

This is a scanned copy of a US Army Training Regulation, the fore runner of the current Field Manual. The original format was smaller, so I grouped the pages together. The original has 19 pages.

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## TR 435-227

TRAINING REGULATIONS  
No. 435-227

WAR DEPARTMENT,  
Washington, *March 18, 1933.*

### COAST ARTILLERY CORPS

#### SERVICE OF THE PIECE, 14-INCH GUN, M1920 MII, ON RAILWAY MOUNT, M1920

Prepared under direction of the  
Chief of Coast Artillery

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#### Section I

### INTRODUCTION

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**1. Introduction.-***a.* The service of the piece herein prescribed is based upon the only installation in service at the present time. The gun is emplaced on a permanent base with locally arranged methods of ammunition handling. For this reason the details of the service of the piece as given will be considered as a guide only. Minor changes to meet local conditions and materiel will be made by the battery commander.

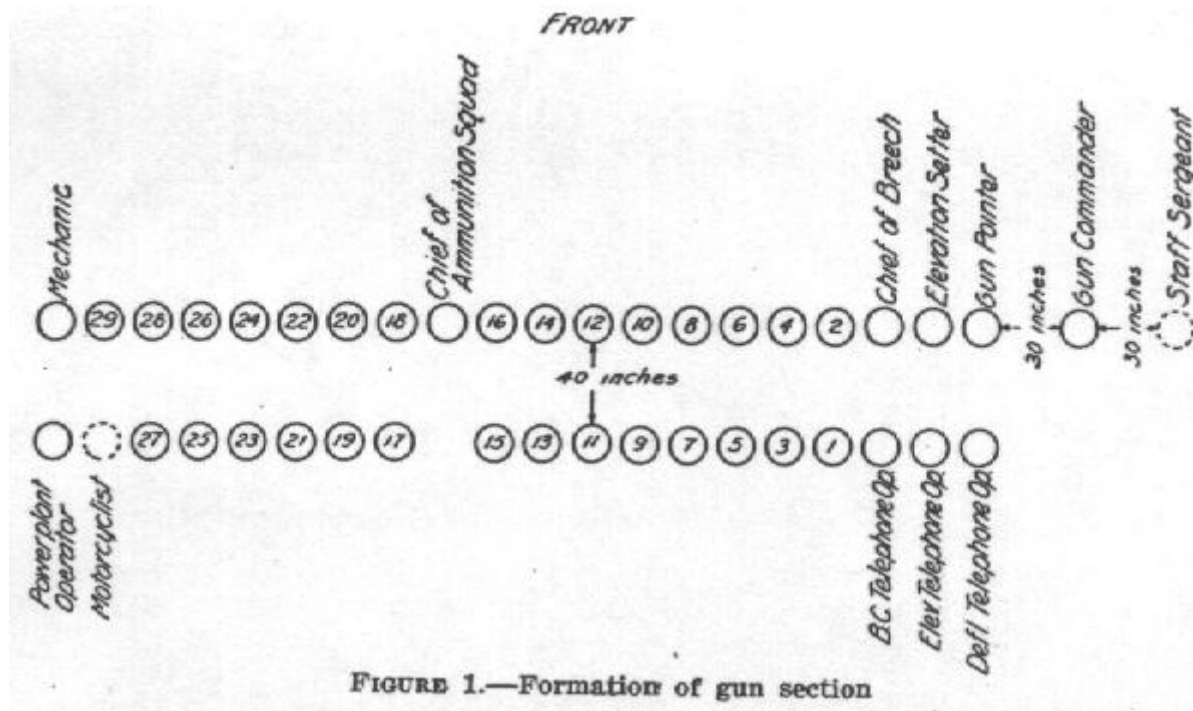
*b.* These regulations deal with the service of the piece after it has been emplaced. Detailed instructions regarding the care and maintenance of the materiel and covering the emplacement and withdrawal from the position of the weapon will be found in TR 131-14B and 131-14E. Pending the publication of further regulations on this subject, battery commanders will assign the personnel to duties covering the emplacement and withdrawal from position, and the men will be thoroughly drilled in their respective tasks.

