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FM 2-6

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WAR DEPARTMENT

CAVALRY FIELD MANUAL

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**CREW DRILL,
LIGHT ARMORED CAR M8**

30 December 1943

SECRET
USA Armor School
ATSB-DOTD-L, Bldg 2300
Fort Knox, KY 40121-5200

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CAVALRY FIELD MANUAL

CREW DRILL, LIGHT ARMORED CAR M8

SECTION I

GENERAL

■ 1. **PURPOSE AND SCOPE.**—*a.* This manual is designed for the use of the platoon leader and car commander in training members of the crew of the light armored car M8. (See fig. 1.) It is to be used as a guide to achieve orderly, disciplined, and efficient execution of mounted and dismounted action, and precision, accuracy, and speed in the service of the vehicular weapons.

b. Reference is made to other War Department publications where appropriate. A complete list is contained in FM 21-6.

■ 2. **TRAINING PRINCIPLE.**—Training in crew drill will stress the importance of the prompt execution of correct movements at all times. Strict adherence to standardized procedures during the training period will insure the smooth functioning of the crew as a team in critical combat situations.



FIGURE 1.—Light armored car M8.

SECTION II

CREW COMPOSITION AND FORMATIONS

■ 3. COMPOSITION.—The crew of the light armored car M8 consists of four members, a car commander, a radio operator and assistant driver (hereafter referred to as radio operator), a driver, and a radio operator and gunner (hereafter referred to as gunner). The car commander may be an officer or a noncommissioned officer.

■ 4. FORMATIONS.—*a. Dismounted posts.*—The crew forms in one rank. (See fig. 2.) The car commander takes his post three paces in front of the right front wheel, facing to the front. The radio operator, driver, and gunner, in that order, take posts on the left of the car commander at close interval (4 inches).

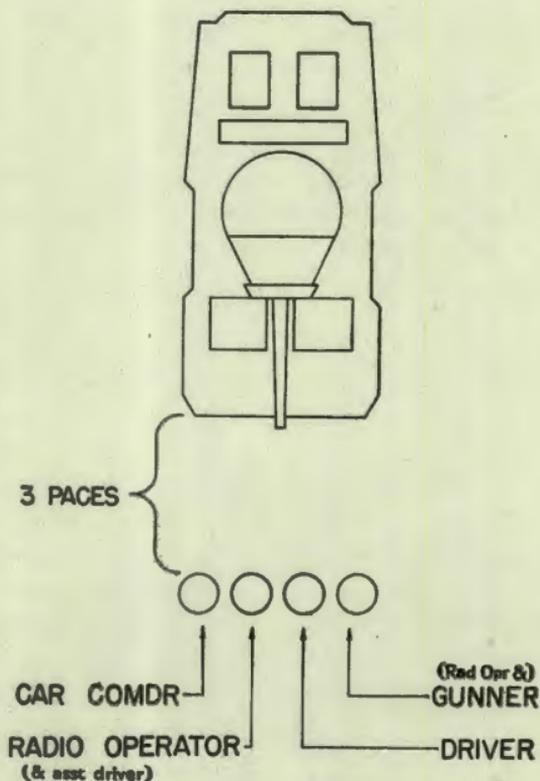


FIGURE 2.—Dismounted posts.

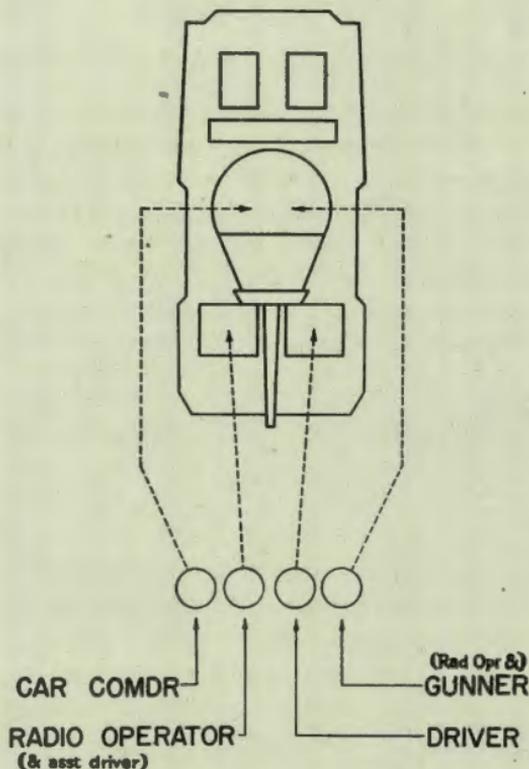


FIGURE 3.—Method of mounting.

b. Mounted posts.—The crew forms mounted as follows (see fig. 4):

- (1) *Car commander.*—On the right side of the turret, standing on the floor, or sitting or standing on the turret seat.
- (2) *Radio operator.*—In the assistant driver's seat.
- (3) *Driver.*—In the driver's seat.
- (4) *Gunner.*—On the left side of the turret, standing on the floor, or sitting or standing on the turret seat.

SECTION III

CREW CONTROL

■ 5. OPERATION OF INTERPHONE.—*a.* The interphone is used whenever the car is operated. After mounting, headsets and

microphones are put on and tested according to the procedure outlined in paragraph 1 of the appendix.

b. In connecting the break-away plug, each crew member inserts the plug of the short cord extending from his headset, into the break-away plug of the extension cord of his interphone control box. The throat microphone is adjusted so that the microphone buttons fit firmly on the front part of the operator's neck, and is connected to the break-away plug on the extension cord. During the procedure of checking interphone, each crew member adjusts the volume control on his interphone control box to the desired level. Care must be taken that the microphone switch does not remain in a locked position.

c. It is the duty of each man invariably to check his personal interphone equipment upon mounting. He ascertains that it is properly maintained and reports malfunctions to the car commander.

d. Definite commands and terminology are set forth in paragraph 6. These terms, and such others as are standardized by individual units, are used in order to insure speed and accuracy in the transmission of orders. General conversation on the interphone causes misunderstanding and disorder and is detrimental to discipline.

