cars should be employed as explained under outposts.

19. OFFENSIVE.—As a cavalry command gains contact with the enemy it will be preceded by armored cars. The road net and terrain permitting, these cars should withdraw to the flanks as soon as the troops close up on them, similar to the action of cavalry when preceding infantry. Normally, therefore, the bulk of the armored cars will be covering the exposed flank and the remainder the other flank. The superior commander having obtained all necessary information is then faced with the problem of the proper employment of the armored cars in the attack. The solution to this lies

in the road net, the nature of the terrain, the actual disposition of the cars, and the hostile threat.

Frequently a good solution would be to attach to the maneuvering force the cars which are disposed on the flank around which it is to move. This will allow the maneuvering force commander to have these cars cover his advance to attack position, protect his outer flank, and assist the attack by aggressive action on the enemy flank and rear. The cars on the opposite flank may then be employed by the superior commander to cover that flank. In case the operation of the maneuvering force does not of itself furnish flank protection for the remainder of the command, protection therefor should be furnished by an armored-car platoon or other suitable unit.

Very often, however, the road net, terrain, and speed with which contact is gained will not permit this solution and the cars may be employed to assist the attack of the secondary effort or cover the flanks of the superior unit and assist the attack by action against critical points in the enemy rear. In offensive action armored cars will rarely be used other than on the outer flanks.

The question of communication and control becomes paramount in a situation of this kind, and, no matter what the solution, the cars must be given definite missions and assembly points, and be informed as to where further orders will reach them. All available means of signal communication must be employed, so that a failure of one means will not cause a break in communication.

20. PURSUIT.—Wherever the road net and terrain permit, armored cars should be attached to the encircling force. The commander of the encircling force should employ these cars to reconnoiter his advance and to attack aggressively or to block critical points in the enemy rear. He should keep in mind the fact that these cars cannot seize and hold a position for any length of time and should therefore keep them well under control by assigning limited objectives and follow their action closely with his force.

Some armored-car units should be retained by the superior commander to assist the advance of the direct pressure. They should operate on the flanks and endeavor to gain the enemy's rear.

21. WITHDRAWALS AND DELAYING ACTION.—Armored cars are most effective in covering retrograde movements or in accomplishing delay. As already pointed out, they should normally be attached to rear guards or covering forces.

The cars should be employed to maintain contact with the enemy as withdrawal takes place. This action may often occur at quite a distance from the troops to which attached. On this work the cars can cause considerable delay and can furnish valuable information of the enemy movements.

When close contact is maintained between the advancing enemy and the covering or delaying force the cars should be employed on the flanks and should operate temporarily on the defensive behind suitable obstacles or be employed offensively against the enemy flanks.

The position of the armored cars should be constantly changing and for this reason the armored-car unit commander should be fully familiar with the plan of action of the commander of the force to which attached. He should be given only general instructions as most of his action will be on his own initiative.

22. DEFENSE. — In a defensive situation armored cars should be employed to reconnoiter the front and flanks of the position. When driven in by the enemy advance they should be employed to cover the flanks of the position.

If the flanks of the position are secured and the armored-car units are not needed for reconnaissance, they should be held in reserve prepared to counter attack.

In any event cars should never be emplaced in the main line of resistance as this leads to their early discovery

and destruction by hostile artillery or anti-tank weapons and fails to take advantage of their mobility.

In defense the armored-car commander must be kept informed of all developments in the situation so that he may make timely reconnaissance, select routes, and act on his own initiative in keeping with the situation provided he fails to receive proper orders.

SECTION II

TANKS WITH HORSE CAVALRY

23. GENERAL.—War strength tables of organization allot to the Cavalry Division one company of light tanks. It is not untimely to expect the future substitution of a combat-car troop for the tank company of a Cavalry Division.

The tank possesses the characteristics of mobility, fire power, protective armor and shock. These characteristics give it the power to close on the enemy in prepared positions and destroy his machine guns, which are the backbone of his defense. It thus assists the friendly riflemen to attain their objectives with fewer casualties and in less time.

Tanks cannot alone hold captured ground or take and evacuate prisoners.

With present materiel it is not practicable to have tanks march with a column of horse cavalry; the tanks or carriers should follow the column by bounds, or move by bounds in the spaces between large bodies in the column.

The tank cannot effectively operate in thick woods; in water over four feet deep; in swamps; over boulder-strewn slopes; in or across deep and wide cuts or trenches with steep sides; or over quite steep slopes. With these general exceptions, the present light tank in the Cavalry Division has a high degree of slow cross-country capacity.

Its vulnerability to aimed fire of field artillery and of specific anti-tank weapons is the principal unfavorable characteristic of the tank.

24. PRINCIPLES OF EMPLOYMENT.—Tanks are assault weapons only, to be used for relatively short periods of time under favorable opportunities.

As tanks are quite vulnerable to hostile anti-tank weapons, including field artillery, they should be assisted by reconnaissance and by anti-tank and artillery fire.

As the tanks have difficulty in locating targets under battle conditions, the cavalry must assist the tanks with information at every possible opportunity.

Tanks are an effective weapon for dealing with attacks by hostile tanks.

The principal duty of tanks in cooperation with cavalry is to assist the advance of the latter when held up by machine-gun fire. They will be given definite localities to subdue and will not be sent out with a roving commission to seek out objectives.

The tank platoon is the smallest tactical unit; it may be attached to a unit of horse cavalry the size of a squadron or larger.

If operating with cavalry on the defensive, tanks will be held initially in reserve, available to be used in counter-attack or to operate against hostile tanks.

If secrecy must be observed, the movement of tanks normally must take place during hours of darkness, and during daylight they must be hidden or camouflaged.

In the combined attack of tank units with horse cavalry, the timing of the operation is of great importance. If the cavalry, mounted or dismounted, attacks before the tanks come into action, the cavalry may be stopped by hostile fire. If the tanks appear before the cavalry can support them, the enemy will be able to concentrate all his fire on the tanks. The advance of both tanks and cavalry must be so timed as to enable the cavalry to arrive on the objective with, or immediately after, the tanks, and there may be occasions when this may be accomplished better with a mounted than with a dismounted attack.

When operating with tanks the successful advance of the cavalry depends largely upon the rapidity with which advantage is taken of diversions created by the tanks.

PART III

THE MECHANIZED CAVALRY REGIMENT

CHAPTER I

INTRODUCTION

25. HISTORICAL BACKGROUND. — Aside from an armored-car troop the cavalry service has had no experience in the development of mechanization in our army. The principles enunciated in this pamphlet are based on studies of foreign mechanization, on the experience gained by the mechanized forces of 1928 and, principally, 1930-31, and on some experimentation by the Detachment for Mechanized Cavalry Regiment in 1932.

26. PRESENT STATUS.—The Detachment, 1st Cavalry (Mechanized) was organized July 1, 1932, consisting of:

Squadron Headquarters, including
Headquarters Platoon
Staff Platoon
Communications Platoon
Supply Platoon
Maintenance Platoon.
Machine Gun Troop.
Combat Car Troop.
Troop A, 2d Armored Car Squadron (attached).

All of these elements were organized at greatly reduced strength. The object was to develop the nucleus of the key organizations of a regiment. The War Department has announced that the 1st Cavalry will be mechanized early in 1933, utilizing the bulk of the present personnel of that regiment and the personnel of the Detachment, 1st Cavalry (Mechanized).

27. PROJECTED DEVELOPMENT.—*a.* The trend of future development is indicated by the following instructions from the War Department:

"*a.* The mechanization of one regiment is the first step in determining the application of modern machines to Cavalry missions in war and in developing the technique and basic tactical principles applicable to Cavalry in which the horse is replaced by machines.

b. On favorable terrain, mechanized cavalry should extend the sphere of action of Cavalry to much greater distances and increase the speed of performance of its missions without, however, altering the accepted fundamental missions of that arm.

c. When the development of one mechanized cavalry regiment reaches a satisfactory stage, other elements may be organized and supporting troops developed and attached for operations therein."

b. The above quotation is a clear directive to determine the powers and limitations of a self contained tactical and administrative mechanized unit, basing operations and experiments on the prescribed missions of cavalry.

CHAPTER II

ORGANIZATION

28. ELEMENTS OF THE REGIMENT. — Tentative tables of organization dated February 20, 1932, provide for a complete regimental organization consisting of:

Headquarters and Band.
Headquarters Troop.
Machine Gun Troop.
Covering Squadron, including:
Troop A (Armored Car).
Troop B (Scout).
Combat Car Squadron, including:
Troop E.
Troop F.

29. INTEGRITY OF THE REGIMENT.—The organization is built to meet the tactical and administrative requirements of a self-contained fighting unit. It is not susceptible to subdivision into two or more independent tactical units without materially weakening the effectiveness of the whole. The organization is built around the Combat Car Squadron, all other elements being provided to assist this squadron on the field of battle.

30. CERTAIN DETAILS OF ORGANIZATION.—Attention is particularly invited to the following details of organization:

a. A motor officer is added to the usual regimental staff.

b. All radio personnel are assigned to the Communications Platoon which also includes the regimental and

squadron message center personnel. Auxiliary means of communication are operated by the several troops.

c. Trucks for the transport of troop baggage, one day's rations and ammunition are assigned to each troop. The Supply Platoon transports one day's gas and rations for the regiment. The fighting vehicles themselves carry one day's gas and ammunition. Troop trucks are assembled and attached to the Supply Platoon under battle conditions.

d. There are three echelons of maintenance within the regiment as follows: The car squad, the troop, and the Maintenance Platoon.

31. TABLES OF ORGANIZATION.—Tentative tables of organization are appended as follows: 414, 415, 423, 424, 426, 427, 428, 430, all P Special Tentative. Dated October 1, 1932; effective January 1, 1933.