#### Section II

### ORGANIZATION OF THE GUN SECTION

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**2. Composition.-** Each emplacement of one gun is manned by a gun section (39 enlisted men) consisting of a gun squad, an ammunition squad, a mechanic, and a power plant operator. In addition, each emplacement has a staff sergeant (electrician) responsible to the battery executive for all electrical apparatus, and one motorcyclist, orderly, and messenger for the officer in charge of the emplacement.



*a. Gun Squad.*—The gun squad (23 enlisted men) consists of the gun commander, gun pointer, elevation setter, chief of breech, three telephone operators, and 16 cannoneers numbered from 1 to 16, inclusive.

*b. Ammunition squad.*—The ammunition squad (14 enlisted men) consists of a chief of squad, and 13 cannoneers numbered 17 to 29, inclusive. This squad is divided by its chief into details for the service of powder and projectiles as discussed later.

**3. Formation.**—Each section assembles in two ranks with 4 inches between files and 40 inches between ranks. The Post of the gun commander is in the front rank, one pace to the right of his Section. Mechanics take post in the front rank on the left of their respective sections. When present, staff sergeants take post one pace to the right of the gun commander; motorcyclists and power plant operators take post on the left of the rear rank. (Fig. 1.)

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**4. Battery executive.**—*a.* The battery executive commands the gun sections and is in direct charge of one emplacement, when necessary.

*b.* He is responsible to the battery commander for the training and efficiency of the gun sections, for the condition of the materiel and ammunition under his charge, and for the police of the emplacements. He is responsible for the observance of all safety precautions at his emplacement. When the guns are

moved into position, he is responsible for their emplacement, and for their preparation for railroad travel when they are taken out of position.

c. He inspects the materiel under his charge and personally verifies the adjustment of all pointing devices as frequently as is necessary to insure accuracy. He tests all circuits and firing devices before each drill or practice, paying special attention to the safety features.

d. He receives the reports of the chief of section and reports to the battery commander, ""Sir, No. (Nos.)\_\_\_\_\_ in order,"" or reports any defects he is unable to remedy without delay.

e. Should circumstances arise after the emplacement has been reported ready which in his opinion would make it unsafe to fire, he causes the firing circuit to be broken or the lanyard to be dropped, when firing by lanyard, and reports his action to the battery commander.

f. At the conclusion of the drill or practice, he commands: **REPLACE EQUIPMENT**, inspects the, emplacements, and reports to the battery commander.

**5. Assistant battery executives.-** The assistant battery executives, when available, are each in direct charge of one gun emplacement. They will perform the duties of the battery executive in so far as these duties pertain to the emplacement to which they are assigned. If necessary, the battery railway officer will act as assistant battery executive.

**6. Gun commander.** The gun commander (noncommissioned officer) is in command of the gun section and is also chief of the gun squad. He is responsible to the battery executive for training and efficiency of the personnel of his section, for the condition of the materiel and ammunition under his charge, and for the police of the emplacement to which assigned.

b. He supervises the service of the piece and the service of ammunition at his emplacement, and personally directs the work of care and preservation of all materiel.

c. He gives the command **Details, posts**, when the section arrives at the emplacement, and supervises the procuring of equipment. (Fig. 2.) After all details have reached their posts, he commands: **EXAMINE GUN**. He then makes an inspection of the gun, carriage, and other materiel, paying special attention to the recoil cylinders, firing mechanism, safety devices, recuperators, air compressor, the oiling of the various bearings, and the power plant. He receives the reports of the chief of the ammunition squad and the chiefs of the various details of the gun squad, and reports to the battery executive, ""Sir, No. \_\_\_\_\_ in order,"" or reports any defects he is unable to remedy without delay.

d. When necessary to verify the section, he commands: **CALL OFF**. The cannoneers call off their numbers, beginning with No.1 and followed by the unnumbered members of the section in the most desirable order.