■ 6. INTERPHONE LANGUAGE.—*a. Terms.*

Car commander.....	LIEUTENANT or SERGEANT
Radio operator.....	RAD
Driver.....	DRIVER
Gunner.....	GUNNER
Any unarmored car....	CAR
Armored car.....	ARMORED CAR
Any unarmored truck..	TRUCK
Any antitank gun.....	ANTITANK
Infantry.....	DOUGHS
Machine gun.....	MACHINE GUN
Airplane.....	PLANE
Tank.....	TANK
Mines.....	MINES
Ditch.....	DITCH

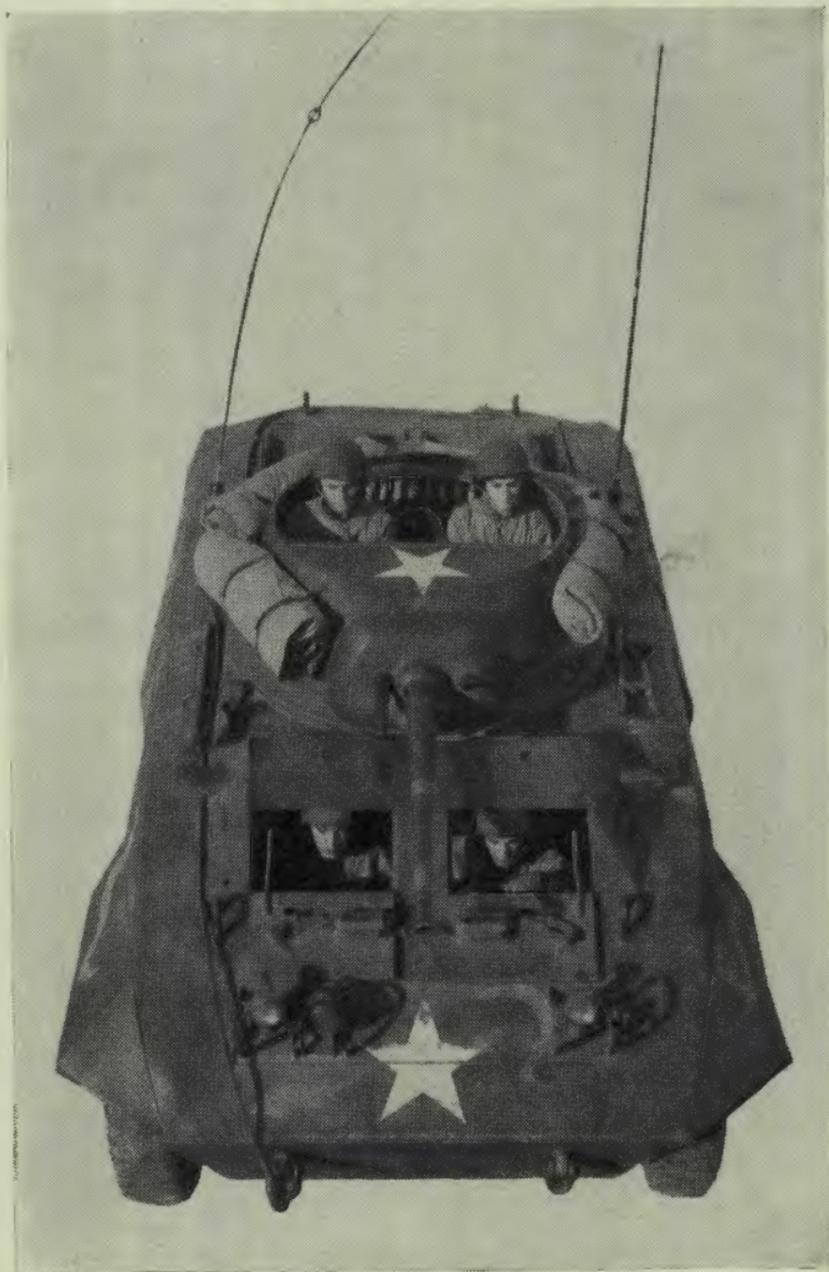


FIGURE 4.—Crew at MOUNTED POSTS.

b. *Commands for movement of car* (see also FM 2-5).

To move forward_____	DRIVER MOVE OUT
To halt_____	DRIVER STOP
To reverse_____	DRIVER REVERSE
To decrease speed_____	DRIVER SLOW DOWN
To turn right 90°_____	DRIVER CLOCK 3, STEADY ON
To turn left 60°_____	DRIVER CLOCK 10, STEADY ON
To turn right (left) 180°_____	DRIVER CLOCK 6 RIGHT (LEFT), STEADY ON
To have driver move toward a terrain feature or reference point, the car being headed in proper direction _____	DRIVER MARCH ON WHITE HOUSE (HILL, DEAD TREE, ETC.)
To follow in column__	DRIVER FOLLOW THAT CAR (DRIVER FOLLOW CAR NO. __)
To follow on road or trail_____	DRIVER RIGHT ON ROAD (DRIVER RIGHT ON TRAIL)
To start engine_____	DRIVER CRANK UP
To stop engine_____	DRIVER CUT ENGINE
To proceed in a spe- cific gear_____	DRIVER THIRD GEAR (FIRST GEAR) (FOURTH GEAR)
To proceed at same speed_____	DRIVER STEADY

c. Commands for control of turret.

To traverse turret---- GUNNER TRAVERSE LEFT
(RIGHT) (REAR)

To stop turret trav-
erse----- GUNNER STEADY, ON

d. Fire orders.—See FM 23-50 and 23-81.

SECTION IV

CREW DRILL

■ 7. To FORM CREW.—*a. Crew being dismounted.*—At the command DISMOUNTED POSTS, FALL IN, crew takes dismounted posts (see par. 4a and fig. 2). In falling in, crew members dress automatically on the car commander at close interval and then come to attention without command.

b. Crew being at dismounted posts.—At the command FALL OUT, the crew breaks ranks. Members habitually fall out to the right of the car.

c. Crew being at dismounted posts.—At the command CALL OFF, the members of the crew call off in turn as follows:

- (1) Car commander---- SERGEANT (or LIEUTENANT).
- (2) Radio operator----- RAD.
- (3) Driver----- DRIVER.
- (4) Gunner----- GUNNER.

d. Crew being at dismounted posts.—To change designations and duties, the command is: FALL OUT SERGEANT (RAD) (GUNNER).

(1) At the command—

(a) The man designated to fall out moves by the rear to the left flank position and becomes gunner.

(b) The crew members on the left of the vacated post move smartly to the right one position and prepare to call off their new designations.

(c) The crew member occupying the car commander's post starts calling off as soon the the crew is re-formed in line.

(2) The movement may be executed by ordering any member of the crew except the gunner to fall out.

(3) The movement should be executed with snap and precision at double time.

