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FM 18-18

WAR DEPARTMENT FIELD MANUAL

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CREW DRILL, GUN

MOTOR CARRIAGE, M36

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WAR DEPARTMENT • DECEMBER 1944

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FM 18–18, Crew Drill, Gun Motor Carriage, M36, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

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For explanation of symbols, see FM 21–6.

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SECTION I

GENERAL

1. PURPOSE AND SCOPE. **a.** This manual is designed for the use of the platoon commander and destroyer commander in training members of the crew of the gun motor carriage M36. It is to be used as a guide to achieve orderly, disciplined, and efficient execution of action, and precision, accuracy, and speed in the service of the vehicle and weapons.

b. Procedures for the following are prescribed in FM 18–15:

(1) Combat formations.

(2) Ceremonies and field inspections.

(3) Commands.

c. Procedure for placing antiaircraft gun in action is prescribed in FM 23–65.

d. Care of the gun, causes of, and immediate action for, malfunctions of the 90-mm gun are prescribed in TM 9–374.

e. Precautions to be observed in handling misfires are prescribed in AR 750–10.

f. Duties of the automotive driver are prescribed in FM 25–10 and TM 21–301.

g. Reconnaissance procedure is prescribed in FM 18–22.

2. DESCRIPTION. The gun motor carriage M36 consists of a 90-mm gun, turret mounted, on an armored full-track vehicle. The gun has a 6,400-mil traverse, elevation from approximately minus 178 mils to plus 349 mils, and is designed

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Note. For definition of military terms not defined in this manual see TM 20–205.

for one-man (gunner) control for aiming, laying, and firing. Handling and loading of ammunition are done by the assistant gunner (loader). Details for service of the full-track vehicle are prescribed in TM 9–758.

3. **TRAINING PRINCIPLE.** Crew drill fixes habits of precision and speed. Strict adherence to standardized procedures during drill insures smooth teamwork in battle.

SECTION II

CREW COMPOSITION AND FORMATIONS

4. COMPOSITION. The crew of the M36 tank destroyer consists of five members—a destroyer commander, a gunner, an assistant gunner, an assistant driver, and a driver.

5. FORMATIONS. a. Dismounted posts. The crew forms in one rank. The destroyer commander places himself three paces to front (or rear) of right track of vehicle, facing to the front. The others form at double time in line at close interval on the commander's left in the following order, right to left: gunner, assistant gunner, assistant driver, and driver. (See figs. 1 and 2.)

IN FRONT, FALL IN

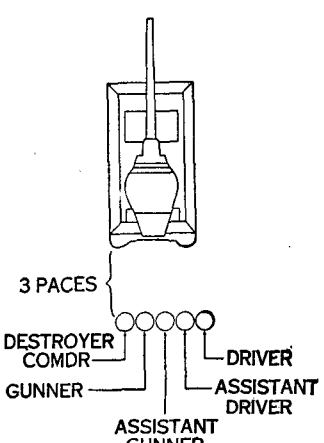


Figure 1. Dismounted posts.

IN REAR, FALL IN

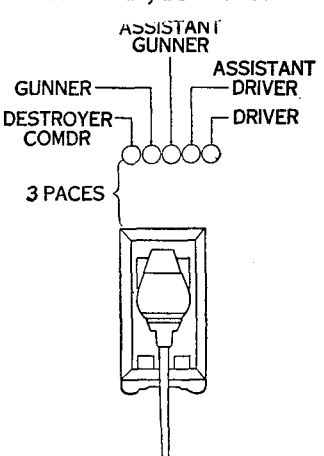


Figure 2. Dismounted posts.

b. **Mounted posts.** The crew forms mounted as follows (fig. 3):

(1) *Destroyer commander.* In turret, on seat in rear of gunner to right of 90-mm gun.

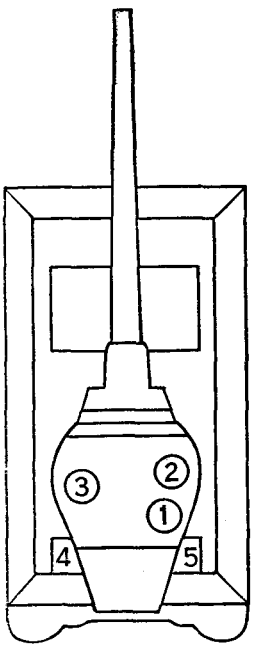


Figure 3. Mounted posts.

(2) *Gunner.* In turret, on gunner's seat to right of 90-mm gun.

(3) *Assistant gunner.* In turret, standing at left of 90-mm gun.

(4) *Assistant driver.* In assistant driver's seat.

(5) *Driver.* In driver's seat.

6. **TO FORM CREW.** a. **Crew being dismounted.** At the command IN FRONT, FALL IN, the crew takes dismounted posts in front of the destroyer. (See par. 5a and fig. 1.) At the command IN REAR, FALL IN, the crew takes dismounted posts in rear of the destroyer. (See par. 5a and fig. 2.) In falling in, crew members dress automatically on the destroyer 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. The crew habitually falls out to the right of the vehicle.

c. **Crew being at dismounted posts.** At the command CALL OFF, the gunner calls off "one"; assistant gunner, "two"; assistant driver, "three"; and driver, "four."

d. **Crew being at dismounted posts.** To change designations and duties, the command is CHANGE POSTS.

(1) At the command—

(*a*) The destroyer commander moves by the rear to the left flank position and becomes the driver.

(*b*) The other members of the crew move smartly to the right one position and prepare to call off their new designations.

(*c*) The new destroyer commander commands CALL OFF, as soon as the crew is re-formed in line.

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

SECTION III

CREW CONTROL

7. OPERATION OF INTERPHONE AND RADIO. a. Interphone communication is provided for each crew member, and radio communication is provided for the commander and the assistant driver, who is also the radio operator. The interphone is used whenever the tank destroyer is operated. After mounting, headsets and microphones are put on and tested according to the following procedure:

(1) Each crew member plugs in his headset and microphone cords.

(2) The destroyer commander and assistant driver turn their radio-interphone switch to INT, and the other crew members to RADIO. The commander orders CHECK INTERPHONE. Each member of the crew reports "Ready" to the destroyer commander in the following order: gunner, assistant gunner, assistant driver, and driver. During this procedure, 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.

(3) The RADIO-INT switches on all control boxes, except the destroyer commander's and the assistant driver's, *must be set on* RADIO. *This is the normal position for interphone operation.* Except in an emergency, *no one but these two members* may operate the RADIO-INT switch on his control box. In an emergency, the driver may signal the radio operator by throwing his control box switch to INT and simultaneously operating his microphone switch. *He should immediately return his control box switch to* RADIO. This signal

consists of a loud tone in the destroyer commander's or assistant driver's headset which interferes with his reception of the radio. Upon receipt of this signal the commander, or assistant driver, operates his control box switch to INT at the earliest opportunity and establishes interphone communication with the crew. Whenever the commander must establish interphone communication with the crew, the assistant driver throws his switch to RADIO and tends the radio.