T/O 414 P (Special)

ARMORED CAR TROOP, CAVALRY REGIMENT

(Mechanized)

	1	2	3	4	5	6	7
1	UNITS	Specialists ratings (class)	Troop headquarters	One platoon	Four platoons	Total	REMARKS
2	Captain		1			1	[a] For train defense.
3	First lieutenant		1			1	[b] Cross country
4	Second lieutenant			1	4	4	[c] Driven by mechanic.
5	Total commissioned		2	1	4	6	[e] Experimental.
6	First sergeant		1			1	[r] Armed with rifle.
7	Staff sergeant		1			1	
8	Chief mechanic		(1)			(1)	
9	Sergeants, including		3	1	4	7	Summary of Specialists' ratings:
10	Mess		(1)			(1)	
11	Platoon			(1)	(4)	(4)	3rd Class 1
12	Supply		(1)			(1)	4th Class 21
13	Transportation		(1)			(1)	5th Class 1
14	Corporals, including		5	3	12	17	6th Class 25
15	Car commanders			(3)	(12)	(12)	Total 48
16	Mechanics		(4)			(4)	
17	Supply		(1)			(1)	
18	Privates, first class } including		23	11	44	22	
19	Privates }					45	
20	Bugler		(1)			(1)	
21	Chauffeurs	6th	[r](6)			[r](6)	
22	Clerk	6th	[r](1)			[r](1)	
23	Cook	4th	(1)			(1)	
24	Cook	5th	(1)			(1)	
25	Drivers, armored car	4th	(1)	(4)	(16)	(17)	
26	Gunners, machine	6th	(1)	(3)	(12)	(13)	
27	Gunners, machine			(3)	(12)	(12)	
28	Mechanics, gas engine	4th	[r](3)			[r](3)	
29	Mechanics, general	3rd	[r](1)			[r](1)	
30	Mechanics, general	6th	[r](1)			[r](1)	
31	Motorcyclists	6th		(1)	(4)	(4)	
32	Motorcyclists		(3)			(3)	
33	Basic		[r](3)			[r](3)	
34	Total enlisted		33	15	60	93	
35	Aggregate		35	16	64	99	
36	O-Cars, armored, command [e]		1	1	4	5	
37	O-Cars, armored, fighting [e]			3	12	12	
38	Q-Cars, five passenger light [b]		1			1	
39	Q-Motorcycles, solo		2	1	4	6	
40	Q-Motorcycles, with side car		1			1	
41	Q-Trucks, cargo, 1½-ton		3			3	
42	Q-Trucks, kitchen [e]		1			1	
43	O-Truck, light repair [e e]		1			1	
44	Q-Truck, water		1			1	
45	O-Guns, machine caliber .30		2[a]	8	32	34	
46	O-Guns, machine caliber .50		1	4	16	17	
47	O-Guns, sub-machine		4	5	20	24	
48	O-Pistols		35	16	64	99	
49	O-Rifles		15			15	

T/O 424 P (Special)

HEADQUARTERS AND HEADQUARTERS TROOP, CAVALRY REGIMENT

(Mechanized)

	1	2	3	4	5	6	7	8	9	10	11
1	Units	Specialists ratings (Class)	Regimental Headquarters	Troop Headquarters	Staff and Personnel Platoon	Supply and Transportation Platoon	Communications Platoon	Maintenance Platoon	Total Headquarters Troop	Aggregate	Remarks
2	Colonel		1							1	
3	Lieutenant Colonel		1[a]							1	
4	Captains		5[b]	1					1	6	[a] Executive
5	First lieutenants		1[c]	1		1	1	1	4	5	
6	Total commissioned		8	2		1	1	1	5	13	[b] Adjutant; S-2 and liaison; S-3; S-4 (Supply officer); Motor officer
7	Master sergeants, including				1	1		1	3	3	
8	Chief mechanic, regimental							(1)	(1)		[c] Personnel Adjutant
9	Sergeant major				(1)				(1)		[d] Includes fitted as: wrecker; shop truck; spare parts truck; 2 light repair trucks
10	Supply					(1)			(1)		
11	First sergeant			1					1	1	[e] Experimental
12	Technical sergeants, including				1		1		2	2	
13	Communications						(1)		(1)		[g] Cross-country
14	Personnel				(1)				(1)		
15	Staff sergeants, including					1	2		3	3	[f] 9 for train defense, (6 manned by band)
16	Communications and Sq. Sergeant Majors						(2)		(2)		
17	Truckmaster					(1)			(1)		[i] Train defense
18	Sergeants, including			3	1	1	2		7	7	
19	Mechanic			(1)					(1)		[h] Driven by mechanic
20	Mess			(1)					(1)		
21	Reconaissance				(1)				(1)		
22	Supply			(1)		(1)	(1)		(3)		
23	Message center						(1)		(1)		
24	Corporals, including			1		1	5	2	9	9	
25	Mechanic			(1)				(2)	(3)		
26	Truckmaster					(1)			(1)		

27	Radio operators						(5)		(5)		
28	Privates first class } including			33	9	20	32	14	36	36	
29	Privates }								72	72	
30	Armorer	4th						(1)	(1)		
31	Bugler			(1)					(1)		
32	Chauffeurs	6th		[r](17)		[r](13)		[r](1)	[r](31)		
33	Clerks, headquarters	4th			[r](5)				[r](5)		
34	Clerks, headquarters	5th			[r](1)				[r](1)		
35	Clerks, headquarters	6th		[r](1)					[r](1)		
36	Clerks, record	3rd			[r](1)	[r](1)	(1)		(3)2[r]		
37	Clerks, record	6th			[r](2)	[r](1)			[r](3)		
38	Clerks	6th					(3)		(3)		
39	Cooks	4th		(2)					(2)		
40	Cook	5th		(1)					(1)		
41	Driver, combat car, command	4th		(1)					(1)		
42	Electrician, radio	3rd					(1)		(1)		
43	Mechanic	6th		[r](1)				[r](1)	[r](2)		
44	Mechanic, gas engine	4th		[r](2)					[r](2)		
45	Mechanic, general	3rd		[r](1)				[r](1)	[r](2)		
46	Mechanic, general	4th		[r](1)				[r](7)	[r](8)		
47	Mechanic, radio	3rd					(1)		(1)		
48	Messenger, motorcycle	6th				(1)	(2)	(1)	(4)		
49	Messenger, motorcycle			(1)			(2)		(3)		
50	Operator, radio	5th					(18)		(18)		
51	Basic			[r](4)		[r](4)	(4)	[r](2)	(14)10[r]		
52	Total enlisted			38	12	24	42	17	133	133	
53	Aggregate		8	40	12	25	43	18	138	146	
54	Q-Horses									20	
55	O-Cars, armored, command			2					2	2	
56	O-Cars, combat, command [e]			2					2	2	
57	Q-Cars, five passenger, light [g]			7		1	1	1	10	10	
58	Q-Motorcycles, solo			1			2	1	4	4	
59	Q-Motorcycles, with side car					1	2		3	3	
60	O-Personnel carriers [e]						1		1	1	
61	Q-Trucks, cargo, 1½-ton			8		12	1	5[d]	26	26	
62	O-Truck, light repair [e h]			1					1	1	
63	S-Truck, battery charging							1	1	1	
64	Q-Truck, kitchen [e]			1					1	1	
65	S-Truck, radio						6		6	6	
66	Q-Truck, water			1					1	1	
67	O-Guns, machine, caliber .30			11[f]		3[i]	2[i]		16	16	
68	O-Guns, machine, caliber .50			1					1	1	
69	O-Guns, sub-machine			2		1	4	1	8	8	
70	O-Pistols		8	40	12	25	43	18	138	146	
71	O-Rifles			27	9	19		11	66	66	

[r] Armed with rifle

Summary of Specialists' ratings

3rd Class	7
4th Class	19
5th Class	20
6th Class	44
Total	90

SCOUT TROOP, CAVALRY REGIMENT

(Mechanized)

1	Units	Specialists ratings (Class)	Troop Headquarters	One Combat Platoon: Platoon Headquarters	Rifle Squad	Machine Gun Section	2 Machine Gun Sections 1 Rifle Squad	Total Platoon	1 Scout Platoon	2 Scout Platoons	Total	Remarks
2	Captain		1								1	
3	Second lieutenants			1				1	1	2	3	
4	Total commissioned		1	1				1	1	2	4	
5	First sergeant		1								1	
6	Staff sergeant		1								1	
7	Chief mechanic		(1)								(1)	
8	Sergeants, including		2	1		1	2	3	1	2	7	
9	Mess		(1)								(1)	
10	Platoon			[r](1)				[r](1)	(1)	(2)	(3)[1r]	
11	Section					(1)	(2)	(2)			(2)	
12	Supply		(1)								(1)	
13	Corporals, including		2		1	2	5	5	1	2	9	
14	Car commanders								(1)	(2)	(2)	
15	Mechanic		(1)								(1)	
16	Squad leaders				[r](1)	(2)	(5)[1r]	(5)[1r]			(5)[1r]	
17	Supply		(1)								(1)	
18	Privates first class } including		17	1	9	9	27	28	6	12	18	
19	Privates }											
20	Bugler		(1)								39	
21	Chauffeurs	6th	[r](4)		[r](2)	[r](2)	[r](6)	[r](6)			(1)	
22	Clerk	6th	[r](1)								[r](10)	
											[r](1)	

[c] Cross-country
[d] Driven by mechanic
[e] Experimental
[r] Armed with the rifle

Summary of Specialists' ratings:

3rd Class	1
4th Class	10
5th Class	1
6th Class	18
Total	30

23	Cook	4th	(1)								(1)
24	Cook	5th	(1)								(1)
25	Driver, armored car or combat car	4th	(1)						(3)	(6)	(7)
26	Gunners, machine	6th	(1)			(1)	(2)	(2)	(1)	(2)	(5)
27	Gunners, machine					(3)	(6)	(6)	(2)	(4)	(10)
28	Mechanics, gas engine	4th	[r](2)								[r](2)
29	Mechanics, general	3rd	[r](1)								[r](1)
30	Mechanics, general	6th	[r](1)								[r](1)
31	Motorcyclists	6th	(1)								(1)
32	Motorcyclists		(1)	(1)				(1)			(2)
33	Basic		[r](1)		[r](7)	(3)	(13)7[r]	(13)7[r]			(14)8[r]
34	Total enlisted		23	2	10	12	34	36	8	16	75
35	Aggregate		24	3	10	12	34	37	9	18	79
36	O-Carriers, personnel [e]			1	2	2	6	6			7
37	O-Cars, combat, command [e]		1								1
38	O-Cars, combat, fighting [e]								3	6	6
39	Q-Cars, 5-passenger, light [e]		1								1
40	Q-Motorcycles, solo		1	1							2
41	Q-Motorcycles, with sidecar		1								1
42	Q-Trucks, cargo, 1½-ton		2								2
43	Q-Truck, kitchen [e]		1								1
44	O-Truck, light repair [d]		1								1
45	Q-Truck, water		1								1
46	O-Guns, machine, caliber .30		1			4	8	8	6	12	22
47	O-Guns, machine, caliber .50		1						3	6	7
48	O-Guns, sub-machine		3	1				1	3	6	10
49	O-Pistols		24	3	10	12	34	37	9	18	79
50	O-Rifles		10	1	10	2	14	15			25

T/O 430 P (Special)

MACHINE GUN TROOP, CAVALRY REGIMENT

(Mechanized)

1	1 Units	2 Specialists Ratings (Class)	3 Troop Headquarters	4 One Combat Platoon: Platoon Headquarters	5 One Combat Platoon: Rifle Squad	6 One Combat Platoon: Machine Gun Section	7 One Combat Platoon: 2 Machine Gun Sections 1 Rifle Squad	8 One Combat Platoon: Total Platoon	9 3 Combat Platoons	10 Total Troop Headquarters and 3 Combat Platoons	11 Remarks
2	Captain		1							1	
3	First lieutenant		1							1	
4	Second lieutenants			1				1	3	3	
5	Total commissioned		2	1				1	3	5	
6	First sergeant		1							1	
7	Sergeants, including		3	1		1	2	3	9	12	
8	Mechanic		(1)							(1)	
9	Mess		(1)							(1)	
10	Platoon			[r](1)				[r](1)	[r](3)	[r](3)	
11	Section					(1)	(2)	(2)	(6)	(6)	
12	Supply		(1)							(1)	
13	Corporals, including		4		1	2	5	5	15	19	
14	Mechanics		(3)							(3)	
15	Squad leaders				[r](1)	(2)	(5)1[r]	(5)1[r]	(15)3[r]	(15)3[r]	
16	Supply		(1)							(1)	
17	Privates first class } including		18	2	9	9	27	29	87	33	
18	Privates									72	
19	Buglers		(1)							(1)	
20	Chauffeurs	6th	[r](6)	[r](1)				[r](1)	[r](3)	[r](9)	
21	Clerk, headquarters	6th	[r](1)							[r](1)	
22	Cook	4th	(2)							(2)	
23	Cook	5th	(1)							(1)	
24	Drivers, personnel carrier	6th			[r](2)	[r](2)	[r](6)	[r](6)	[r](18)	[r](18)	

[a] Cross-country.
[b] Driven by mechanic
[c] 1 gun for train defense
[e] Experimental
[r] Armed with the rifle

Summary of Specialists' Ratings:

3rd Class	1
4th Class	4
5th Class	1
6th Class	38
Total	44

25	Gunners, machine	6th				(1)	(2)	(2)	(6)	(6)
26	Gunners, machine					(3)	(6)	(6)	(18)	(18)
27	Mechanic, gas engine	4th	r(2)							r(2)
28	Mechanic, general	3rd	r(1)							r(1)
29	Mechanic, general	6th	r(1)							r(1)
30	Motorcyclists	6th		(1)				(1)	(3)	(3)
31	Motorcyclists		(2)							(2)
32	Basic		r(1)		r(7)	(3)	(13)7r	(13)7r	(39)21r	(40)22r
33	Total enlisted		26	3	10	12	34	37	111	137
34	Aggregate		28	4	10	12	34	38	114	142
35	O-Carriers, personnel [a]		1	1	2	2	6	7	21	22
36	Q-Cars, 5-passenger, light [a]		1							1
37	Q-Motorcycles, solo		1	1				1	3	4
38	Q-Motorcycles, with sidecar		1							1
39	Q-Trucks, cargo 1½-ton		3							3
40	Q-Truck, kitchen [c]		1							1
41	O-Truck, light repair [b]		1							1
42	Q-Truck, water		1							1
43	O-Guns, machine, caliber .30		1[c]			4	8	8	24	25
44	O-Guns, sub-machine		2	1					3	5
45	O-Pistols		28	4	10	12	34	38	114	142
46	O-Rifles		12	2	10	2	14	16	48	60

T/O 427 P (Special)

COMBAT CAR SQUADRON, CAVALRY REGIMENT

(Mechanized)

1	Units	Specialists Ratings (Class)	Squadron Headquarters and Headquarters Detachment	2 Combat Car Troops	Total Combat Car Squadron
2	Major		1		1
3	Captains			2	2
4	First lieutenants		1	2	3
5	Second lieutenants			6	6
6	Total commissioned		2	10	12
7	First sergeants			2	2
8	Staff sergeants, including		1[a]	2	2
9	Chief mechanics			(2)	(2)
10	Sergeant major [b]		(1)		(1)[a]
11	Sergeants, including			12	12
12	Mess			(2)	(2)
13	Platoon			(6)	(6)
14	Supply			(2)	(2)
15	Transportation			(2)	(2)
16	Corporals, including			26	26
17	Car commanders			(18)	(18)
18	Mechanics			(6)	(6)
19	Supply			(2)	(2)
20	Privates first class } including		3	96	34
21	Privates }				65
22	Buglers			(2)	(2)
23	Chauffeurs	6th	(1)[c]	(10)[c]	(11)[c]
24	Clerks	6th		(2)[c]	(2)[c]
25	Cooks	4th		(2)	(2)
26	Cooks	5th		(2)	(2)
27	Drivers, combat car and S.P. gun	4th	(1)	(32)	(33)
28	Gunners, machine	6th		(12)	(12)
29	Gunners, machine			(12)	(12)
30	Mechanics, combat car	3rd		(2)[c]	(2)[c]
31	Mechanics, gas engine	4th		(8)[c]	(8)[c]
32	Mechanics, general	6th		(2)[c]	(2)[c]
33	Motorcyclists	6th		(2)	(2)
34	Motorcyclists		(1)	(2)	(3)
35	Basic			(6)[c]	(6)[c]
36	Total enlisted		3	138	141
37	Aggregate		5	148	153
38	O-Cars, combat, command [e]		1	8	9
39	O-Cars, combat, fighting [e]			18	18
40	Q-Cars, 5-passenger, light [e]		1	2	3
41	Q-Motorcycles, solo		1	2	3
42	Q-Motorcycles, with sidecar			2	2
43	Q-Trucks, cargo 1½-ton			4	4
44	Q-Trucks, kitchen [e]			2	2
45	O-Trucks, light repair [d]			2	2
46	Q-Trucks, water			2	2
47	O-Guns, machine, caliber .30		2	54	56
48	O-Guns, machine, caliber .50		1	26	27
49	O-Guns, self-propelled, 1.85 S.A			6	6
50	O-Guns, sub-machine		2	30	32
51	O-Pistols		5	148	153
52	O-Rifles		1	30	31

6 — REMARKS

[a] Not included in total. See T.O-424 P (Special) this series.
[b] Also communications sergeant.
[c] Cross-country.
[d] Driven by mechanic
[e] Experimental.

Summary of Specialists' Ratings:

3rd Class	2
4th Class	43
5th Class	2
6th Class	29
Total	76

T/O 426 P (Special)

COVERING SQUADRON, CAVALRY REGIMENT

(Mechanized)