■ 8. To MOUNT CREW.—*a.* The crew, being at dismounted posts or dismounted, is mounted at the command or signal MOUNT. At the command or signal, crew members mount as prescribed in paragraph 1 of the appendix. (See also figs. 3 and 4.) During early stages of training, mounting should be done "by the numbers."

b. Crew drill is conducted habitually with the gun cover of the 37-mm gun and the coaxial machine gun removed. Both hatch top covers will clear the guns if the turret traverse is set between 0 and 1 Left. The exact turret setting for each vehicle should be determined by the gunner and the traverse habitually placed on that setting before the gunner dismounts from the vehicle. Under special circumstances, when it is desired to leave the muzzle cover on during crew drill, the 37-mm gun is carried in a position between 0 and 1 Right to enable the driver's hatch top cover to clear.

■ 9. To CLOSE HATCHES.—At the command CLOSE HATCHES, the crew proceeds as outlined in paragraph 2 of the appendix.

■ 10. To OPEN HATCHES.—At the command OPEN HATCHES, the crew proceeds as outlined in paragraph 3 of the appendix.

■ 11. To DISMOUNT CREW.—*a.* The crew, being at mounted posts with hatch front covers open, is dismounted without vehicular weapons at the command or signal DISMOUNT. The crew proceeds as outlined in paragraph 4 of the appendix.

NOTE.—If the gun cover is left on the guns, it will be necessary for the gunner to move the turret sufficiently to the left to enable radio operator to open his hatch top cover after the driver has opened his. (See par. 8*b.*)

b. When the radio is to be used, the radio operator or the gunner remains in the car. The command for this is: EXCEPT RAD (GUNNER) DISMOUNT.

c. The crew habitually dismounts wearing helmets and carrying individual weapons.

SECTION V

SIGNALS

■ 12. VISUAL SIGNALS.—*a. Flag signals.*—(1) Each armored car normally carries three solid color flags, red, green, and orange.

(2) Flags are displayed vertically through the turret and may be moved to attract attention, or held stationary.

(3) The meanings of the signals are as follows:

Red—Enemy in sight.

Green—All clear, ready, or understood.

Orange—Out of action or disregard my actions.

Green and orange—Assemble, or close.

Red and green—Disperse.

Red, green, and orange—Gas.

(4) Additional signals may be improvised.

(5) The commands conveyed by the flag signals are executed as soon as they are understood.

(6) All subordinates are required to repeat flag signals as soon as they are understood.

b. Other visual signals.—Arm-and-hand, light, fire control, driver's, and pyrotechnic signals are discussed in detail in FM 2-7 (when published).

SECTION VI

DISMOUNTED ACTION

■ 13. To FIGHT ON FOOT.—At the command or signal FIGHT ON FOOT, the crew proceeds as outlined in paragraph 5 of the appendix.

■ 14. To REMOUNT.—*a.* At the car commander's signal OUT OF ACTION, the machine gun is taken out of action as prescribed in FM 23-45. If the driver has moved the vehicle to cover, the car commander signals BRING UP THE VEHICLE. The crew is mounted as prescribed in paragraph 8.

b. After mounting, the crew replaces the weapons and ammunition which were removed for dismounted action.

SECTION VII

INSPECTIONS

■ 15. **GENERAL.**—*a.* To insure mechanical efficiency it is necessary that the armored car systematically receive preventive maintenance and inspections at regular intervals. The car commander is responsible for seeing that all inspections are made. He aids in making inspections and receives the reports from the various crew members relative to their individual inspections. He indicates in his report anything requiring the services of maintenance personnel. In supervising first echelon maintenance he uses his discretion in delegating responsibility to other crew members.

b. The Driver's Report must be prepared carefully and thoroughly. Any irregularity previously reported which is not repaired before the car is used again is reentered on subsequent reports until such time as it has been corrected.

c. For crew duties in performing inspection and maintenance before operation, inspection during operation, inspection at the halt, and inspection after operation, see paragraphs 6 to 9, inclusive, of the appendix.

SECTION VIII

SERVICE OF 37-MM GUN

■ 16. **GENERAL.**—The gun crew of the 37-mm antitank gun consists of the gunner who aims and fires the piece, and the car commander who controls and adjusts fire and also acts as assistant gunner and loader. See paragraphs 10 to 14, inclusive, of the appendix for duties of crew in serving the turret guns. (See fig. 5.)

■ 17. **LOADING.**—The car commander grasps the cartridge at the base with his left hand, turns the projectile to the front, swings his arm toward the breech, and inserts the round in the opening. After the nose of the projectile enters the chamber, he propels the round forward by a quick push with his thumb and fingers on the base of the round, and moves the arm upward to clear the closing breechblock. (See fig. 6. Note position of fingers.) He then touches the leg of