(4) The commander or assistant driver reports into the radio net at the designated time. When the net is opened, one qualified crew member must tend the radio at all times.

b. It is the duty of each man to check his personal interphone equipment upon mounting the destroyer; he should see that it is properly maintained, and report any difficulties to the destroyer commander.

c. Definite vehicle control commands and terminology reduce conversation to a minimum. The use of general conversation minimizes the value of the interphone, is conducive to frequent misunderstandings and disorder, and breaks down crew discipline. The following interphone language illustrates the simplicity and brevity which must be used:

(1) *Terms.*

Destroyer commander	Sergeant.
Driver	Driver.
Gunner	Gunner.
Assistant gunner	Loader.
Any armored vehicle	Tank, half-track, armored car, destroyer.
Any unarmored vehicle	Truck, car.
Any antitank gun	Antitank.
Infantry	Infantry.
Machine gun	Machine gun.
Airplane	Plane.

(2) *Commands for movement of destroyer.*

To move forward	DRIVER MOVE OUT.
To halt	DRIVER STOP.
To reverse	DRIVER REVERSE.
To decrease speed	DRIVER SLOW DOWN.
To increase speed	DRIVER FASTER.
To change direction	DRIVER RIGHT (LEFT).
To turn right (left) 180°	DRIVER COUNTER-MARCH RIGHT (LEFT).
To follow in column	DRIVER FOLLOW THAT VEHICLE (DRIVER FOLLOW THAT HALF-TRACK)
To follow on road or trail	DRIVER STAY ON ROAD (TRAIL).
To start engine	DRIVER CRANK UP.
To stop engine	DRIVER CUT ENGINE.
To proceed in a specific gear	DRIVER THIRD (FIRST) GEAR.
To proceed at same speed	DRIVER STEADY.

(3) *Commands for control of turret.*

To traverse turret	GUNNER TRAVERSE LEFT (RIGHT) (REAR).
To stop turret traverse	GUNNER STEADY-Y-Y-Y, ON.

(4) *Miscellaneous.*

To dismount	DISMOUNT.
To dismount and fight on foot	FIGHT ON FOOT.
To dismount and abandon vehicle	ABANDON VEHICLE.
To indicate action	ACTION RIGHT (LEFT) (FRONT).
To go out of action	OUT OF ACTION.
To close vehicle hatches	CLOSE HATCHES.
To abandon and destroy equipment.	ABANDON AND DESTROY GUN (VEHICLE).
To give fire alarm	ENGINE (HULL) FIRE.

SECTION IV

CREW DRILL, GUN MOTOR CARRIAGE, M36

8. TO MOUNT. a. The crew, being at dismounted posts in front of the destroyer (fig. 1), mounts as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: POSTS.				
Executes about face.	Executes about face.	Executes about face.	Executes about face.	Executes about face.
Supervises mounting of rest of crew.	Mounts over left front of vehicle, closes driver's hatch, and goes over top of turret to gunner's seat.	Mounts over right front of vehicle, closes assistant driver's hatch, and goes over top of turret to position on left of 90-mm gun.	Mounts over right front of vehicle and enters through his hatch.	Mounts over left front of vehicle and enters through his hatch.
Mounts over front of vehicle and moves to his position.				
Connects and checks interphone.	Connects and checks interphone.	Connects and checks interphone.	Connects and checks interphone. Turns radio on.	Connects and checks interphone.
Commands: REPORT.				
Receives reports.	Reports "Gunner ready."	Reports "Assistant gunner ready."	Reports "Assistant driver ready."	Reports "Driver ready."
Reports "Destroyer No. . . . .ready."				

b. The crew, being at dismounted posts in rear of the destroyer (fig. 2), mounts as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: POSTS.				
Supervises mounting of rest of crew.	Mounts over right side of vehicle and moves to gunner's seat.	Mounts over left side of vehicle and moves to position left of 90-mm gun.	Mounts over right side of vehicle and moves through turret to assistant driver's seat.	Mounts over left side of vehicle and moves through turret to driver's seat.
Mounts over right side of vehicle and moves to his position.				
Connects and checks interphone.	Connects and checks interphone.	Connects and checks interphone.	Connects and checks interphone. Turns radio on.	Connects and checks interphone.
Commands: REPORT.				
Receives reports. Reports "Destroyer No. . . . . ready."	Reports "Gunner ready."	Reports "Assistant gunner ready."	Reports "Assistant driver ready."	Reports "Driver ready."

9. **TO OPEN HATCHES.** The crew, being mounted, proceeds as follows:

Destroyer Commander			Assistant Driver	Driver
Commands: OPEN HATCHES.			Pulls periscope to travel position, opens hatch, and adjusts seat to highest position.	Pulls periscope to travel position, opens hatch, and adjusts seat to highest position.

10. **TO DISMOUNT.** The crew, being mounted, dismounts as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: PREPARE TO DISMOUNT.				
Disconnects interphone.	Disconnects interphone.	Disconnects interphone.	Disconnects interphone. Turns off radio.	Disconnects interphone.
Commands: IN FRONT (REAR) FALL IN.				
Makes sure all members of crew are dismounted and then takes his post.	Leaves through top of turret, raises driver's hatch if closed, and takes dismounted post.	Leaves through top of turret, raises assistant driver's hatch if closed, and takes dismounted post.	Emerges from hatch and takes dismounted post. Remains in the destroyer as radio tender when the radio is to be operated.	Emerges from hatch and takes dismounted post.

11. **TO PREPARE FOR ACTION.** Before engaging in range firing, or when action is imminent, the destroyer is prepared for firing as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: PREPARE FOR ACTION.				
Directs destroyer under cover to general area assigned.	Unbuckles breech cover. Unlatches gun traveling lock. Elevates gun. Releases turret lock.	Unbuckles breech cover and buckles it to turret to serve as empty shell bag. Checks interphone connection.	Adjusts seat to low position and closes hatch if open. Adjusts periscope. Checks interphone connections.	Adjusts seat to low position and closes hatch if open. Adjusts periscope. Checks interphone connections.