e. At the command **Load**, when given by the battery commander through the battery executive, the gun commander repeats the command and supervises the loading. The piece is not fired, however, until the battery commander commands: **COMMENCE FIRING**, and the proper firing signal has been received. Should circumstances arise after the piece has been reported ready that in his opinion would make it unsafe to fire, he commands or signals: **STAND FAST**, and breaks the firing circuit or causes the lanyard to be dropped, if firing by lanyard, and reports his action to the battery executive.

f. At the command **Commence firing**, if the piece is unloaded, the gun commander commands: **LOAD**, and supervises the work of his section. He also commands: **LOAD**, before each shot of a series. After the piece is loaded and laid, he sees that all personnel is clear and that the breech platform is raised, closes the firing circuit, if used, and calls or signals to the battery executive, ""Sir, No. \_\_\_\_\_ ready."" As soon as the gun has been fired he opens the firing circuit. When firing by Case III, he is responsible that the piece is fired upon receipt of the proper signal, safety precautions permitting. He listens for the explosion of the primer, which may be audible if the powder charge does not explode.

g. He gives the command **Cease firing** when the number of shots specified has been fired. When the number of shots has not been specified, the gun commander repeats the command Cease firing when it is given by the battery executive. When dummy ammunition is being used, he commands: **UNLOAD**, and sees that the piece is unloaded.

h. In case of a misfire the gun commander commands: **STAND FAST**, and the precautions prescribed in Section V will be taken.

i. At the command **Replace equipment**, the gun commander supervises the replacing of equipment, sees that all material is properly secured and the emplacement policed, and then, unless otherwise directed, forms his section.

j. When there is no battery executive or assistant, the gun commander, in addition to his other duties,

performs those prescribed for the battery executive.

**7. Chief of ammunition squad.-** *a.* The chief of the ammunition squad (noncommissioned officer) is responsible to the gun commander for the efficiency of the personnel under his charge, for the condition and serviceability of the ammunition and ammunition-handing apparatus such as trolleys, cranes, blocks and chains, and powder serving trays, for the observance of all safety precautions in the care and service of ammunition, for the correct recording of projectile and powder data, and for the police of the magazine and cars under his charge.

*b.* Before the beginning of an action he is responsible to the gun commander for the placement of powder and projectiles within handling distance of the cranes, and that the service of ammunition is uninterrupted during the continuance of the same.

*c.* At the command **Details, posts**, he opens the ammunition cars, and magazines, if necessary, and posts the members of his squad.