	1	2	3	4	5	6
1	UNITS	Specialists ratings (Class)	Headquarters and Headquarters detachment	Armored car Troop (T/O-414 P (Special))	Scout Troop (T/O-415 P (Special))	Total
2	Major		1			1
3	Captains			1	1	2
4	First lieutenants		1	1		2
5	Second lieutenants			4	3	7
6	Total commissioned		2	6	4	12
7	First sergeants			1	1	2
8	Staff sergeants, including		1[a]	1	1	2
9	Chief mechanic			(1)	(1)	(2)
10	Sergeant major		(1)[a]			(1)[a]
11	Sergeants, including			7	7	14
12	Mess			(1)	(1)	(2)
13	Platoon			(4)	(3)[1r]	(7)[1r]
14	Section				(2)	(2)
15	Supply			(1)	(1)	(2)
16	Transportation			(1)		(1)
17	Corporals, including			17	9	26
18	Car commanders			(12)	(2)	(14)
19	Squad leaders				(5)[1r]	(5)[1r]
20	Mechanics			(4)	(1)	(5)
21	Supply			(1)	(1)	(2)
22	Privates first class } including		3	67	57	41
23	Privates }					86
24	Buglers			(1)	(1)	(2)
25	Chauffeurs	6th	(1)[r]	(6)[r]	(10)[r]	(17)[r]
26	Clerks	6th		(1)[r]	(1)[r]	(2)[r]
27	Cooks	4th		(1)	(1)	(2)
28	Cooks	5th		(1)	(1)	(2)
29	Drivers, armored or combat cars	4th	(1)	(17)	(7)	(25)
30	Gunners, machine	6th		(13)	(5)	(18)
31	Gunners, machine			(12)	(10)	(22)
32	Mechanics, gas engine	4th		(3)[r]	(2)[r]	(5)[r]
33	Mechanics, general	3rd		(1)[r]	(1)[r]	(2)[r]
34	Mechanics, general	6th		(1)[r]	(1)[r]	(2)[r]
35	Motorcyclists	6th		(4)	(1)	(5)
36	Motorcyclists		(1)	(3)	(2)	(6)
37	Basic			(3)[r]	(14)8[r]	(17)11[r]
38	Total enlisted		3	93	75	171
39	Aggregate		5	99	79	183
40	O-Carriers, personnel [c]				7	7
41	O-Cars, armored, command [c]		1	5		6
42	O-Cars, armored, fighting [c]			12		12
43	O-Cars, combat, command [c]				1	1
44	O-Cars, combat, fighting [c]				6	6
45	Q-Cars, 5 passenger, light [c]		1	1	1	3
46	Q-Motorcycles, solo		1	6	2	9
47	Q-Motorcycles, with side car			1	1	2
48	Q-Trucks, cargo, 1½-ton			3	2	5
49	Q-Trucks, kitchen [c]			1	1	2
50	Q-Trucks, light repair [b]			1	1	2
51	Q-Trucks, water			1	1	2
52	O-Guns, machine, caliber .30		2	34	22	58
53	O-Guns, machine, caliber .50		1	17	7	25
54	O-Guns, sub-machine		2	24	10	36
55	O-Pistols		5	99	79	183
56	O-Rifles		1	15	25	41

7
REMARKS

[a] Not included in totals, see Table 424P,(Special) this series.
[b] Driven by mechanic.
[c] Cross country
[e] Experimental.
[r] Armed with rifle.

Summary of Specialists' ratings:

3rd Class	2
4th Class	32
5th Class	2
6th Class	44
Total	80

T/O 423 P (Special)

CAVALRY REGIMENT

(Mechanized)

1	Units	Specialists rating (class)	Regimental headquarters and band	Headquarters Troop (T/O-424 P (Special) tentative)	Covering Squadron (T/O-426 P (Special) tentative)	Combat car Squadron (T/O-427 P (Special) tentative)	Machine Gun Troop (T/O-430 P (Special) tentative)	Total Regiment	Attached Medical Dep't	Attached Chaplain	Aggregate	Remarks
2	Colonel		1					1			1	• The band is a separate organization commanded by the regimental adjutant and may be attached to any unit of the regiment fora dministration and supply.
3	Lieutenant Colonel		1					1			1	
4	Majors				1	1		2	1		3	
5	Captains		5	1	2	2	1	11	2[d]	1	14	
6	First lieutenants		1	4	2	3	1	11			11	
7	Second lieutenants				7	6	3	16			16	
8	Total commissioned		8	5	12	12	5	42	3	1	46	
9	Warrant officer		1					1			1	[b] Cross-country • Driven by mechanics [d] 1 dental • Experimental
10	Master sergeants			3				3			3	
11	First sergeants			1	2	2	1	6			6	
12	Technical sergeants		1	2				3	1		4	
13	Staff sergeants		1	3	2	2		8			8	
14	Sergeants		4	7	14	12	12	49	2		51	
15	Corporals		2	9	26	26	19	82			82	
16	Privates first class } including		20	36	41	34	33	164	4		168	
17	Privates } including			72	86	65	72	295	8		303	
18	Specialists	3rd	(2)	(7)	(2)	(2)	(1)	(14)			(14)	
19	Specialists	4th	(5)	(19)	(32)	(43)	(4)	(103)	(2)		(105)	
20	Specialists	5th	(8)	(20)	(2)	(2)	(1)	(33)			(33)	

21	Specialists	6th	(5)	(44)	(44)	(29)	(38)	(160)	(5)		(165)
22	Basic			(18)	(47)	(23)	(61)	(149)	(5)		(154)
23	Total enlisted		28	133	171	141	137	610	15		625
24	Aggregate		37	138	183	153	142	653	18	1	672
25	Q-Ambulances, field, motor [e]								1		1
26	O-Carriers, personnel [e]			1	7		22	30	2		32
27	O-Cars, armored, command [e]			2	6			8			8
28	O-Cars, armored, fighting [e]				12			12			12
29	O-Cars, combat, command [e]			2	1	9		12			12
30	O-Cars, combat, fighting [e]				6	18		24			24
31	Q-Cars, five passenger, light [b]			10	3	3	1	17			17
32	Q-Motorcycles, solo			4	9	3	4	20			20
33	Q-Motorcycles, with sidecar			3	2	2	1	8	1		9
34	S-Trucks, battery charging			1				1			1
35	Q-Trucks, cargo, 1½-ton			26	5	4	3	38	1		39
36	Q-Trucks, kitchen [e]			1	2	2	1	6			6
37	O-Trucks, light repair [c] [e]			1	2	2	1	6			6
38	S-Trucks, radio			6				6			6
39	Q-Trucks, water			1	2	2	1	6			6
40	O-Guns, machine, caliber .30			16	58	56	25	155			155
41	O-Guns, machine, caliber .50 [e]			1	25	27		53			53
42	O-Guns, self-propelled, 1.85 (S.A.) [e]					6		6			6
43	O-Guns, sub-machine [e]			8	36	32	5	81			81
44	O-Pistols		37	138	183	153	142	653			653
45	O-Rifles			66	41	31	60	198			198
46	Q-Horses			20							20

T/O 428 P (Special)

COMBAT CAR TROOP, CAVALRY REGIMENT

(Mechanized)

	1	2	3	4	5	6	7
1	Units	Specialists Ratings (class)	Troop Headquarters	1 Combat Car Platoon	Total 3 Platoons	Total Troop	Remarks
2	Captain		1			1	
3	First lieutenant		1			1	
4	Second Lieutenants			1	3	3	
5	Total commissioned		2	1	3	5	
6	First sergeant		1			1	
7	Staff sergeant, including		1			1	
8	Chief mechanic		(1)			(1)	
9	Sergeants, including		3	1	3	6	
10	Mess		(1)			(1)	
11	Platoon			(1)	(3)	(3)	
12	Supply		(1)			(1)	
13	Transportation		(1)			(1)	
14	Corporals, including		4	3	9	13	
15	Car commanders			(3)	(9)	(9)	
16	Mechanic		(3)			(3)	
17	Supply		(1)			(1)	
18	Privates first class } including		21	9	27	16	
19	Privates }					32	
20	Buglers		(1)			(1)	
21	Chauffeurs	6th	[r](5)			[r](5)	
22	Clerk	6th	[r](1)			[r](1)	
23	Cooks	4th	(1)			(1)	
24	Cook	5th	(1)			(1)	
25	Drivers, C Car and S.P. Gun	4th	(1)	(5)	(15)	(16)	
26	Gunners, machine	6th		(2)	(6)	(6)	
27	Gunners, machine			(2)	(6)	(6)	
28	Mechanics, combat car	3rd	[r](1)			[r](1)	
29	Mechanics, gas engine	4th	[r](4)			[r](4)	
30	Mechanics, general	6th	[r](1)			[r](1)	
31	Motorcyclists	6th	(1)			(1)	
32	Motorcyclists		(1)			(1)	
33	Basic		[r](3)			[r](3)	
34	Total enlisted		30	13	39	69	
35	Aggregate		32	14	42	74	
36	O-Cars, combat, command [e]		1	1	3	4	
37	O-Cars, combat, fighting [e]			3	9	9	
38	Q-Cars, 5-passenger, light [a]		1			1	
39	Q-Motorcycles, solo		1			1	
40	Q-Motorcycles, with sidecar		1			1	
41	Q-Trucks, cargo 1½-tons		2			2	
42	Q-Trucks, kitchen [e]		1			1	
43	O-Truck, light repair [b]		1			1	
44	Q-Truck, water		1			1	
45	O-Guns, machine, caliber .30		3[c]	8	24	27	
46	O-Guns, machine, caliber .50		1	4	12	13	
47	O-Guns, self-propelled 1.85 S.A.			1	3	3	
48	O-Guns, sub-machine		3	4	12	15	
49	O-Pistols		32	14	42	74	
50	O-Rifles		15			15	

[a] Cross-country.
[b] Driven by mechanic.
[c] 1 gun for train defense.
[e] Experimental.

Summary of Specialists' ratings:

3rd Class	1
4th Class	21
5th Class	1
6th Class	14
Total	37

CHAPTER III

EMPLOYMENT

32. GENERAL.—*a.* The employment of a mechanized cavalry regiment is a project for development. To date an organization has been set up, a limited amount of equipment is available (the bulk of it substitutive), and a basic mission has been set forth.

b. The principles set forth in this chapter are based on experiment and experience with the present limited personnel and modern equipment, and with similar forces that have been in existence.

c. The principles of the employment of cavalry have been adopted as far as they are obviously appropriate, they have been disregarded where obviously inappropriate, and have been enlarged upon where experience indicates that the characteristics of mechanization justify extending their application.

d. The succeeding paragraphs indicate the characteristics of the regiment and its subdivisions and their general employment which must be known by any commander who would make an intelligent assignment of missions to mechanized cavalry.

e. The success of mechanized combat depends on the application of the following tactical principles:

(1) Early and thorough reconnaissance.

(2) Prompt decisions and their rapid dissemination.

(3) The maximum of surprise through speed of maneuver.

(4) Full advantage of mobility to envelop or turn hostile positions.