Makes personal reconnaissance of area for the best position to occupy and best routes thereto. Guides destroyer into selected position. Removes muzzle cover and places cross hairs on muzzle. Removes cover from caliber .50 machine gun and checks headspace. Directs and supervises the gun crew in preparation for action, including preparation of range cards. Checks interphone and radio connections. Inspects matériel. Checks boresight. Reports or signals "Destroyer number . . . . . correct. . . . rounds of ammunition. . . tanks of fuel."	Engages, starts, and checks the operation of the hand and power traversing mechanism and traverses gun to position of readiness. Checks recoil mechanism. Checks electrical and manual firing mechanism. Reports to assistant gunner "Firing mechanism correct." Inspects sights and checks setting of sight adjusting knobs. Boresights. Checks maximum depression to various masks in field of fire (in indirect fire). Checks interphone connection. Reports to assistant driver "Gun correct, ... rounds on hand."	Partially opens breech, inspects bore, closes breechblock, and relatches the operating handle. Reports to gunner "Bore correct." Fastens gun traveling lock pin. Checks turret ready clips and ammunition sponsons to be sure they are full. Reports ammunition to gunner ". . . . rounds on hand." Checks recoil mechanism. Cocks gun as directed by gunner. Removes retainer, firing spring, and percussion mechanism. Replaces retainer, firing spring, and percussion mechanism. Opens breech and relatches operating handle. Reports "loader ready" and stands by to load on fire order.	Checks radio connections. Repeats gunner's and driver's report to destroyer commander, "Gun correct, . . rounds on hand. . . . . tanks of fuel."	Checks battery switches. Checks engine operation. Moves vehicle as directed by destroyer commander. Reports to assistant driver ". . . tanks of fuel."

12. **DUTIES OF MEMBERS OF CREW DURING MARCHES.** When prepared for action during the march, members observe definite sectors for both air and ground attack.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
General observation of surrounding terrain and sky, picking likely positions and choosing routes of movement.	Observes to rear, left rear, and left flank of vehicle, both ground and air.	Observes to rear, right rear, and right flank of vehicle, both ground and air.	Observes to right front, front, and right flank of vehicle, both ground and air.	Observes road ahead, and for short distances to right and left of the road, keeping sharp lookout for any evidence of mines, barricades, etc. Continually selects points at which the vehicle could leave the road.

13. **STAND BY.** The crew, being mounted, observes sectors as in paragraph 12, and proceeds as follows:

Destroyer Commander			Assistant Driver	Driver
Commands: STAND BY.			Assists driver in making quick check of vehicle.	Stops the vehicle in the best concealment or cover available, keeps engine idling at 800 rpm and makes a quick check of the condition of the vehicle.

14. **DETAILED DUTIES IN FIRING (DIRECT LAYING).** The destroyer being prepared for action, the crew executes the following:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Is responsible for proper performance of vehicle and crew, execution of commands, and observance of safety precautions. Assumes independent command in the absence of higher commander.	Reports to commander "Check" after the range has been received and he has identified the target.	Loads the piece.	Observes to right and front through periscope.	Observes to left and front through periscope.
Directs the crew member who is in the most convenient position to fire the antiaircraft machine gun.	Receives balance of the fire order. If any element of the order is not understood, the gunner will ask for it. For example, if he fails to hear the range, he will ask "Range?"	Calls "Clear" when clear of recoil.	Operates radio as directed by commander.	Keeps engine running at 800 rpm and observes instruments.
Selects primary, alternate, and supplementary positions.	Lays on target with proper range and lead.	Prepares the ammunition and when firing HE shell, sets fuze.	Responsible that commander receives all orders from higher headquarters promptly.	Takes over assistant driver's duties if he replaces a casualty.
Is responsible for fire discipline.	Fires gun.	Reports ammunition status.		Keeps commander informed of fuel supply.
Issues fire order.	Fires until target is destroyed, a new target is designated, or until SUSPEND FIRING or CEASE FIRING is given.	When gunner calls "Misfire," checks to make certain breech is closed and gun is in battery, recocks gun, and reports "Clear" when clear of recoil.		
Observes fire.	Assumes command in absence of destroyer commander.	Empties shell case bag during lulls in firing.		
Adjusts fire by subsequent fire orders.		Starts auxiliary generator on order.		
Causes destroyer to be moved to alternate or supplementary positions when necessary.				

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Shifts fire to new target when necessary. Insures that casualties are replaced when possible.				

15. **DETAILED DUTIES IN FIRING (INDIRECT LAYING).** The destroyer being prepared for action, the crew executes the following:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Indicates aiming point to gunner. Sets gunner's quadrant when it is used. Gives gunner deflection shift. When ordered, adjusts fire from forward position. Gives gunner order to fire. In volley fire reports "Rounds complete." Requests commands be repeated when necessary. *Note.* For further details of duties of destroyer commander in firing (indirect laying) see appendix.	Lays the gun for direction as directed by destroyer commander. Lays for elevation by leveling bubble of gunner's quadrant, under direction of destroyer commander. Sets deflection with aid of azimuth indicator. Records base deflection by aligning aiming stakes and setting indicator at zero. Makes designated corrections in deflection and elevation.	Loads the gun. Empties shell case bags during lulls in firing. Starts auxiliary generator on order. In absence of destroyer commander, sets gunner's quadrant and reports "Set" when bubble is level. In volley fire, calls out the number of the round.	Operates radio as directed by commander. Responsible that commander receives all orders from higher headquarters. Puts out aiming stakes. Assists gunner realign aiming stakes when so directed. Helps driver prepare ammunition. Stands on destroyer deck and passes rounds from driver to loader. Sets the fuze. Assists driver in using the rammer.	Places destroyer as directed by platoon leader. Stops engine. Prepares ammunition. Checks condition of rounds. Passes rounds to assistant driver. Keeps destroyer commander informed as to status of ammunition. Uses rammer. Performs other duties as directed by destroyer commander.

	Calls "Ready" and fires on command. Assisted by assistant driver, realigns aiming stakes during lulls in firing.			

16. **TO SUSPEND FIRING.** The crew proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: SUSPEND FIRING.				
Orders round removed if chamber is hot.	Continues to lay on target, or lays on new target as directed.	Reloads gun if unloaded.	Continues to observe sector assigned by destroyer commander.	Continues to observe sector assigned by destroyer commander.

17. **TO CEASE FIRING.** The crew proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: CEASE FIRING.				
Orders the shifting of ammunition if necessary.	Ceases firing.	Unloads the 90-mm gun, if loaded.	Continues to observe sector assigned by destroyer commander.	Continues to observe sector assigned by destroyer commander.
Observes for new targets.	Turns firing switch to OFF position. Helps the assistant gunner to replenish the ready racks when directed by the destroyer commander. Observes for new targets to the front or traverses	Assisted by the gunner, replenishes the ready racks from the ammunition in the sponson racks. Throws empty shell cases out of the turret when so directed. Empties the caliber .50 spent car-		

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
	the turret as directed by the destroyer commander.	tridge cases into boxes and places them in rack. Shifts caliber .50 ammunition, if necessary. Reports ammunition status to destroyer commander.		