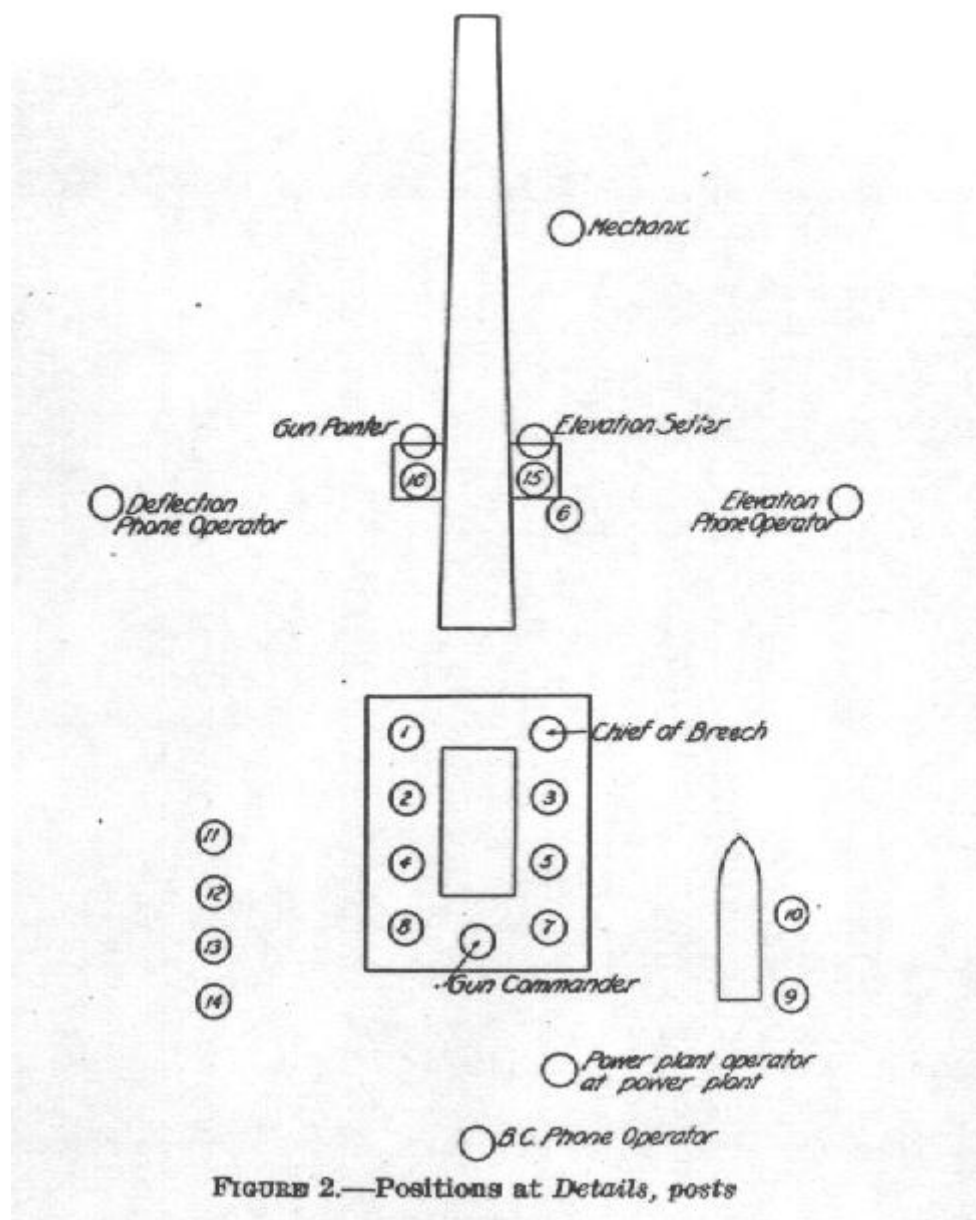
*d.* At the command **Examine gun** he inspects the material under his charge, gives the necessary instructions for preparing ammunition and equipment for service or drill, and reports to the gun commander, "ammunition service in order," or reports any defects he is unable to remedy without delay.

*e.* At the command **Load** he directs and supervises the service of ammunition.

*f.* At the command **Fire**, no duties.

*g.* At the command **Stand fast**, due to a misfire, he stands ready to have a new charge served with the least practicable delay.

*h.* At the command **Cease firing**, when dummy ammunition is used, he causes the dummy projectile and dummy powder charge to be put in their proper places.



i. At the command **Replace equipment** he supervises the replacing of equipment, sees that all ammunition and materiel are properly secured, forms his squad, and reports to the gun commander.

**8. Gun pointer.-** a. The gun pointer (noncommissioned officer or private) is charged with the duty of laying the piece in direction. He is responsible to the gun commander for the proper operation, care, and adjustment of the sighting apparatus, azimuth index, the traversing mechanism, and the electrical firing mechanism and circuit.

b. At the command **Details, posts**, he procures the sight, places it in its seat, and takes post on the sighting platform. When using Case III method of pointing, he takes post at the azimuth index box, facing the gun.

c. At the command **Examine gun** he examines and adjusts the sight and verifies the adjustment of the azimuth index. He examines and tests the traversing mechanism, both hand and power, and the electrical firing mechanism and circuit, if used. He reports to the gun commander, "Traversing in order," or reports any defects he is unable to remedy without delay.