(5) Full advantage of mobility to force a rapid penetration of a hastily prepared position.

(6) The use of simple fixed formations.

(7) The development of maximum speed under fire.

(8) The development of maximum fire power early in combat and maintaining it until the objective is taken.

(9) Full advantage of the tremendous shock power of the combat car to smother resistance.

33. CHARACTERISTICS OF THE REGIMENT.—*a.* The regiment can operate independent of outside supply for two days.

b. On hard surfaced roads, the regiment marches at an average rate of 25 miles per hour for 125 miles and at a rate of 20 miles per hour for 250 miles or more.

c. No rate of march can be prescribed for poor roads or across country.

d. At night without lights or moon, on good roads, the regiment averages 10 miles per hour.

e. Voice radio communication is dependable up to 10 miles. Telegraph radio communication is dependable up to 25 miles with SCR 189 sets and up to 60 miles with 50 watt sets. These distances are with vehicles in motion.

f. On the offensive the regiment attacks with the combat car squadron on a front of 600 to 1000 yards (about 100 yards per combat car), and, in addition, provides its own information and security.

g. On the defense the regiment holds a front up to 1200 yards with the combat cars of the Covering Squad-

ron in squadron reserve and the Combat Car Squadron in regimental reserve and, provides in addition, as in offensive action, its own information and security.

h. A typical employment of the regiment involves the following:

(1) Early reconnaissance followed by detailed reconnaissance and measures for the security of the deployment of the main body, all executed by the covering squadron.

(2) Rapid deployment followed by a prompt and vigorous attack, executed by the combat-car squadron supported by the machine-gun troop, and coordinated with a secondary attack by the covering squadron.

(3) (a) Occupation of the captured ground by the machine gun troop (assisted in security measures by the covering squadron), or, (b) pursuit by all available elements, or, (c) withdrawal, covered by the machine-gun troop and the covering squadron.

34. EMPLOYMENT OF THE ELEMENTS OF THE REGIMENT.—The covering squadron and the machine-gun troop support the combat-car squadron as follows:

a. The covering squadron is employed on the following missions all with a view to assisting the combat-car squadron.

(1) Distant reconnaissance by the armored car troop, usually under direct control of the regimental commander.

(2) Battle reconnaissance by armored cars, combat cars, and riflemen.

(3) Security before, during, and after battle by utilizing its powers for reconnaissance, for advance, rear, or flank guards, for secondary attacks, or for delaying and holding missions.

(4) Pursuit.

b. The machine-gun troop supports the combat-car squadron by its fire, by executing holding attacks, or by

defensive missions. The machine-gun platoon is a suitable unit to occupy temporarily the ground secured by a combat car troop, to cover the reorganization of that troop or, if necessary, its withdrawal. Three machine-gun platoons make it possible to utilize one to follow up and consolidate the gains of each combat-car troop, while the third is available to cover an exposed flank, to reenforce either of the first two, or to assist in the consolidation of the entire position.

c. The combat-car squadron supplies the main effort of the attack. On the defensive it makes the main effort of the counter attack.

35. COMBAT PRINCIPLES OF THE ARMORED CAR TROOP.—These are the same as prescribed for armored cars with horse cavalry.

36. COMBAT PRINCIPLES OF THE SCOUT TROOP.—*a.* The platoon is the smallest tactical unit.

b. Acting as advance guard, the advance party consists of one scout platoon, the support consists of the remainder of the troop.

c. The advance party precedes the support by 5 to 10 minutes. The support precedes the main body by 10 to 30 minutes.

d. The distance between elements of the advance guard and between the advance guard and the main body depends upon the terrain, the road net, the rate of march, and the tactical situation. In no case is it such that a hostile threat from the flank could reach the head of the main body without the latter being warned by the advance guard. The flank patrolling necessary to provide this protection is furnished by the combat platoon and, for very short distances, by motorcycle scouts.

e. The advance guard acts boldly and aggressively. It advances by bounds. It cannot be expected to search for or to be concerned with patrols or small bodies on or near the axis of movement if the objective of the regiment is distant. It and the regiment behind it must boldly

crush through and smother light resistance. To be overcautious or concerned by light resistance will negative the tremendous mobility and crushing power of mechanized cavalry.

f. When strong resistance is met the combat platoon is employed to form a dismounted pivot of maneuver and cover the operations of the scout platoons, the whole covering the deployment of the regiment.

g. The riflemen are employed for dismounted reconnaissance which is always essential.

h. The troop is usually employed in a secondary attack in which it employs both fire and movement, utilizing both scout and combat platoons.

37. COMBAT PRINCIPLES OF THE COMBAT CAR TROOP AND SQUADRON.—

a. The platoon is the tactical unit. It consists of a command combat car, three fighting combat cars, and a self-propelled gun.

b. The platoon is given objectives or a zone of action. The latter is 300 to 400 yards in width.

c. The platoon leader riding in the command car leads his platoon until it has been definitely committed to an objective.

d. A wedge or echelon formation is usually the best, with the self-propelled gun following within very close supporting distance.

e. The platoon leader seldom has an opportunity to assemble his squad leaders and give oral orders. He controls the movement of the platoon within its zone of action by his own movements, he may designate objectives by tracer ammunition from the command car, and give other necessary instructions by simple signals.

f. Having designated an objective by tracer fire, the platoon leader signals "Disregard" and directs his command car to a position from which he can observe his platoon, observe the enemy, and control (again using tracer

ammunition) the fire of his self-propelled mount which becomes the platoon reserve. The platoon leader promptly decides upon the subsequent movements of the platoon and places his command car in the best position to rally and lead his platoon.

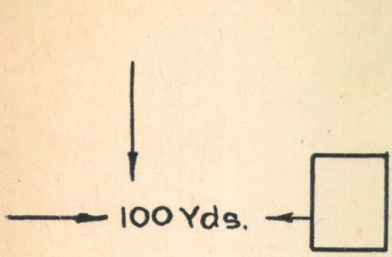
g. The self-propelled gun seldom fires except from a halt. Therefore it moves rapidly from one firing position to another so that it can give close support to the fighting cars and observe the signals of the platoon leader.

h. The platoon maneuvers at the maximum speed consistent with the situation.

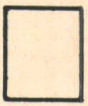
i. The platoon being under hostile fire, opens fire at the maximum range at which targets can be designated. The fighting cars develop their maximum fire power as early as possible in order to assist their own advance. They do not halt or reduce their speed to fire. Being under hostile fire they close on their objective as rapidly as possible.

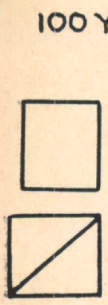
j. The platoon takes advantage of cover in its approach and advance. However, since the greatest success is likely to be obtained by a rapid closing with the enemy, the principle of taking advantage of cover must not operate greatly to reduce mobility. If the enemy be not too strong in anti-tank defense a rapid advance in the open may be more successful than a careful advance under cover, the latter affording the enemy opportunity to maneuver or strengthen his anti-tank defense.

k. Normal combat formations of the platoon are shown in the following diagrams:

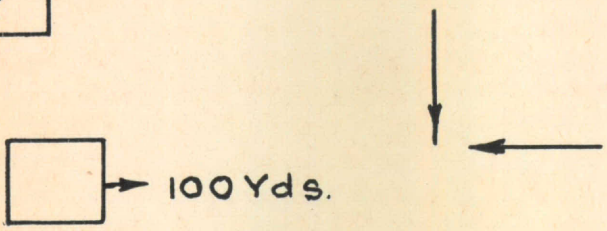


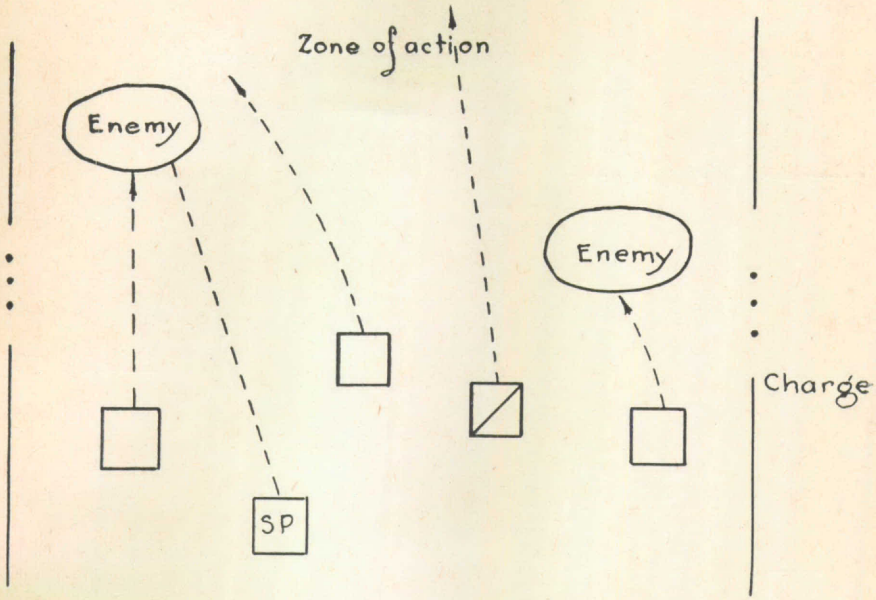
Wedge





Echelon





The platoon leader having designated the objectives is absorbed by the platoon which is closing at maximum speed. The SP gun is halted and supports the charge. The platoon leader, after observing the effect of the attack, proceeds rapidly forward to regain control of the platoon which will rally on him. The fighting cars, having overrun the objectives, promptly return and run through it again as long as there is opposition, unless sooner recalled by the platoon leader.

l. The troop is assigned a zone of action or objectives. It may employ platoons in line or in column. It will usually employ two platoons abreast in the assault with the third in support. A suitable frontage for a troop with two platoons abreast is 600 to 700 yards. The troop commander controls his platoon by radio, supplemented, if necessary, by visual signal.

m. The squadron is usually employed with troops in column. One or more platoons are usually held in

regimental reserve. The squadron commander controls his troops by radio, supplemented, if necessary, by visual signal or courier. The squadron is usually given objectives. It may be given a zone of action if the regiment is operating as part of a larger command and adjacent to other troops. In meeting engagements and in attacking hastily prepared positions, the squadron will usually be ordered to carry its attack through the entire enemy position. A limited objective is unsuitable for mechanized cavalry, unless closely supported by other troops, and the same applies to attacking carefully prepared positions.