18. TO MOVE TO ALTERNATE OR SUPPLEMENTARY POSITION. The crew, being mounted, proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Gunner	Driver
Orders gun locked in desired position. Orders gun left loaded or unloaded. Directs driver to move to desired position.	Traverses gun to position designated by commander. Locks turret lock. Reports "Turret lock engaged" upon inquiry by driver.	Clears away empty shell cases. Unloads or loads gun as directed by destroyer commander.	Observes his assigned sector.	Prepares to move vehicle on orders of destroyer commander. On orders to move, inquires "Is turret lock engaged?" Moves as directed upon receiving "Turret lock engaged."

19. TO EXECUTE MARCH ORDER. The crew, being mounted, proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: MARCH ORDER.				
Supervises work of crew and receives their report.	Places gun in traveling position and locks traveling lock.	Checks bore to see that it is clear, closes breech, and reports, "Bore correct."	Removes periscope and places in container.	Removes periscope and places in container.
Places cover on AA machine gun and replaces destroyer muzzle cover.	Assists in replacing breech cover.	Replaces breech cover.	Opens hatch.	Checks fuel and lubricant gauges.
Checks that piece is locked in traveling position.	Locks turret lock.	Disposes of empty shell cases.	Removes aiming stakes and replaces muzzle cover when directed by the destroyer commander.	Reports to assistant driver ". . . . tanks of fuel."
Reports to next higher commander, "Destroyer . . . march order. . . . rounds. . . . tanks fuel."	Reports "Turret lock engaged" upon inquiry by driver.	Replaces and secures ammunition in ready racks.	Reports to commander, "Destroyer march order." ". . . . tanks of fuel. . . . rounds on hand."	Opens hatch.
Directs driver in proper direction.	Opens traversing and firing switches.	Reports to gunner ". . . . rounds on hand."	Remains alert to use available small arms.	On order to move inquiries "Is turret lock engaged?"
	Reports to assistant driver "Gun march order, . . . rounds on hand."			Moves out as directed upon receiving "Turret lock engaged."

20. DUTIES AFTER FIRING. The crew proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Supervises duties of crew.	Inspects gun and mounting for any failures or looseness.	Swabs bore of gun.	Assists the driver in making repairs or other adjustments as needed.	Inspects vehicle for any failure or looseness.
Inspects for lubrication, mechanical condition, and cleanliness, and causes all possible repairs and adjustments to be made.	Helps clean gun.	Checks recoil oil; refills or drains, if necessary.		
	If sight has not been accurate during firing, reports condition and boresights if necessary.	Checks and reports ammunition to commander.		
		Refills ammunition rack, inspecting rounds carefully		

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
		for burs, dents, and other imperfections.		

21. **ACTION IN CASE OF ENGINE FIRE.** The first crew member to discover the fire calls "Engine fire."

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Calls "Engine fire" over interphone to alert all members of the crew. Passes fire extinguisher to gunner. Supervises extinguishing of fire.	Dismounts from vehicle. Receives fire extinguisher from destroyer commander. Uses fire extinguisher as directed.	Passes turret hand fire extinguisher to the destroyer commander. Remains at his post.	Dismounts from vehicle. Takes hand fire extinguisher from destroyer. Uses fire extinguisher as directed.	Pulls one remote-control fire switch. If moving, brings destroyer to a halt and races the engine. Puls second remote-control fire switch when ordered by destroyer commander.

22. **ACTION IN CASE OF CREW COMPARTMENT FIRE.** The first crew member to discover the fire calls "Hull fire."

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Supervises extinguishing of fire and commands DISMOUNT when further progress is impossible.	Traverses turret as directed to facilitate use of hand extinguishers.	Takes hand fire extinguisher from turret and extinguishes fire.	Acts as directed by destroyer commander or driver. If fire is in control compartment, removes hand fire	Stops destroyer and shuts off engine.

				extinguisher and extinguishes the fire, or passes it to driver who will extinguish the fire.

23. DISMOUNTED ACTION. The crew being mounted, proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: FIGHT ON FOOT, MACHINE GUN TO BE MOUNTED THERE (pointing).				
Dismounts machine gun and hands it over side of destroyer to assistant driver.	Secures individual weapon and dismounts.	Passes machine gun tripod to gunner.	Secures individual weapon and dismounts.	Secures individual weapon.
Secures individual weapon and dismounts.	Receives machine gun tripod and sets it up at designated place.	Hands ammunition box to assistant driver.	Receives ammunition box.	Stays in destroyer ready to move vehicle when ordered.
Moves to flank and covers machine gun on flank and rear.		Assists in handing machine gun to assistant driver.	Carries machine gun and ammunition box.	Operates radio.
		Secures individual weapon and dismounts.	Places machine gun on mount.	Observes through periscope.
		Carries machine gun and places it on mount.	Moves to flank and covers machine gun.	Checks fuel, oil, and water level.
		Acts as assistant gunner.		

For drill, the machine gun is mounted 5 yards in front of the center of the destroyer, and the crew takes posts as prescribed in FM 23-65.

24. TO REMOUNT DESTROYER AFTER ACTION. The crew, being dismounted, proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: OUT OF ACTION, MOUNT.				

The machine gun is taken out of action as prescribed in FM 23–65, the destroyer crew replaces weapons and ammunition in the destroyer and mounts to position described in paragraph 8.

25. TO ABANDON DESTROYER. The crew, being mounted, proceeds as follows:

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Displays the flag signal "disregard my movement." Dismounts caliber .50 machine gun from mount and hands it over side to assistant driver. Secures individual weapon and dismounts. Designates crew member to guard vehicle if it is not to be destroyed, and maintains radio contact with platoon commander. Supervises dismounted action of the destroyer crew.	Secures individual weapon and dismounts. Receives caliber .50 tripod from assistant gunner.	Hands caliber .50 tripod to gunner. Assists destroyer commander in dismounting caliber .50 machine gun. Secures individual weapon, hands out ammunition and crew first-aid kit.	Secures individual weapon and dismounts. Receives caliber .50 machine gun.	Stops the destroyer and shuts off the engine. Secures individual weapon and dismounts.

SECTION V

INSPECTIONS AND MAINTENANCE

26. GENERAL. a. The destroyer commander is responsible for seeing that all inspections are made. He receives reports from the various crew members relative to their individual inspections, and he indicates in his report anything requiring the service of maintenance personnel. In supervising first-echelon maintenance, he uses his discretion in delegating additional responsibilities to other crew members.

b. Inspection covers all individual equipment and weapons, vehicular equipment and weapons, and mechanical features of the vehicle. Checks of instruments, lights, siren, track, suspension system, and engine performance are made in accordance with provisions of the appropriate Technical Manual; the driver fills in his Driver's Report indicating required maintenance work. The Driver's Report should be carefully and thoroughly prepared. Any irregularity noted and entered on the report, which is not repaired before the destroyer is used again, should be re-entered continually on the report until it has been properly taken care of.