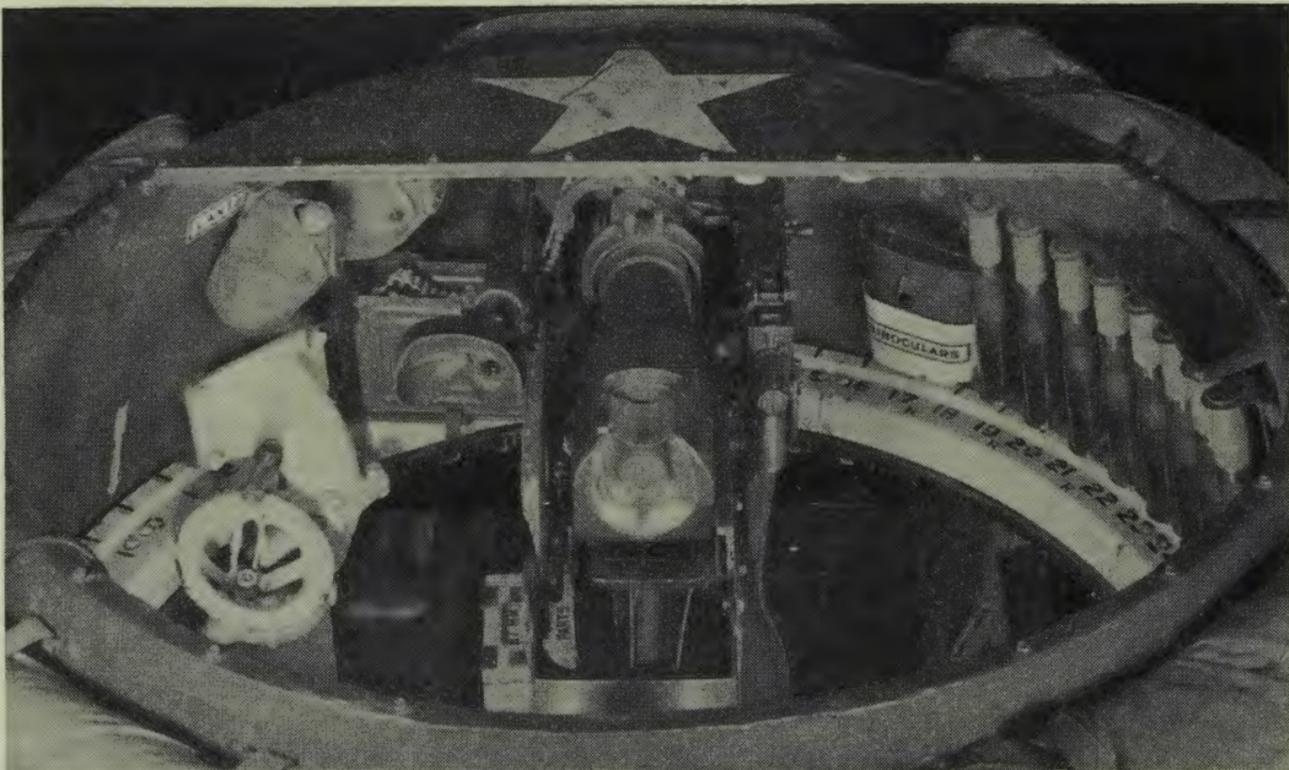


FIGURE 5.—Turret showing location of guns, sight, and other equipment.

the gunner with his foot to indicate that the piece is loaded. After tapping the gunner, the car commander observes the fire and prepares to load another round immediately. *Caution:* The car commander must be sure that no part of his body is in the path of recoil after the breechblock starts to close, since the gunner may fire the piece immediately.

■ 18. FIRING.—The gun having been loaded and the signal to commence firing having been given, the gunner opens fire

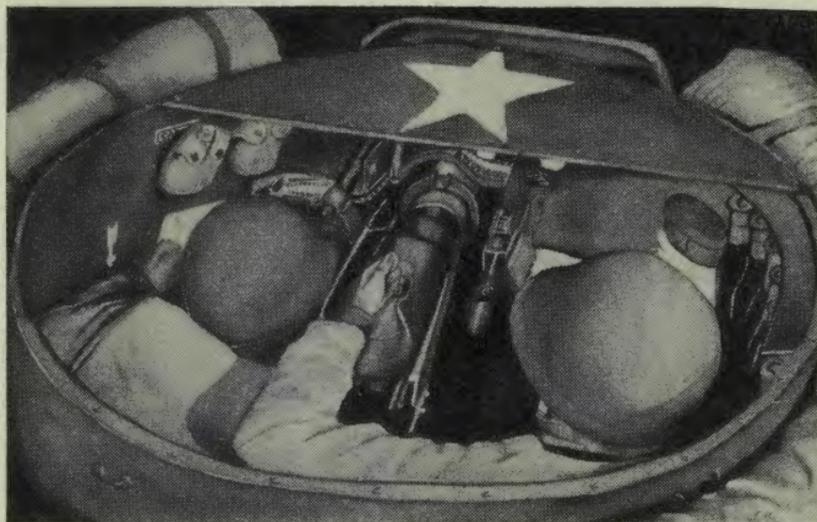


FIGURE 6.—Mounted action.

as soon as he has laid on the target. To fire the gun, the gunner presses the foot pedal which actuates the trigger mechanism. A hand firing lever also is provided in case of malfunction of foot pedal.

■ 19. UNLOADING.—The gun automatically ejects the empty case. To unload an unfired round, the car commander pulls down on the operating handle.

■ 20. UNLOADING A STUCK ROUND.—When a round is stuck in the gun and is not fully chambered so that it can be fired it will be removed under the direct supervision of an officer,

except in combat. The breech is left open and the gunner takes post to receive the round as it is pushed out of the chamber. The car commander, using the rammer staff, rams the round out. The round should be shoved out of the gun with a steady pressure. If this does not suffice, the rammer may be tapped gently with a light block of wood. If the round cannot be removed by this procedure, experienced ordnance personnel should be called.

■ 21. MALFUNCTIONS.—A malfunction of the gun or the ammunition causes a temporary cessation of fire. Most malfunctions can be prevented by proper care and cleaning of gun and ammunition. Immediate action is the procedure followed in order to correct the malfunction promptly. The causes of and immediate action for the various malfunctions of the 37-mm gun M6 are set forth in FM 23-81.

■ 22. CARE AND CLEANING.—The vital importance of proper care and maintenance of vehicular weapons must be stressed throughout crew training. See FM 23-81 and FM 23-50.

SECTION IX

MOUNTED ACTION

■ 23. TO LOAD WEAPONS.—Normally, the 37-mm gun is left unloaded, with breechblock closed, until the actual fire order is given. The car commander then loads the gun. The machine gun is kept half loaded during the approach march, when action is not imminent, and in bivouac. It is kept fully loaded at all times when there is any likelihood of the appearance of enemy targets.

■ 24. DUTIES IN FIRING.—*a.* The car being prepared for action and the weapons loaded, at the command FIRE each crew member executes such of the duties enumerated in paragraph 11 of the appendix as will insure the continued firing of weapons and operation of the car.

b. Driver.—(1) *When car is moving.*—(a) The driver continues to drive in the direction indicated by the car commander. He operates the car at a constant speed, avoiding acceleration and deceleration as much as possible. He does

not deviate from the designated course except to avoid large obstacles or to change course as directed by the car commander. When the car is about to pass over rough ground or make a necessary change of course, the driver warns the gunner by calling "Rough" or "Changing course." Even though the car is slightly off the most advantageous course at the moment, the driver does not make any correction since even a small change in direction will upset the gunner's tracking.

(b) If the car commander does not order a gear ratio, the driver selects a gear ratio which will permit maintenance of the ordered constant speed consistent with the variations of the particular terrain. If the car commander announces the gear, the driver drives at the ordered speed or at a selected speed consistent with the terrain.

(2) *When car is not moving.*—(a) The driver keeps the vehicle in readiness to move promptly on order of the car commander.

(b) He observes the sector assigned by the car commander and reports targets to the car commander.