38. COMBAT PRINCIPLES OF THE MACHINE GUN TROOP.—*a.* The combat platoon is the tactical unit. It includes two machine-gun sections of four guns each and a rifle squad.

b. The platoon usually fights dismounted. Its machine guns are mounted on their carriers so that if surprised it can fight from them. In exceptional circumstances, particularly in pursuit or in delaying action, the guns may be fired from their carriers.

c. Carriers are kept under cover as close to the dismounted position as possible.

d. Riflemen are employed chiefly for battle reconnaissance and security. All are trained as replacements for machine gunners.

e. The machine-gun troop usually supports the combat-car attack or may be held in reserve until combat cars have secured an objective. One or more combat platoons then promptly occupy the objective, covering the combat-car assembly if necessary. One combat platoon is usually employed to cover a combat-car troop.

f. The machine-gun troop may also be employed to cover an exposed flank or to cover ground unsuitable for combat-car maneuvers but over which hostile attack may be expected.

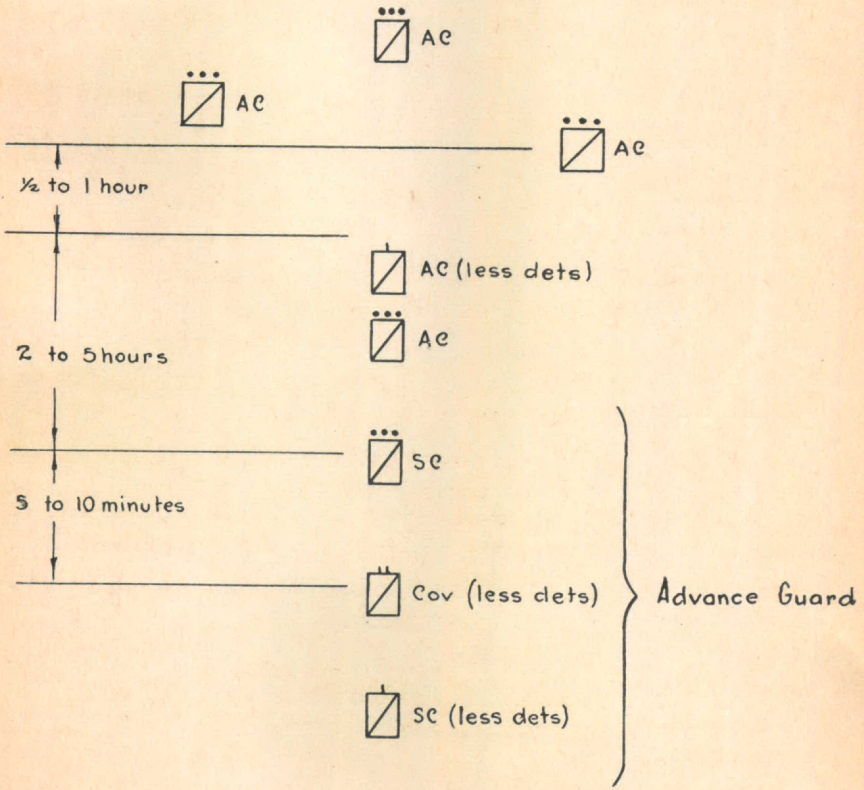
g. The machine-gun troop is the framework of the defensive dispositions of the regiment as shown in paragraph 39 *d* following.

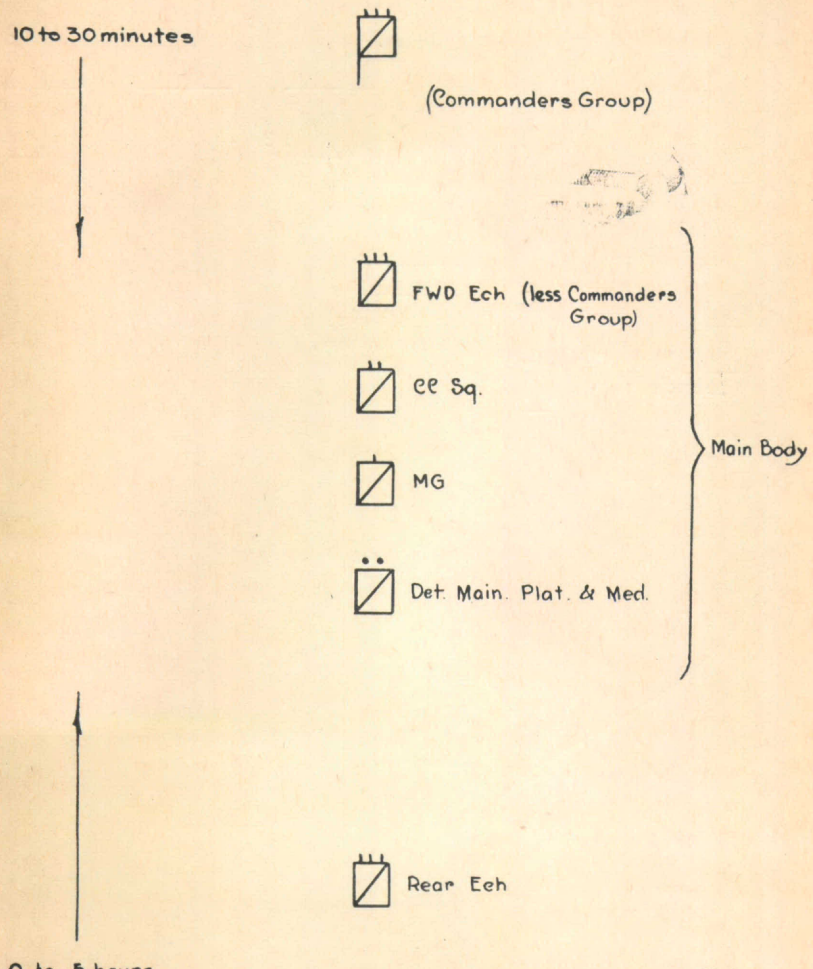
h. The machine-gun troop or part of it may be attached to the combat-car squadron, but it usually operates directly under the regimental commander.

i. Machine guns are always sited in pairs. The squads of a section are seldom separated over 50 yards, the sections of a platoon are seldom separated over 150 yards.