27. BEFORE OPERATION INSPECTION. Destroyer is locked and covered by a tarpaulin. (For training purposes, the inspection is divided into two phases. Crew members secure tools as needed, report and correct deficiencies as found. The turret is traversed as necessary to facilitate the various operations.)

PHASE A

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: FALL IN: PREPARE FOR INSPECTION.				
Inspects crew.	Stands inspection.	Stands inspection.	Stands inspection.	Stands inspection.
Commands: PREPARE FOR BEFORE OPERATION INSPECTION.				
Unties right side of tarpaulin.	Mounts right rear; helps fold tarpaulin.	Mounts left front; helps fold tarpaulin.	Mounts right front; helps fold tarpaulin.	Unties left side of tarpaulin. Checks windshield. Lays tarpaulin on right side of destroyer.
Removes muzzle cover and hands it to assistant driver.		Removes and stows MG cover.	Stows muzzle cover.	
Helps lay out tarpaulin and tools.	Hands tools to driver.	Removes and stows breech cover.	Hands tools to gunner.	Lays out tools on tarpaulin. Begins trip ticket; fills out during inspection.
Supervises inspections by other crew members.				
Takes dismounted post and commands: REPORT.	Takes dismounted post. Reports "No. 1 ready."	Takes dismounted post. Reports "No. 2 ready."	Takes dismounted post. Reports "No. 3 ready."	Takes dismounted post. Reports "No. 4 ready."

PHASE B

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: PERFORM BEFORE OPERATION INSPECTION.				
Makes visual inspection for: Final drive leaks. Faulty drive sprockets. Dead blocks. Unusual wear of bogie wheels and support rollers. Completeness of pioneer equipment.	Checks following: Tube. Recoil oil. Gun tools and spare parts. Elevates tube out of traveling rest lock. Checks sight adjustment. Checks gunner's quadrant.	Mounts. Under right subfloor, checks: Rations. Pyrotechnics. Water cans. Stove. Hull drain valves. Machine gun ammunition and spare parts.	On right side, checks: Front towing shackle. Fender. Final drive. Tow cable. Sees that drive sprocket, idler wheel, bogie wheel, and support roller assembly and mounting nuts are present and secure.	On left side, checks: Front towing shackle. Fender. Final drive. Sees that drive sprocket, idler wheel, bogie wheel, and support roller assembly and mounting nuts are present and secure.
Disengages gun traveling rest lock.	Traverses turret 90° to right to check: Manual mechanism. Power mechanism. Azimuth indicator.	Turns on master battery switch. Opens fuel valves. Disengages gun travel lock.	Inspects track for damage, loose connectors and wedge nuts.	Inspects track for damage, loose connectors and wedge nuts.
Mounts rear of destroyer.	Opens breech.	Checks portable fire extinguisher.	Checks track tension.	Checks track tension.
Checks following: Stowage in turret. Binoculars. Flag set. Panel set. Canteens. Folding canvas bucket. Decontaminator.	Checks bore. Closes breech. Checks manual firing mechanism. Cocks piece. Turns on firing switch. Checks electrical firing mechanism.	Checks and starts auxiliary generator. (Runs generator while power traversing mechanism is operated.) Checks flashlight. Checks rammer staff. Checks stowage of 90-mm ammunition.	Examines volute springs and bogie units for security. Checks following: Rear towing shackle. Security of pioneer equipment. Pintle. Mounts rear of destroyer.	Examines volute springs and bogie units for security. Checks rear towing shackle. Looks under vehicle for fuel, oil, coolant, and gear oil leaks. Mounts rear of destroyer. Checks left fuel tanks.

PHASE B—Continued

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
			Checks right fuel tanks. Helps open top engine compartment doors. On right side, checks: Anchorage of auxiliary generator. For fuel and oil leaks. Cooling system. Air cleaner. Belts and accessories. Generator. Accessory drive oil level. Helps close engine compartment.	Opens top engine compartment doors. On left side, checks: Engine oil level.* For fuel and oil leaks. Fuel filter for security. Cooling system. Air cleaner. Crankcase breather. Belts and accessories. Generator. Accessory drive oil level. Control linkage. Closes engine compartment.
	Traverses gun to the front. Checks flashlight. Checks sightlight.	Under left subfloor, checks: Batteries. Fixed fire extinguishers. Vehicle manuals. Hull drain valves. Water can.	Opens and hooks assistant driver's compartment hatch. Enters compartment. Turns on master radio battery switch.	Opens and hooks driver's compartment hatch. Enters compartment. Checks instruments. (See TM 9–758.)
Connects breakaway plugs. Checks radio and interphone operation.	Connects breakaway plugs. Checks radio and interphone operation.	Connects breakaway plugs. Checks radio and interphone operation.	Connects breakaway plugs. Checks radio and interphone operation.	Connects breakaway plugs. Checks radio and interphone operation.

Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.
Dismounts.			Checks following:	Checks fire extinguisher.
Applies tape muzzle cover.			Transmission oil level.	Checks flashlight.
			Transmission and differential vents.	Puts gearshift in neutral.
			Escape hatch.	Checks primer pump.
			Compass.	Starts engine.
			Trigger-type oiler.	Checks following:
			Decontaminator.	Instruments.
			Periscopes and spare heads.	Siren.
				First-aid kit.
				Throttles.
				Steering linkage.
Removes headlight socket protector plugs.			Releases headlight lock.	Releases headlight lock.
			Hands headlight to destroyer commander.	Hands headlight to destroyer commander.
Installs and checks headlights.				Operates light switch for destroyer commander to check lights.
Removes headlights and hands to assistant driver and driver.			Releases headlight lock.	Releases headlight lock.
			Stows headlight.	Stows headlight.
Replaces headlight socket protector plugs.			Locks headlight lock.	Locks headlight lock.
Directs driver to move destroyer forward one vehicle length.	Elevates tube.		Dismounts and closes hatch.	Checks engine warm up.
	Traverses tube 180° to left.		Replaces tools in tool bag.	Checks magnetos.
Checks for dead blocks.	Traverses tube to front.	Receives and stows tools.	Hands tools to assistant gunner.	Moves destroyer forward as directed by destroyer commander.
Checks functioning of suspension system.	Locks travel lock.			

*On older models bottom engine compartment door must be opened to check engine oil level.

PHASE B—Continued

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Helps fold tarpaulin.	Helps stow tarpaulin.	Stows tarpaulin.	Folds tarpaulin, and hands to assistant gunner.	Turns off engine. Checks for accident report, WD, AGO Form 478, WD Form 48, lubrication order, and driver's permit. Completes before operation phase of trip ticket.
Takes dismounted post. Commands: REPORT.	Takes dismounted post.	Takes dismounted post.	Takes dismounted post.	Takes dismounted post.
	Reports "No. 1 ready."	Reports "No. 2 ready ____ rounds of ammunition."	Reports "No. 3 ready."	Reports "No. 4 ready ____ tanks of fuel.