■ 25. **TO SUSPEND FIRING.**—At the command or signal **SUSPEND FIRING**, firing is stopped as prescribed in paragraph 12 of the appendix.

■ 26. **TO CEASE FIRING.**—At the command **CEASE FIRING**, the crew proceeds as outlined in paragraph 13 of the appendix.

■ 27. **TO SECURE EQUIPMENT.**—At the command **SECURE EQUIPMENT**, the crew proceeds as outlined in paragraph 14 of the appendix.

SECTION X

SPECIAL SITUATIONS

■ 28. **ACTION IN CASE OF FIRE.**—The first crew member to discover a fire gives the alarm, announcing the location of the fire; example, **ENGINE FIRE (HULL FIRE)**. Crew members proceed as follows: The driver takes the hand fire extinguisher and directs it on the fire. Other members of the crew will assist in combating the fire until further progress seems impossible. They dismount only on order of the car com-

mander. When time permits, the crew, in abandoning the vehicle, removes the 37-mm gun sight, the machine gun(s), carbines, grenades, and as much ammunition as possible.

■ 29. TO ABANDON VEHICLE.—At the command ABANDON VEHICLE, crew members follow procedure prescribed in paragraph 5 of the appendix, to fight on foot, except that all available caliber .30 machine-gun ammunition and hand grenades are removed from the car, if the situation permits, as a reserve supply for the crew. If practicable, wounded personnel are removed.

SECTION XI

DESTRUCTION OF EQUIPMENT

■ 30. GENERAL.—*a.* Situations may arise when matériel must be destroyed to prevent—

(1) Its capture intact by the enemy.

(2) Its use by the enemy, if captured, against our own or allied troops.

b. The principles to be followed are:

(1) The destruction of matériel subject to capture or abandonment in the combat zone is undertaken only when in the judgement of the military commander concerned such action is necessary. *The destruction of matériel is a command decision to be implemented only on authority delegated by the division or higher commander.*

(2) Methods for the destruction of matériel subject to capture or abandonment in the combat zone must be adequate, uniform, and easily followed in the field.

(3) Destruction must be as complete as available time, equipment, and personnel will permit. If thorough destruction of all parts cannot be completed, the most important features of the matériel should be destroyed, and parts essential to the operation or use of the matériel which cannot be easily duplicated should be ruined or destroyed. The same essential parts must be destroyed on all like units to prevent the enemy from constructing one complete unit from several damaged ones by cannibalization.

c. Crews will be trained in the prescribed methods of de-

struction, but training will not involve the actual destruction of matériel.

d. Certain methods require special tools and equipment, such as TNT and incendiary grenades, which normally may not be items of issue. The issue of such special tools and matériel, the vehicles for which issued, and the conditions under which destruction will be effected are command decisions in each case, according to the tactical situation.

■ 31. ARMORED CARS.—*a.* To destroy vehicle see paragraph 15 of the appendix.

b. Whenever time and materials are available, combine the vehicle destruction outlined in paragraph 15 of the appendix with the armament and equipment destruction outlined in paragraph 16 of the appendix. If possible, detach and evacuate all machine guns mounted in the vehicle prior to destroying it. For additional methods, see FM 25-10.

■ 32. WEAPONS.—*a.* 37-mm gun.—To destroy 37-mm gun, see paragraph 16 of the appendix. For additional methods, see FM 23-81.

b. Small arms.—For details of destroying carbines and light machine guns, see FM 23-7 and FM 23-50, respectively.

■ 33. RADIO EQUIPMENT.—Secret and confidential equipment, codes, ciphers, cipher devices, and all instruction books will be destroyed beyond recognition when subject to capture or abandonment in the combat area. For details of methods to be employed for destroying various types of communication material, see FM 24-5. Radio sets may be destroyed by smashing with an ax or other heavy instrument. Dispose of broken equipment by burning or burying.

APPENDIX

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To mount.....	1
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To suspend fire.....	12
To cease firing.....	13
To secure equipment.....	14
To destroy vehicle.....	15
To destroy weapons.....	16

■ 1. To MOUNT.—The crew, being at dismantled posts, mounts as follows:

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Commands MOUNT			
Executes about face.	Executes about face.	Executes about face.	Executes about face.
Mounts via mine rack on right side of car. Closes top cover of radio operator's hatch. Takes mounted post on right side of turret.	Mounts via right front of vehicle and takes mounted post to right of driver in bow of the car. (Does not pull or lean on muzzle of 37-mm gun.)	Mounts via left front of vehicle and takes mounted post on left side in bow of the car. (Does not pull or lean on muzzle of 37-mm gun.)	Mounts via mine rack on left side of car, and checks carrying position of guns so that hatch top covers may be closed. Closes top cover of driver's hatch and takes mounted post on left side of turret. Turns OFF-ON switch of radio receiver to ON. Turns OFF-ON switch of transmitter to ON. (Allows 30 seconds for receiver tubes to warm. Switches to assigned channel.)

Connects break-away plug.

Adjusts throat microphone.

Turns radio interphone switch to interphone, depresses switch on microphone cord, and orders: **CHECK INTERPHONE.**

Connects break-away plug.

Adjusts throat microphone.

Depresses switch on microphone cord and reports "Rad ready."

Connects break-away plug.

Adjusts throat microphone.

Depresses switch on microphone cord and reports "Driver ready."

Connects break-away plug.

Adjusts throat microphone.

Depresses switch on microphone cord and reports "Gunner ready."

Receives reports.
Reports "Car commander ready."

■ 2. To CLOSE HATCHES.—The crew, being mounted, proceeds as follows:

CAR COMMANDER RADIO OPERATOR DRIVER GUNNER

Commands C L O S E
HATCHES.

Releases latch of driv-
er's hatch front cov-
er.

Releases latch of and Closes his hatch front
closes his hatch front cover.
cover.

20

■ 3. To OPEN HATCHES.—The crew, being mounted, proceeds as follows:

Commands O P E N
HATCHES.

Grasps hatch front Grasps hatch front
cover handle and cover handle and
opens hatch. opens hatch.

■ 4. To DISMOUNT.—The crew, being mounted, dismounts as follows:

Commands PREPARE

TO DISMOUNT.

Disconnects break-away plug.	Disconnects break-away plug.	Disconnects break-away plug.	Disconnects break-away plug.
Removes throat microphone.	Removes throat microphone.	Removes throat microphone.	Removes throat microphone. Turns OFF-ON switch of radio receiver to OFF. Turns OFF-ON switch of radio transmitter to OFF.
Secures individual weapon.	Secures individual weapon.	Secures individual weapon.	Secures individual weapon.