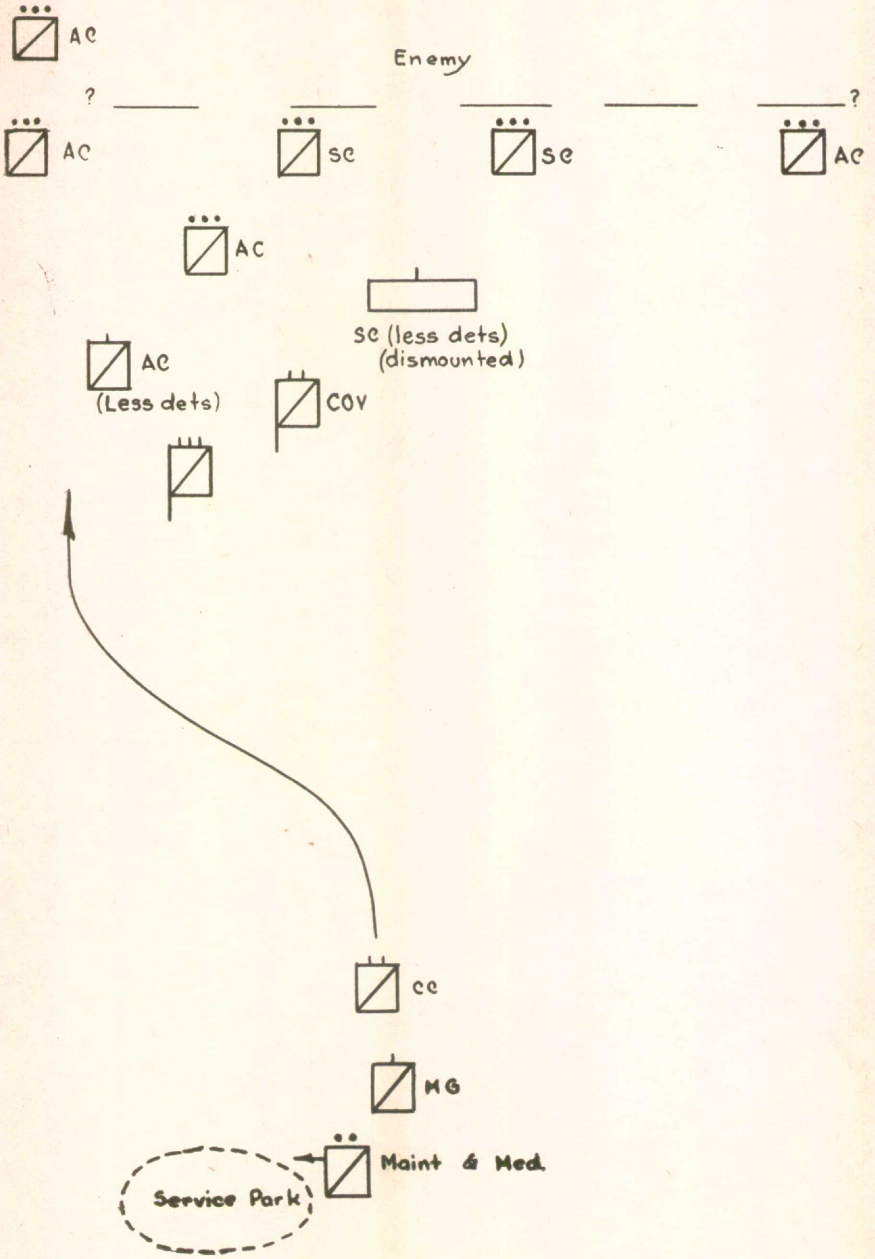
39. DIAGRAMS ILLUSTRATING THE EMPLOYMENT OF A MECHANIZED CAVALRY REGIMENT.—

a. March Formation.—

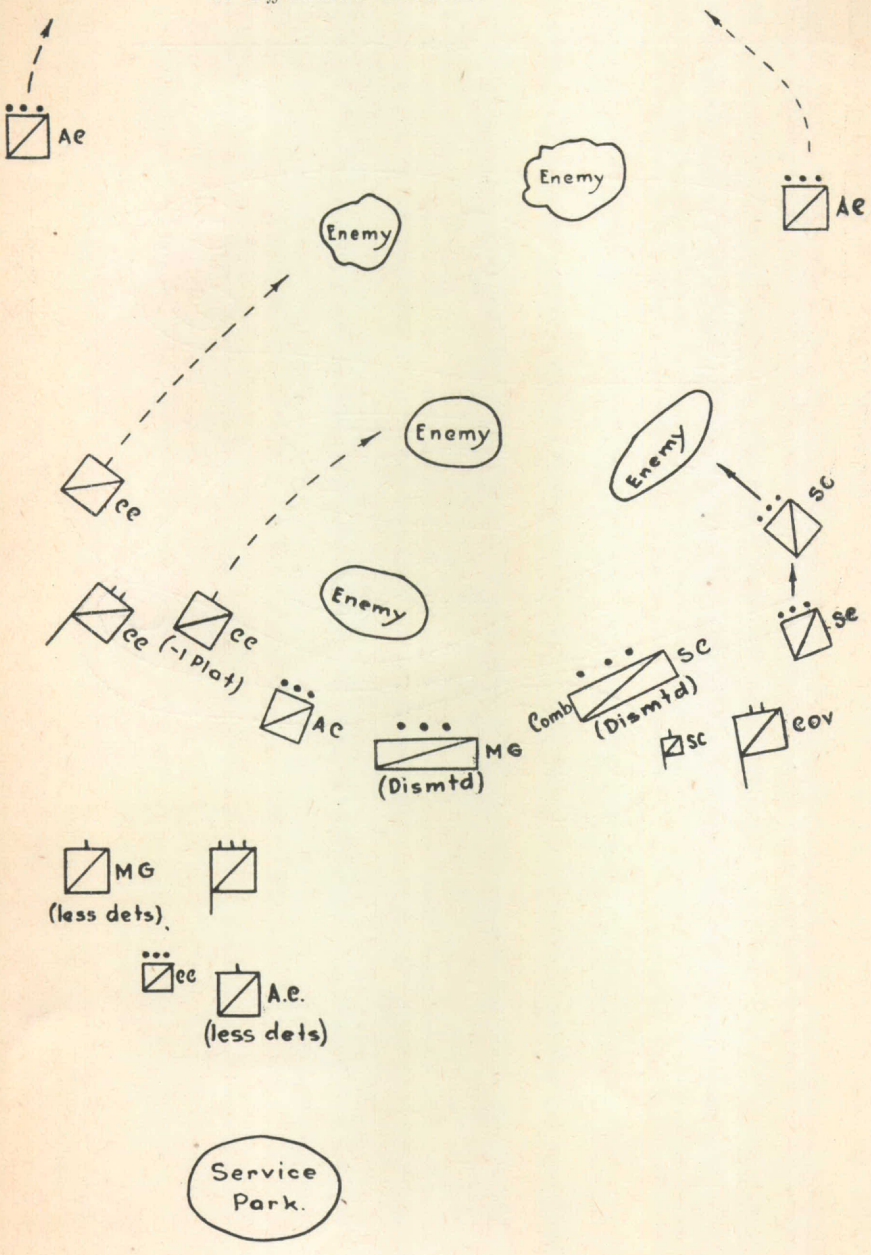



10 to 30 minutes
(Commanders Group)
FWD Ech (less Commanders Group)
ee Sq.
MG
Det. Main. Plat. & Med.
Main Body
Rear Eeh
0 to 5 hours
Trains
Hq. (less dets) with troop supply vehicles attached.

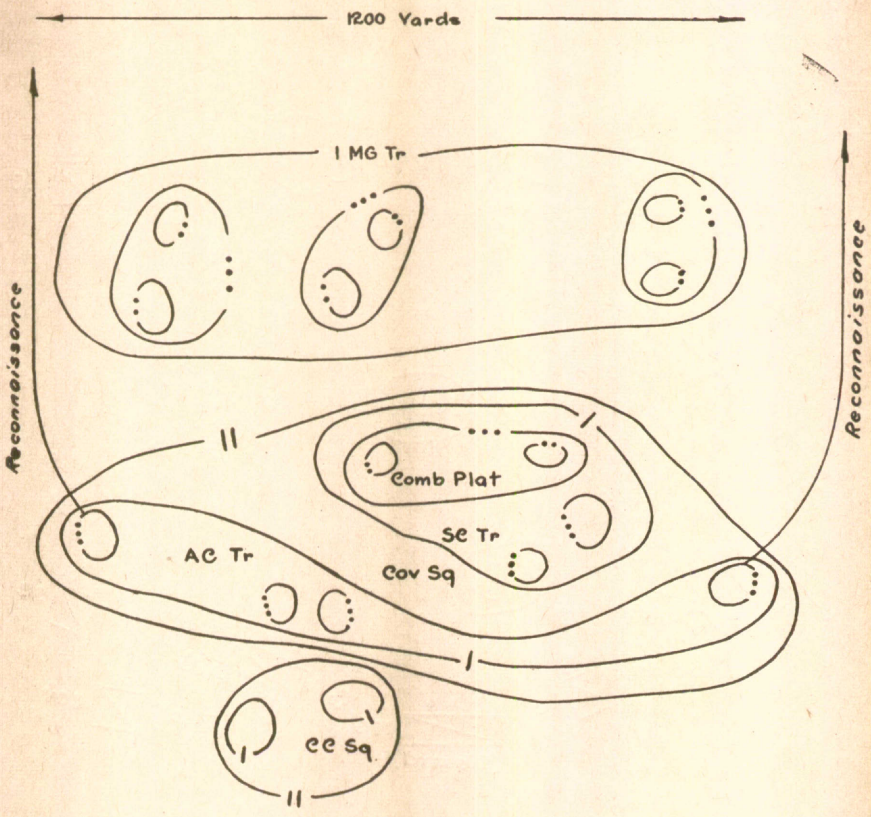
b. Development.—



c. Offensive Combat.—



d. Defensive Combat.—



CHAPTER IV

SUPPLY

40. GENERAL.—*a.* The regiment carries two day's supplies.

b. Supply vehicles have great mobility and speed and therefore may be depended upon to relay supplies promptly.

c. Supply vehicles are provided with machine guns for defense. Additional personnel is not detailed for train defense except in an unusual situation.

d. All supply vehicles are left at a base, or they establish a base carefully selected at a distance from probable hostile interference.

e. The regiment is supplied by forwarding from the supply base the necessary trucks to a cache near the scene of operations of the regiment or to the regiment itself. Truck kitchens may be expected to make contact with their organizations at least once a day by this method.

f. The success of supply depends upon the mobility of the trains, the functioning of communications, and careful planning.

41. REGIMENTAL SUPPLY PLATOON.—*a.* The platoon carries one day's rations and one day's gas and oil.

b. Gas and oil are carried in 10 gallon drums which provide the most rapid and economical method of issue.

c. Troop supply vehicles are attached to the platoon when their troops enter the combat zone.

d. The movement of all supply vehicles is regulated by the Supply Officer through the Supply Platoon Commander.

42. TROOP SUPPLY.—*a.* Each troop is assigned trucks for troop equipment, one day's ammunition, and one day's ration.

b. Headquarters Troop provides truck space for regimental equipment and two office trucks, one for Adjutant's and Supply Officer's office and one for Personnel Office.

c. The one day's rations are distributed between the kitchen truck, and fighting vehicles, depending on the situation.

d. Each fighting vehicle carries individual field equipment, one day's gas, one day's ammunition, and one or more meals of the current day's ration.

e. The following table shows the loading of supplies and equipment:

Unit	*Combat Vehicles*	*Troop Trucks*	*Supply Platoon*
Rations	1/3 to 1	2/3 or less	1
Ammunition	1 day	1 day	——
Gas and Oil	1 day	——	1 day
Mobilization Equipment	Individual	Troop	——

CHAPTER V

MAINTENANCE

43. DEFINITION AND IMPORTANCE.—*a.* Maintenance includes the care, upkeep and repair of vehicles.

b. Maintenance is both preventive and corrective. It is the function of all ranks and grades. The importance of preventive maintenance cannot be overemphasized.

44. MAINTENANCE ECHELONS.—*a.* Maintenance for the mechanized regiment is divided into four echelons as follows:

1st Echelon—The Car Squad—Daily service of the vehicle and inspection.

2d Echelon—The Troop—Daily inspection, adjustment, and replacement of unit assemblies as far as facilities and parts extend.