28. INSPECTION DURING OPERATION. This is a continuous process for all crew members.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Remains alert for unusual noises or conditions.	Checks following: Travel lock. Elevating mechanism. Traversing mechanism. Turret lock. Fire controls. Is alert for unusual noises.	Checks security of AA gun. Checks stowage of equipment in turret.	Listens for unusual noises.	Listens for unusual noises. Checks following: Steering brakes. Clutch. Transmission. Engine and controls. Instruments. Running gear.

29. **INSPECTION AT HALT.** The length of the halt determines how much of the following inspection will be completed and the normal priority of operation. The destroyer commander will be informed of the length of the halt and will indicate how much time is to be allotted to inspection and how much for relief of the crew members. (During the inspection, the turret is traversed as necessary to facilitate those operations requiring it.)

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: PERFORM HALT INSPECTION.				
Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.	Disconnects breakaway plugs.
Supervises halt inspection.	Checks following: Elevating mechanism. Sight adjustment. Firing controls. Gun and mount.	Releases travel lock.	Checks radio for security of mounting.	Idles engine. (Operates 4 to 5 minutes before stopping.)
On right side checks following: Final driver for overheating and oil leaks. Fender. Front towing connection. Towing cable.	Disengages turret lock. Traverses turret 90° to left checking hand and power traverse.	Checks following: AA gun operation and security. Ammunition. Stowage of equipment in turret.	Checks radio antenna. Turns on radio speaker and operates radio. Checks escape hatch. Cleans periscopes. Checks differential and transmission vents.	Checks instruments. Examines compartment for oil leaks. Dismounts and closes hatch. On left side, checks following: Final drive for overheating and oil leaks. Fender. Front towing connection.
Hand-feels sprocket, idler, bogie wheels, and support roller hubs for abnormal temperature.				Hand-feels sprocket, idler, bogie wheels, and support rollers for abnormal temperature.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Inspects volute springs and bogie suspension units for looseness or damage. Removes stones and other foreign objects lodged in suspension system or between tracks and suspension units. Examines sprocket, idler, and bogie wheel, and roller assembly and mounting nuts for tightness and presence. Checks track, track wheels, tires and idlers for damage and security. Checks track tension. Inspects hull for damage. Checks stowage of tarpaulin. Checks pioneer equipment. Checks under destroyer for leaks. Checks fuel in right tank.				Inspects volute springs and bogie suspension units for looseness and damage. Removes stones and other foreign objects lodged in suspension system or between tracks and suspension units. Examines sprocket, idler, and bogie wheel, and roller assembly and mounting nuts for tightness and presence. Checks track, track wheels, tires, and idlers for damage and security. Checks track tension. Inspects hull for damage. Checks windshield.

				Checks fuel in left tanks.
				Checks water.
Helps open engine compartment.				Opens engine compartment.
				Listens to engine operation.
				Directs assistant driver to stop engine.
			Stops engine.	
			Checks transmission oil level.	Checks for fuel and oil leaks in engine compartment.
				Checks air cleaners, breather caps, carburetor, and auxiliary generator.
				Examines engine accessories and attachments to be sure they are secure, properly aligned and that drive belts are in good condition and tension satisfactory.
				Checks engine oil level.
Helps driver close engine compartment doors.	Traverses gun to front.			Closes engine compartment doors.
				Opens hatch.
				Enters driver's compartment.
	Engages turret lock.			Checks following:
Helps check lights.				Lights.
Mounts destroyer.				Steering linkage.
			Turns off radio speaker and connects breakaway plugs.	Gear shift lever.
				Parking brake.
				Clutch free travel.
Connects breakaway plugs.	Connects breakaway plugs.	Connects breakaway plugs.		Connects breakaway plugs.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Checks radio and interphone operation.	Checks radio and interphone operation.	Checks radio and interphone operation.	Checks radio and interphone operation.	Checks radio and interphone operation.
Commands: REPORT.	Reports "No. 1 ready."	Reports "No. 2 ready ------ rounds of ammunition."	Reports "No. 3 ready."	Reports "No. 4 ready ------ tanks of fuel."

30. AFTER OPERATION MAINTENANCE. a. After operation the destroyer is immediately given whatever servicing and maintenance is needed to prepare it in every way for further sustained action. This servicing covers all the points listed in the "Before Operation Inspection" and covers them in the same order with obvious modifications. (For example, the destroyer is locked at the end of the inspection instead of being unlocked as at the beginning; the check for leaks under the destroyer is more effective after it has stood for awhile; battery switches are turned off rather than on, and only after all checks requiring use of battery power are completed; equipment is covered and stowed, rather than being uncovered and made ready for use.)

b. The destroyer will be completely cleaned, serviced, and replenished (fuel, oil, grease, ammunition, first-aid kit, water, and rations). All special precautions against fire will be observed while refueling. Crew members will perform the following additional operations not covered in the "Before Operation Inspection."

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Supervises crew members, giving assistance as needed.	Cleans all weapons with help of other crew members.	Assembles rammer staff. Helps gunner. Cleans interior of Destroyer. Checks propeller shaft for loose or missing parts.	Checks and cleans radio. Checks and cleans periscopes. Helps driver. Helps clean weapons after completing assistance to driver.	Idles engine 4 to 5 minutes to check operation before stopping. Cleans windshield. Cleans outside of destroyer, including track and suspension system.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
		Inspects and cleans electrical wiring in turret.	Checks radio noise suppression bonds, clips, straps, filters, condensers and suppressors.	Performs services indicated on lubrication order. Looks for worn or disconnected engine control linkage. Examines armor plate. Tightens all loose mountings and assembly nuts.
Checks trip ticket and turns it in to platoon leader.				Completes trip ticket and hands it to destroyer commander.

31. **PERIODIC ADDITIONAL SERVICES.** Services performed weekly in garrison. In combat and on maneuvers they are performed after each field operation. Turret is traversed as needed to perform various operations.

Destroyer Commander	Gunner	Assistant Gunner	Assistant Driver	Driver
Commands: FALL IN: PREPARE FOR INSPECTION.	Stands inspection.	Stands inspection.	Stands inspection.	Stands inspection.
Commands: PERFORM PERIODIC INSPECTION.	Performs services on gun and traversing mechanism indicated on lubrication order.	Cleans batteries and cases. Tests batteries with hydrometer.	Mounts rear of destroyer. Helps open engine compartment door.	Mounts rear of destroyer. Opens engine compartment door.