Commands DISMOUNT.

Dismounts via mine rack on right side of car and takes his dismounted post three paces in front of the right front wheel, facing to the front.	Dismounts via right front of vehicle and takes his dismounted post on left of car commander at close interval (4 inches).	Dismounts via left front of vehicle and takes his dismounted post on left of radio operator at close interval (4 inches).	Dismounts via mine rack on left side of car and takes his dismounted post on left of driver at close interval (4 inches).
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■ 5. To FIGHT ON FOOT.—The crew, being mounted, proceeds as follows:

CAR COMMANDER

RADIO OPERATOR

DRIVER

GUNNER

Commands FIGHT ON
FOOT.

Hands two offensive
grenades and one
smoke grenade to
radio operator.

Receives grenades from
car commander.

Hands two offensive
grenades and one
smoke grenade to
gunner.

Secures individual
weapon, ammuni-
tion, and dismounts.

Receives grenades from
car commander.

Arms himself with two
offensive grenades
and two smoke gre-
nades.

Hands four fragmentation grenades to driver.

Dismounts coaxial machine gun and passes it, together with one box of caliber .30 machine-gun ammunition, to radio operator.

Receives coaxial machine gun and box of caliber .30 machine-gun ammunition from car commander.

Secures individual weapon, ammunition, and dismounts.

Receives grenades from car commander.

Secures individual weapon, ammunition, dismounts, removes tripod for LMG from fender box.

Receives box of caliber .30 machine-gun ammunition from gunner.

Hands box of caliber .30 machine - gun ammunition to driver.

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Receives tripod from driver, moves off; mounts tripod, mans gun as No. 1.	Follows car commander and takes position as No. 2.	Hands tripod for LMG to car commander.	Secures individual weapon, ammunition, and dismounts.
		Follows car commander and radio operator and takes position No. 3.	
			Follows car commander, radio operator and driver, and affords protection for LMG.

■ 6. INSPECTION AND MAINTENANCE BEFORE OPERATION.—The inspection and maintenance operation is divided into three phases to facilitate instruction. At the completion of this inspection, the car should be ready for operation. During training each phase should be ended by the car commander calling for a report. The crew, being formed dismounted, proceeds as follows:

Phase A

Commands INSPECT
EQUIPMENT.

Executes about face. Executes about face. Executes about face. Executes about face.

Mounts turret via right mine rack.

Removes turret opening canvas cover.

Dismounts.

Spreads turret opening canvas cover on ground at right of car.

Removes canvas muzzle cover for 37-mm gun and coaxial machine gun. Folds canvas muzzle cover and places it on ground to right of folded breech cover.

Checks radio antenna for breaks.

Checks radio antenna to determine that—

Mast sections are tight and taped.

Leads at transmitter, receiver, and mast base are tight.

Mast base is tight and not cracked.

Insulators passing through the armor plate are not broken or displaced.

Mounts.

Checks radio set mountings, snaps, snubbers, and similar items.

Looks at ground under car for oil and fuel leaks.

Checks lubricant in final drive, transfer case, and transmission. (This check should be made at least once per week.)

Opens engine compartment. Checks engine oil, water level, generator belts, distributor wiring, air tube connections from carburetors to air cleaners, and makes visual inspection of engine compartment.

Mounts turret via left mine rack.

Assists car commander in removal of turret opening canvas cover.

Removes breech cover of turret guns.

Folds breech cover and places it on ground to right of turret opening canvas cover.

Assists car commander in removal of canvas muzzle cover for 37-mm gun and coaxial machine gun.

CAR COMMANDER

Removes tool roll from right front fender box, opens roll, lays tools on turret opening cover and checks them.

Checks general condition of bogie, springs, shock absorbers, tie rod, drag link, wheels, and tires.

Assembles rammer staff and sponge.

Swabs bore of 37-mm gun.

Checks for presence and condition of fire extinguishers.

RADIO OPERATOR

Checks to see that microphones, keys, and headsets are in good condition and in their proper place.

Replaces all defective headsets and microphones from spares. Turns in defective equipment for repair and replacement.

DRIVER

Checks and cleans battery. (This should be done at least once per week. For continuous operation in hot weather, check twice per week.)

Closes engine compartment. Mounts.

Checks instrument panel to see that clutch pedal and transmission transfer case shift levers operate freely and over their full range.

GUNNER

Enters turret and checks both guns to see that they are unloaded; leaves breechblock on 37-mm gun open.

Releases gun elevating lock. Checks gun elevating mechanism by fully depressing gun. Leaves gun elevated.

Traverses turret 360°, centers gun, and depresses it for swabbing.

Checks hand and foot firing mechanisms for both guns.

Walks around vehicle checking for presence and condition of tow cable, pioneer tools, machine-gun tripod, tarpaulin, and lights.

Checks foot brake for $\frac{1}{4}$ -inch free travel.

Checks lights and siren (if permitted) with car commander.

Checks headspace and half loads machine gun if so directed.

Adjusts sights on 37-mm gun.

Inspects chamber and bore of both guns for dirt, obstructions, and lubrication.

Phase B

Signals driver to start engine.

Assists gunner to check oil in recoil mechanism.

Checks to see that spare antenna sections are in their proper place in the roll, and are stowed so that they will not be damaged or in the way of personnel.

Starts engine at car commander's order and idles at 1,000 rpm.

Checks oil in recoil cylinder with aid of car commander.

CAR COMMANDER

RADIO OPERATOR

DRIVER

GUNNER

Stows tool roll.

Stows or replaces canvas muzzle cover.

Stows turret opening canvas cover.

Replaces or stows breech cover for turret guns.

Checks to see that ground leads are connected at both ends.

Checks to see that tubes are firmly seated in sockets.

Checks for burned-out fuzes and is sure that adequate supply of spare fuzes of proper rating is on hand.
Checks with driver on battery voltage.

Checks instruments and functioning of throttle, clutch, and steering levers.

Replaces breech covers if so directed.
Closes breech lock.

Checks and cleans periscope, periscope sight, spares, and checks knob setting on spare sights.

Checks pioneer compass against known direction.

Checks ammunition supply for quantity, type, stowage, and condition.

Phase C

Takes mounted post.
Connects break-away plug.

Adjusts throat microphone.

With control box on RAD, if tactical situation permits, checks transmission and reception with other cars.