3d Echelon—The Regiment—(Maintenance Platoon)—All other repairs and replacements as far as facilities and parts extend.

4th Echelon—That agency without the regiment to which vehicles are evacuated for repair.

b. The general supervision of all maintenance within the regiment, and particularly of preventive maintenance, is the function of the Motor Officer.

45. COMBAT MAINTENANCE. — *a.* The maintenance echelon of each troop, with its light repair truck, accompanies the troop as far as practicable into the combat zone in order to make adjustments and replacements up to entry into action.

b. A light detachment of the Maintenance Platoon also follows the regiment into the combat zone.

c. When the regiment deploys for combat a service park is established as close as practicable to the battle area and all maintenance vehicles are assembled under the Maintenance Officer. From the service park such maintenance as is possible is carried on during combat. Its principal function, however, is preventive maintenance carried on up to the last moment before entering combat.

d. The attached medical personnel establish a first aid and collecting station at the service park.

e. Following combat the maintenance personnel undertake repair operations as soon as possible in order to insure the greatest possible combat strength.

CHAPTER VI

TRAINING

46. PURPOSE.—The purpose of training is to make the personnel of the mechanized force thoroughly familiar with the characteristics of the mechanical means at their disposal. Thereafter, when the powers and limitations of this means of making war are fully understood, to develop a combat unit which can carry out the missions assigned to it.

47. POWERS AND LIMITATIONS.—*a.* The preceding discussion of the employment of mechanized cavalry has purposely avoided definite statements as to its powers and limitations. Only experience can develop these. Although mechanical weaknesses are numerous today in all combat vehicles, basic principles of design have been so far advanced that there is every reason to expect combat vehicles eventually to have as great cross-country and fighting dependability as commercial road vehicles have today in their various commercial spheres.

b. The limitations imposed by sensitiveness to terrain today do not appear as great as they did a few years ago. It may confidently be expected that training experience will lead to development in design which will permit far greater mobility over difficult terrain than is the case today.

c. Training conducted as nearly as possible under conditions increases the powers of mechanized cavalry and correspondingly reduces its limitations.

48. CONCURRENT TRAINING. — *a.* The regiment is the tactical unit. Regimental training must be conducted concurrently with squadron, troop, platoon, and individual

training in order to guide the training of subordinate units, as well as to develop the whole into a homogeneous fighting unit.

b. Increased mobility, increased dispersion of subordinate elements, difficulties of observation, all demand perfection of control and in communications. Command post exercises become, therefore, one of the most important forms of training and one which must be employed frequently throughout the year. The objective of this training is to habituate all to prompt reconnaissance, evaluation of information and the issuance of orders, thus insuring early entry into action.

49. SUBJECTS.—*a.* The subjects of training are similar to those of any combat unit. Special attention is invited to several which are peculiar to mechanized cavalry.

b. Dismounted instruction cannot be neglected, especially disciplinary drills and physical training. Dismounted instruction combined with maintenance training can well be given on alternate days, or two day periods, with mounted instruction. It is neither practicable nor desirable, as with horse cavalry, to include mounted instruction each day.

c. Combat firing is of no greater importance than with other units but its execution is much more difficult due to firing from moving combat vehicles and the difficulties of control. It is a subject that requires regular and frequent instruction throughout the year.

d. Although the duties of enlisted personnel are highly specialized, every man must be trained as a driver and as a gunner.

PART IV

DEFENSE AGAINST MECHANIZED UNITS

50. DEFINITION.—For the purpose of this discussion, mechanization is considered to include all types of tanks and of armored cars that may be used as supporting or as auxiliary agencies with infantry or cavalry, or that may be found assembled and organized as an independent mechanized force.

51. DEFENSE MEASURES AGAINST MECHANIZED UNITS.—These may be grouped into three classes: offensive, defensive, and delaying actions.

52. COMBAT.—All classes of action against mechanized units include the opportune use of obstacles, both natural and artificial, that will prevent the advance of hostile fighting vehicles.

a. Natural obstacles.—The mobility of fighting vehicles may be checked or stopped by natural obstacles such as mountains or other steep slopes; forests; swamps, bogs and tidal flats; areas thickly covered with boulders; perpendicular banks in excess of four feet in height; etc. However, as different types of fighting vehicles possess different capacities of overcoming obstacles, the ideas of forest, mountain, etc., in the sense of obstacles have a relative meaning.

Until recently, water, as lakes and rivers, has been an insuperable obstacle for tanks and armored cars, but recent developments in amphibious tanks may make it necessary to revise our estimate of the value of water, alone, as an obstacle, to the highest forms of mechanization. In connec-

tion with high, steep, or swampy banks, however, water still will remain an insurmountable obstacle.

Many special irregularities of the terrain may prove valuable as obstacles. These include shell-torn areas; quarries; thick walls of earth or stone; areas covered with stumps; young trees and brush sufficiently high and thick to blind observation from a motor vehicle.

b. Artificial obstacles.—Certain artificial obstacles may be located to prevent the passage of hostile motor vehicles. Obstacles such as deep pits dug for tank traps, and concrete emplacements are effective but not always practicable in mobile warfare. However, as wheeled vehicles are more confined to roads and also are more easily stopped than are track-laying vehicles, it may often be practicable to prevent the advance of armored cars by digging a ditch or placing a tree trunk across a road that is flanked by stone walls or fences or deep drainage ditches, or by rolling boulders onto a side-hill road, or by stretching chains, wire cables, or other forms of wire entanglements between trees across a road. Barricades are only temporarily effective unless supported by an active defense.

Small portable mines may also be used to prevent a tank advance to attack a position, and such mines are reported as at present available in certain foreign armies.

With the exception of tank mines, consideration of the effect of passive obstacles lead to the conclusion that such obstacles will become less and less formidable with the technical progress of mechanical developments, as, for example, the amphibious tank. *Accordingly, the weight of action against hostile mechanization should be based on active and aggressive measures.*

53. ACTIVE DEFENSE.—*a. Aerial bombing.* Friendly aviation may accomplish great damage to hostile fighting vehicles by bombing their bases and depots in back areas, columns on the road, and their assembly positions prior to or during combat. It is usually more effective to bomb bridges,

thus creating obstacles, than to attempt to bomb fast-moving vehicles on the march.

b. Counter-mechanization. — History presents but few recorded examples of tank encounters and of armored car skirmishes, but, notwithstanding this apparent lack of precedent, there is good reason to believe that such combats will be important factors in future wars. Undoubtedly, a very important means of action against hostile mechanization may be to oppose tank to tank and armored car to armored car.

c. Rifle and gun-fire.—After giving consideration to all other means, the conclusion is reached that the emphatic answer to the armored motor vehicle, be it termed tank or armored car, is the gun.

Although tanks used on the Western front during the World War had armor impenetrable by the small arms projectiles then in use, tank crews frequently suffered from the effect of "splash" entering the crevices from enemy machine-gun bullets.

Recent development in high velocity small-arms ammunition apparently has resulted in doubling both the velocity and the penetrative ability of rifle and machine-gun projectiles; this may make it necessary to revise all present estimates of the protective value of armor for fighting vehicles.

Specific anti-tank weapons have been devised in numbers since the advent of the tank and the armored car. Both in automatic and in single-shot types, they have been produced in various countries in a variety of calibers and designs.

For specific anti-tank weapons, we are at present provided with the 37-mm gun and the .50 caliber machine gun, and both weapons may be carried on Infantry machine-gun carts or in Cavalry packs. Tables of organization for the regiment of Cavalry (mechanized) contemplate self-propelled 1.85 guns in each combat-car troop. These weapons

are intended to provide close support for the combat-car platoons in the attack, but they are similar to specific anti-tank weapons provided in certain foreign armies.

The problem of active defense against hostile mechanization is principally a matter of providing a sufficient number of properly located anti-tank weapons to disrupt the hostile advance of the enemy, in combination with the maneuver of the main force, including other anti-tank weapons.

Field Artillery accomplished great destruction of tanks on the Western Front and the efficiency of 75-mm field guns against comparatively slow moving vehicles is not to be doubted. However, against even slow moving tanks, direct laying is required for destructive fire, and a satisfactory accompanying gun of this caliber has not been developed.

54. PLAN OF ACTION.—For any given operation or situation there should be some specific plan to counter mechanization. This plan usually may include both passive and active means. Two general cases are presented below:

a. Troops on the march.—In this situation, action against armored fighting vehicles involves three main factors, viz:

(1) Initially locating anti-tank weapons in suitable numbers throughout the length of the column.

(2) From friendly aviation, armored cars or mounted patrols getting timely warning of the approach of hostile fighting vehicles.

(3) Transmitting this warning to all parts of the command.

When attacked on the march by hostile mechanization, troops may take advantage of such areas as villages and forests and other suitable accidents of the terrain, from which to operate.

Troops halting for rest should select a spot where the terrain naturally offers some protection.

b. Troops in Combat.—In selecting a position for combat, whether offensive or defensive, one should be chosen with the view to utilizing terrain possessing features which will be disadvantageous to the maneuver of hostile armored fighting vehicles. If time and material are available, the action may be facilitated by the use of artificial means, which should be so placed as to be covered by the fire of anti-tank weapons.

Anti-tank weapons should be so disposed as to bring fire through open sights on areas favorable for the movement of hostile vehicles. These weapons should be concealed from enemy ground and air observation up to the last moment, in order to obtain the maximum degree of surprise.

Combat intelligence should be so organized as to give ample warning of the movement of hostile armored fighting vehicles.

The high degree of mobility of horse cavalry, including its machine guns and other anti-tank weapons, combined with efficiently organized intelligence, should insure its effective operation in either offensive or defensive combat.

Ft. Riley, Kans., 5-20-36—352—600.

IH-76-20