	Cleans weapons. Helps clean interior of destroyer.	Brings cells to proper water level. Operates auxiliary generator to charge batteries. Cleans interior of destroyer. Cleans tools.	Helps clean engine compartment. Helps close engine compartment door. Helps clean suspension system. Tightens all wedge nuts on right side. Tightens sprocket and hub retaining nuts. Tightens idler nuts. Helps driver perform lubrication services.	Cleans engine compartment. Cleans insects and trash from in and around radiator core air passages. Removes the oil and breather reservoirs from the air cleaners. Cleans, adds clean oil, and reassembles. Drains and flushes fuel filter. Closes engine compartment door. Cleans suspension system and tightens all wedge nuts on left side. Tightens sprocket and hub retaining nuts. Tightens idler nuts. Performs vehicular services indicated on lubrication order.
Commands: REPORT:	Reports "No. 1 ready"	Reports "No. 2 ready"	Reports "No. 3 ready"	Reports "No. 4 ready"

SECTION VI

DESTRUCTION OF MATÉRIEL

32. **GENERAL.** a. Tactical situations may arise when, owing to limitations of time or transportation, it will become impossible to evacuate all equipment. In such situations it is imperative that all matériel which cannot be evacuated be destroyed to prevent its capture by the enemy. The destruction of equipment is a command decision to be implemented only upon authority delegated by the division or higher commander. each unit should issue specific instructions covering this subject prior to combat.

b. The working principles to be followed are—

(1) 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.

(2) Destruction must be as complete as the 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 and which cannot be easily duplicated should be ruined or removed. The same essential parts must be destroyed on all like units to prevent the enemy's constructing one complete unit from several damaged ones by cannibalization.

(3) Crews are trained in the prescribed methods of destruction. Training will not involve the actual destruction of matériel.

33. **METHODS.** a. The destruction procedures outlined below are arranged in order of effectiveness. Destruction should be accomplished by method No. 1 if possible. If method No. 1 cannot be used, destruction should be accomplished by one of the other methods in the priority shown.

b. Whichever method is used, the sequence should be adhered to. Uniformity of destruction will then be obtained, whether or not the method is carried to completion.

c. Certain of the methods require special tools and materials, such as TNT and grenades, which may not be items of issue normally. The issue of such special tools and material, 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.

34. **SMALL ARMS.** Methods for destruction of small arms are prescribed in pertinent Field Manuals in the 23 series.

35. **90-MM GUN.** a. **Sights.** See paragraph 38.

b. **Method No. 1.** (1) Open drain plug on recoil mechanism, allowing recoil oil to drain.

(2) Place an *armed* (safety pin removed) antitank grenade, HE, or *armed* (safety pin removed) antitank rocket in the tube about 6 inches in front of, and with the ogive nose end toward the HE shell. (See (3) below.)

(3) Insert an unfuzed complete HE round into the cannon and close the breech.

(4) Fire the cannon, using a lanyard at least 100 feet long. All personnel should be under cover to the rear of the piece and approximately 20° off the line of fire. Danger zone is approximately 200 yards.

c. **Method No. 2.** (1) See b(1) above.

(2) Fire an HE round assembled with a point detonating fuze against a similar round jammed in the muzzle. Take cover as in b(4) above.

d. Method No. 3. (1) Insert two or three TNT blocks in the bore near the muzzle and four or six in the chamber of the cannon.

(2) Close the breech block as far as possible without damaging the safety fuze. Plug the muzzle tightly with earth to a distance of approximately 3 calibers from the muzzle.

(3) Detonate the charges simultaneously.

(4) The cardboard cases on the TNT blocks should be removed.

e. Method No. 4. This method consists of destroying one gun by firing at it at point blank range, using HE or AP ammunition. Two or more hits on a vital spot such as the breech mechanism, recoil mechanism, or tube should adequately destroy the piece. Fire from cover as danger space is 200 to 500 yards. Destroy last gun by best means available.

f. Method No. 5. Disassemble breech mechanism. Use a sledge to deform parts that have been removed.

36. MOTOR CARRIAGE M36. a. Method No. 1. (1) Remove and empty portable fire extinguishers.

(2) Place 3 pounds of TNT on floor to left of assistant driver's seat and under transmission housing.

(3) Place 3 pounds of TNT between transmission oil cooler and right fuel tanks.

(4) Insert tetryl nonelectric caps with at least 5 feet of safety fuze in charges, ignite fuzes, and take cover.

(5) If time is available, place a 2-pound TNT charge at the center of each track assembly. Detonate these charges as prescribed in (4) above.

b. Method No. 2. (1) See a(1) above.

(2) Open all hatches.

(3) Fire on vehicle with guns, antitank rockets or grenades, aiming at the engine, suspension system, and armament.

(4) Destroy last vehicle by best means available.

c. Method No. 3. (1) See a(1) above.

(2) Puncture the fuel tanks.

(3) Smash all vital elements, such as distributor, carburetor, engine blocks, air and oil cleaners, generators, control levers, instrument panel, crankcase, and transmission with an ax, pick, or sledge.

(4) Pour gasoline, oil, or distillate on entire unit and ignite.

37. **AMMUNITION** **a. General.** (1) Time will not usually permit the destruction of all ammunition in forward combat zones.

(2) When sufficient time and materials are available, ammunition may be destroyed as indicated below. At least 30 to 60 minutes may be required to destroy adequately the ammunition carried by combat units.

(3) In general, the safety precautions outlined in TM 9–1900 should be followed whenever possible.

b. Unpacked complete round ammunition. (1) Stack ammunition in small piles. (Small arms ammunition may be heaped.) Stack or pile most of the available gasoline in cans and drums around the ammunition. Place on pile all available inflammable material such as rags, scrap wood, and brush. Pour the remaining available gasoline over the pile. Sufficient inflammable material must be used to insure a very hot fire. Ignite the gasoline and take cover.

(2) Destroy 90-mm ammunition by sympathetic detonation, using TNT. Stack the ammunition in two stacks about 3 inches apart, with fuzes in each stack toward each other. Place TNT charges between the stacks. Use 1 pound of TNT per

four or five rounds of ammunition. Detonate all charges of TNT simultaneously from cover.

c. Packed complete round ammunition. (1) Stack the boxed or bundled ammunition in small piles. Cover with all available inflammable materials, such as rags, scrap wood, brush, and gasoline in drums or cans. Pour gasoline over the pile. Ignite the gasoline and take cover. (Small arms ammunition must be broken out of the boxes or cartons before burning.)

(2) (*a*) The destruction of packed complete round ammunition by sympathetic detonation with TNT is not advocated for use in forward combat zones. To insure satisfactory destruction involves putting TNT in alternate cases or bundles of ammunition, a time-consuming job.