Checks interphone system and calls for report from crew members.

Reports "Car commander ready."

Adjusts throat microphone.

Adjusts volume.

Reports "Rad ready."

Adjusts throat microphone.

Adjusts volume.

Reports "Driver ready."

Adjusts throat microphone.

Adjusts volume.

Reports "Gunner ready."

■ 7. INSPECTION DURING OPERATION.—During operation inspection is continuous. Duties are:

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Remains constantly alert to detect unusual noises and conditions.	Remains constantly alert to detect unusual noises and conditions.	Checks instruments continually.	Checks to assure that 37-mm gun is securely locked in place.
Checks to assure that coaxial machine gun is securely locked in place.		Listens for unusual noises. Detects abnormal functioning of engine.	Checks to assure that stowage is securely fastened in place.
Checks reading of hull compass against known direction.		Checks steering mechanism to detect faults.	
Occasionally checks operation of interphones.		Checks, by application of brakes and opening of throttle, any missing cylinders. (This is done just before operation is completed.)	Checks condition of antenna mast and mast base on left.
Checks operation of radio if tactical situation permits.			
Listens on radio except when interphone is being used.			

Maintains constant check on stowage of equipment.

Checks condition of antenna mast and mast base on right.

■ 8. INSPECTION AT HALT.—At a short halt the vehicle is inspected as follows:

Commands MAKE HALT INSPECTION.

Disconnects break-away plug and removes throat microphone.	Disconnects break-away plug and removes throat microphone.	Disconnects break-way plug and removes throat microphone.	Remains in turret. Acts as air and ground observer.
Dismounts.	Drains oil that may have leaked onto hull floor, after correcting the cause of leakage.	Dismounts.	Tends radio.
Examines wheels, tires, steering, linkage, front axle, and bogie for adjustment and for worn, loose, broken, or missing parts.	Dismounts. Inspects lights if traveling at night with lights.	Walks around vehicle, looking for oil or fuel leaks. Checks oil level. Checks fuel level. Checks water level.	Checks sight adjustment.

CAR COMMANDER**RADIO OPERATOR****DRIVER****GUNNER**

Inspects hull and fittings for worn, missing, or loose parts.

Cleans all vision devices. Cleans trash from and inspects suspension system.

Acts as sentry during sight adjustment.

■ **9. INSPECTION AFTER OPERATION.**—After operation, when vehicle has been moved into bivouac or motor pool, a complete inspection is made of all equipment; fuel oil and ammunition are replenished. The crew proceeds as follows:

Phase A

Commands **INSPECT EQUIPMENT.**

Disconnects break-away plug.

Removes throat microphone.

Dismounts.

Disconnects break-away plug.

Removes throat microphone.

Dismounts.

Disconnects break-away plug.

Removes throat microphone.

Dismounts.

Disconnects break-away plug.

Removes throat microphone.

Turns OFF-ON switch of radio receiver to OFF.

- | | | | |
|---|-----------------|--|--|
| Removes turret canvas opening cover from fender box. | Assists driver. | Checks engine operation, all instruments, ignition, and siren. | Turns OFF-ON switch of radio transmitter to OFF. |
| Spreads turret canvas opening cover on ground at right of car. | | | |
| Takes breech cover and canvas muzzle cover from gunner, folds and places them on ground at right of turret opening cover. | | | Passes breech cover and canvas muzzle cover to car commander. |
| Checks tools and places them on turret opening cover. | | | Checks 37-mm gun and coaxial machine gun to see that they are unloaded. |
| Checks lights. | Mounts. | Checks lights with car commander. | Cleans and lubricates machine gun to extent permitted by tactical situation. |

Phase B

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Assembles cleaning staff.	Moves car as required for inspection of suspension system. Stops engine.	Inspects wheels, tires, steering linkage, front axle, and bogie for adjustment and for worn, loose, broken, or missing parts.	Checks periscope head and spares for damage and cleanliness. Cleans periscope head.
		Checks lubricant in final drive.	Removes loose rounds and empty cases from car. Checks ammunition and notes expenditure of ammunition for report to car commander.
	Checks spare parts for radio(s).		Checks spare parts for guns. Cleans and lubricates breech mechanism of 37-mm gun. Assists car commander in checking recoil oil.
Swabs bore of 37-mm gun. Reassembles cleaning staff. Checks recoil oil.			

Phase C

Inspects hull and fittings for worn, missing, or loose parts.

Inspects all control linkage to locate loose or broken parts.

Checks, cleans, and refills air cleaner with clean oil during extremely dusty operations.

Cleans all vision devices.

Inspects electrical wiring for loose connections.

Cleans crankcase breather and replenishes oil. Replenishes engine oil.

Replenishes water.

Checks servicing of weapons.

Removes and checks fire extinguisher.

Checks condition of battery.

Replenishes battery water.

Phase D

Directs replenishing of fuel.

Stands ready with fire extinguisher to put out fire while driver fills vehicle tank.

Replenishes fuel.

Stows tools.

Replaces breech cover.

CAR COMMANDER**RADIO OPERATOR****DRIVER****GUNNER**

Passes ammunition to gunner.

Passes turret opening cover to gunner and assists gunner in placing it over turret opening.

Replaces canvas muzzle cover.

Completes trip ticket, reports all accidents, malfunctions, and requirements for maintenance, supplies, and ammunition to platoon leader.

Replaces fire extinguisher.

Cleans driver compartment.

Assists radio operator in cleaning driver compartment.

Receives and stows ammunition.

Places turret opening cover over turret, assisted by car commander.

Assists car commander in replacing canvas muzzle cover.

Reports condition and amount of ammunition, supplies, and equipment, and any other pertinent information to car commander.

NOTE.—Members of crew perform such necessary maintenance as possible during inspection.

■ 10. To PREPARE TO FIRE.—Before engaging in range firing or when action is imminent, the car is prepared for firing as follows:

Commands PREPARE TO FIRE.

Assists gunner in removal of breech cover.

Inspects ammunition for proper amount, types, loading, and cleanliness.

Checks to see that no empty cases are on floor.

Removes gun cover of 37-mm gun and coaxial machine gun.

Closes hatch front cover.

Reports "Rad ready."

Closes hatch front cover. Removes breech cover of guns.

Installs and checks sight on 37-mm gun. Checks sight for cleanliness.

Checks guns for cleanliness and lubrication.

Reports "Driver ready."

Disconnects gun mount traveling lock.