(*b*) In rear areas of fixed installations, sympathetic detonation may be used to destroy large ammunition supplies if destruction by burning is not feasible. Stack the boxes, placing in alternate boxes in each row sufficient TNT blocks to insure the use of 1 pound of TNT per four to five rounds of 90-mm ammunition. Place the TNT blocks at the fuze end of the round. Detonate all TNT charges simultaneously. See FM 5–25 for details of demolition and procedure.

d. Miscellaneous. Grenades, antitank mines, and antitank rockets may be destroyed by the methods outlined in **b** and **c** above for complete rounds. The amount of TNT necessary to detonate these munitions is considerably less than that required for detonating artillery shells. Fuzes, boosters, detonators, and similar material should be destroyed by burning.

38. FIRE-CONTROL EQUIPMENT. a. All fire-control equipment, including optical sights and binoculars, is difficult to replace. It should be the last equipment to be destroyed, if there is any chance of personnel being able to evacuate. If

evacuation of personnel is made, all possible items of fire-control equipment should be carried. If evacuation of personnel is not possible, fire-control equipment must be thoroughly destroyed.

b. Firing tables, charts, slide rules, and similar items should be burned thoroughly.

c. All optical equipment should be smashed.

39. **RADIO EQUIPMENT.** a. **Books and papers.** Instruction books, circuit and wiring diagrams, records of all kinds of radio equipment, code books, and registered documents are destroyed by burning.

b. **Radio sets.** (1) Shear off all panel knobs, dials, etc., with an ax head. Break open set compartment by smashing in the panel face, then knock off the top, bottom, and sides. The object is to destroy the panel and expose the chassis.

(2) On top of the chassis strike all tubes and circuit elements with the ax head. On the underside of the chassis, if it can be reached, use the ax to shear or tear off wires and small circuit units. Break sockets, and cut unit and circuit wires. Smash or cut tubes, coils, crystal holders, microphones, earphones, and batteries. Break mast sections and break mast base at the insulator.

(3) When possible, pile up smashed equipment, pour on gasoline or oil, and set on fire. If other inflammable material, such as wood, is available, use it to increase fire effect. Bury smashed parts whether burned or not.

APPENDIX

DETAILED DUTIES OF DESTROYER COMMANDER IN INDIRECT LAYING

1. TO LAY FOR ELEVATION WHEN GUNNER'S QUADRANT IS USED. a. The command QUADRANT (SO MUCH) indicates that the gunner's quadrant is to be used.

b. To set an elevation on the gunner's quadrant, for example, of 361.8 mils, the destroyer commander sets the upper edge of the head of the index arm opposite the 360 mark of the graduated arc on the quadrant frame; he then turns the micrometer index head until it reaches the correct decimal reading.

c. The announced elevation having been set on the gunner's quadrant, the piece is loaded, the breechblock is closed, and the destroyer commander places the quadrant on the leveling plates, with the words "line of fire" at the bottom and the arrow pointing towards the muzzle. The destroyer commander must be sure to use the arrow which appears on the same side of the quadrant as the scale he is using. He stands opposite the side of the quadrant and hold it firmly on the leveling plates parallel to the axis of the bore. It is important that he take the same position and hold the quadrant in the same manner for each subsequent setting, so that in each case he will view the quadrant bubble from the same angle.

d. The gunner operates the elevating handwheel until the quadrant bubble is centered, making sure that the last movement is in the direction in which it is most difficult to turn the handwheel. The destroyer commander warns the gunner when the bubble is approaching the center, in order that the final centering may be performed accurately.

2. TO MEASURE MINIMUM ELEVATION. a. **Minimum elevation.** The command is MEASURE THE MINI-

MUM ELEVATION. The destroyer commander, sighting along the lowest element of the bore, causes the gunner to operate the elevating mechanism until the line of sight is just clear of the crest. He then measures the quadrant elevation and, after reading the angle on the quadrant, reports it to the platoon commander thus: "Minimum elevation, No. (so-and-so), (so much)."

b. When the platoon commander announces the minimum quadrant elevation the destroyer commander records it in a notebook and causes the gunner to chalk it in a convenient place on the turret.

3. TO INDICATE TO THE GUNNER AIMING POINT, REFERENCE POINT, OR TARGET. Whenever an aiming point, a reference point, or a target has been designated by the platoon commander, the destroyer commander will make sure that he has properly identified the point in question. He will then indicate it to the gunner. If there is any possibility of misunderstanding, the destroyer commander will cause the turret to be turned until the gunner identifies the object.

4. TO FOLLOW FIRE COMMANDS. The destroyer commander will follow the fire commands mentally. He will be prepared to give any element of the last command to any member of the crew who has failed to hear it.

5. TO INDICATE WHEN PIECE IS READY TO FIRE. When the platoon commander can see arm signals of the destroyer commander, the destroyer commander will extend his right arm vertically as a signal that the piece is ready to fire. He gives the signal as soon as the gunner calls "Ready." When arm signals cannot be seen, the destroyer commander reports orally to the platoon commander, "No. (so-and-so) ready."

6. TO GIVE COMMAND TO FIRE. When the gunner can see arm signals made by the destroyer commander, the destroyer commander will give the command to fire by dropping his right arm sharply to his side. When his arm signals cannot be seen, he orally commands: NO. (SO-AND-SO)

FIRE. The destroyer commander will *not* give the signal or command to fire until all the members of the crew are in their proper places.

7. TO REPORT ERRORS AND OTHER UNUSUAL INCIDENTS OF FIRE TO PLATOON COMMANDER. If for any reason the piece cannot be fired, the destroyer commander will promptly report that fact to the platoon commander, and the reason therefor; for example, "No. (so-and-so) out, misfire." Whenever it is discovered that the piece has been fired with an error in laying, the destroyer commander will report that fact at once; for example, "No. (so-and-so) fired with incorrect deflection." Whenever the gunner reports that the aiming stakes are out of alignment with the telescope, the destroyer commander will report that fact and request instructions. Likewise, he promptly reports other unusual incidents that affect the service of the piece.

8. TO RECORD BASIC DATA. The destroyer commander will record in a notebook data of a semipermanent nature. These include such data as minimum elevations; base deflections, including aiming points used; prearranged fires when prepared schedules are not furnished; safety limits in elevation and deflection; number of rounds fired, with the date and hour; and calibration corrections when appropriate.

9. TO KEEP THE GUN BOOK. The destroyer commander will enter in the gun book all data there required.

10. TO OBSERVE AND CHECK FUNCTIONING OF MATERIEL. The destroyer commander closely observes the functioning of all parts of the matériel during firing. Before the piece is fired, he verifies the fact that the recoil mechanism contains the proper amount of oil; thereafter he carefully observes the functioning of the recoil system. He promptly reports to the platoon commander any evidence of trouble.

11. TO ASSIGN DUTIES WHEN FIRING WITH REDUCED PERSONNEL. Whenever the personnel is reduced, the destroyer commander will make such redistribution of duties as will best facilitate the service of the piece.