Checks traversing and elevating mechanisms.

CAR COMMANDER

RADIO OPERATOR

DRIVER

GUNNER

Checks operation of
breech lock.

Receives report from
crew members.

Reports "Car com-
mander ready."

Checks trigger actuator
mechanisms.

Opens 37-mm breech
lock and inspects
bore for obstruc-
tions; closes breech
lock.

Places box of caliber .30
ammunition in ma-
chine-gun rack.

Checks radio to make
sure it is operating
properly.

Reports "Gunner
ready."

■ 11. DUTIES IN FIRING.—The car being prepared for action, the crew executes the following:

Loads 37-mm gun.

Operates radio.

Gives fire order.

Controls and adjusts fire by sensing strike or trace and announces appropriate changes of range and deflection to gunner.

Controls driver so that car operates tactically with rest of platoon.

Signals "Ready" each time 37-mm has been reloaded. (Touches leg of gunner with his foot to indicate gun is loaded.)

Fires on targets designated by car commander. Continues fire until target is destroyed, new target is designated, or CEASE (SUSPEND) FIRING is given.

Drives in direction indicated by car commander. Operates car at a constant speed. Does not deviate from designated course except to avoid large obstacles. Announces "Changing course" or "rough" when necessary.

CAR COMMANDER**RADIO OPERATOR****DRIVER****GUNNER**

Inspects each round of 37-mm ammunition before loading. Watches recoil and counter-recoil of gun and indicates any necessary adjustments to gunner.

Reduces malfunctions in coaxial machine gun.

Fires antiaircraft gun, if vehicle is so equipped, during air attack.

Informs car commander if caliber .30 machine gun fails to fire by calling "Jam."

Traverses turret, as ordered by car commander, when anti-aircraft machine gun is being fired.

■ 12. To SUSPEND FIRE.—The crew proceeds as follows:

Commands SUSPEND
FIRE.

Reloads 37-mm gun, if
unloaded.

Unloads or orders fire
resumed before
round heats.

Operates car as or-
dered.

Ceases firing.
Puts safety on SAFE.

Observes and lays on
target or lays on new
target if directed.

41 ■ 13. To CEASE FIRING.—The crew proceeds as follows:

Unloads 37-mm gun if
loaded.

Observes for new tar-
gets.

Orders and assists in
the shifting of am-
munition as required.

Operates car as or-
dered.

Ceases firing.
Assists in replenishing
the ready racks.
Observes for new tar-
gets.
Traverses turret as di-
rected by car com-
mander.

■ 14. To SECURE EQUIPMENT.—After firing, when car is to be moved, the crew proceeds as follows:

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
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Commands SECURE EQUIPMENT.

When gun is traversed to straight ahead position, assists gunner in setting gun mount traveling lock.

Traverses turret to straight ahead position.

Assists gunner in replacing breech cover for turret guns.

Opens hatch front cover.

Opens hatch front cover.

Replaces breech cover of turret guns.

Checks ammunition and replenishes if necessary.

Replenishes caliber .30 machine - gun ammunition, if necessary.

Reports "Rad ready."

Reports "Driver ready."

Reports "Gunner ready."

Receives reports from crew members.

Reports "Car commander ready."

- 15. To DESTROY VEHICLE.—It may be necessary to abandon and destroy the vehicle and equipment to prevent its capture by the enemy. (See par. 31.) When the command ABANDON AND DESTROY VEHICLE is given, the crew proceeds as follows:

Time required: 1 to 2 minutes

<p>Punctures gas tank. Removes and empties portable fire extinguishers.</p> <p>Pours gasoline over each tire. (When combined with destruction of vehicle by TNT, fires should be well started before detonating TNT.)</p>	<p>Places 2-pound TNT charge against clutch housing, side of cylinder block, the transmission housing, or transfer case.</p>	<p>Inserts tetryl nonelectric caps with at least 5 feet of safety fuze in each charge.</p> <p>Reports "Gunner ready."</p> <p>Ignites fuzes and takes cover.</p>
<p>Receives reports.</p> <p>Commands IGNITE.</p> <p>Takes cover.</p>	<p>Reports "Rad ready."</p> <p>Takes cover.</p>	<p>Reports "Driver ready."</p> <p>Takes cover.</p>

■ 16. To DESTROY WEAPONS.—The destruction of the 37-mm gun is accomplished by one or a combination of the following methods (see par 32):

Method No. 1

Time required: 2 to 3 minutes, if ramrod is used to plug bore and cut-down TNT is carried with car

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Opens drain plug on recoil mechanism, allowing recoil fluid to drain.	Assists car commander and driver.		Detaches all optical sights. (If evacuation is possible, carries sights; if evacuation is not possible, thoroughly smashes sights.)
Removes HE shell from a complete round and seats shell in chamber.			
Cuts down a ½-pound TNT block to fit snugly in chamber behind the HE shell.			

Plugs bore for approximately two-thirds of its length, using a ramrod wrapped with cloth or waste to make it fit tightly in the bore. (Mud, stones, or clay may be used in lieu of the ramrod.)

Inserts a tetryl non-electric cap, with approximately 3 or 4 feet of safety fuze into TNT block. Closes breech as far as possible.

Ignites safety fuze and takes cover 100 yards from gun.

Method No. 2

Time required: 1 to 2 minutes using ramrod to plug the bore; longer if the bore is plugged with mud or other material.

CAR COMMANDER	RADIO OPERATOR	DRIVER	GUNNER
Opens drain plug on recoil mechanism, allowing recoil fluid to drain.	Duties are same as prescribed in Method No. 1.	Plugs bore for approximately two-thirds of its length, using a ramrod wrapped with cloth or waste to make it fit tightly in the bore. (Mud, stones, or lay may be used in lieu of the ramrod.)	Duties are same as prescribed in Method No. 1.
Inserts one complete HE round into gun and closes breech.			
Takes cover and fires gun, using a lanyard 100 feet long.	Takes cover 100 yards from gun.	Takes cover 100 yards from gun.	Takes cover 100 yards from gun.

Method No. 3

Time required: 2 to 3 minutes

Opens drain plug on re-
coil mechanism, al-
lowing recoil fluid to
drain.

Takes cover.

Inserts HE shell in
chamber and closes
breech.

Jams HE shell in
muzzle.

Takes cover.

Takes cover and fires
gun using a lanyard
100 feet long.

Duties are same as pre-
scribed in Method
No. 1.

Takes cover.