d. At the command **Load** he sets the last deflection recorded on display board on the sight and traverses the piece so as not to interfere with the loading and so that he will be on the target by the time the gun has been given the proper elevation. He fires the piece or gives the command **Fire** as soon as the piece is pointed after the gun commander has signaled or called "Ready." When so directed, he endeavors to locate the position of the splash of his shot and corrects his deflection if necessary. When firing by Case III, he sets the azimuth index to the last azimuth setting posted on the display board, and calls "Set" to the azimuth recorder.

e. At the command **Cease firing** he keeps the piece pointed in direction, unless otherwise directed.

f. At the command **Stand fast**, if due to a misfire, he keeps the piece pointed in direction, unless otherwise directed. If the command is given before the command **Ready** or **Fire** he causes all movement of the gun in direction to be stopped immediately.

g. At the command **Relay** in Case III pointing he causes the piece to be laid on the new data, and proceeds as before.

h. When the service of ammunition requires the gun to be loaded at a certain position, as soon as the piece is fired, the gun pointer causes it to be traversed as rapidly as practicable to the loading position.

**9. Elevation setter.-** a. The elevation setter (noncommissioned officer or private) is charged with the duty of laying the piece in elevation. He is responsible to the gun commander for the proper operation, care, and adjustment of the quadrant and elevating mechanism.

b. At the command **Details, posts**, he takes post at the quadrant, facing it.

c. At the command **Examine gun** the elevation setter, assisted by No.6, examines and adjusts the quadrant; examines and adjusts the elevating mechanism, both for hand power and electrical power; checks the clearance of the trunnions by means of the clearance gauge, and reports to the gun commander, "Elevation in order," or reports any defects he is unable to remedy without delay.

d. At the command **Load** he causes the gun to be brought to the loading angle if not already there, sets off the last elevation posted on the display board, and at the signal or command **Elevate**, given by the chief of breech, causes the piece to be elevated until the bubbles of the quadrant cross levels are centered, sets the elevation brake and calls "Set" to No.16, the elevation recorder. As soon as the piece is fired, he causes the gun to be brought to the loading angle as rapidly as practicable.

e. At the command **Stand fast**, if due to a misfire, he keeps the piece laid in elevation unless otherwise directed. If the command is given before the command **Ready** or **Fire**, he causes all movements to cease immediately.

f. At the command **Relay** he lays the fire in elevation according to the new data, and calls "Set," as before. If the command **Withdraw powder charge** is given, he brings the piece to the loading position rapidly, and proceeds as at the command **Load**.

g. At the command **Cease firing** he continues to keep the piece laid in elevation unless otherwise directed. When the dummy ammunition is being used, he causes the piece to be brought to the loading position, so that the dummy powder charge and projectile can be removed.

**10. Telephone operators.-** a. The BC telephone operator is responsible for the reception and transmittal of all orders, instructions, or information to and from the battery commander and the officer in charge of the emplacement, and the keeping of such records as may be directed. The deflection telephone operator is responsible for the reception, recording, and display of all deflection (or azimuth) data received from the plotting detail. Similarly, the elevation telephone operator is responsible for the

elevation data received.

b. (1) At the command **Details, posts**, all telephone operators procure telephones and head sets, record books and pencils, and take post at their respective telephone positions. In addition, the data telephone operators procure chalk and erasers for use on the display boards.

(2) At the command **Examine gun**, the telephone operators connect up their telephones (if not already installed), put on their head sets, and establish communication with the battery CP or the plotting detail as the case may be. The data operators clean and prepare their display boards for drill or action. Upon completion operator reports to the gun commander, "BC (deflection) (elevation) telephone in order," or reports any defects he is unable to remedy without delay.

(3) Until otherwise directed, the three telephone operators keep their head sets on and continue the duties given in a above.

**11. Chief of breech.-** a. The chief of breech (noncommissioned officer or private) is responsible to the gun commander for the condition and serviceability of the breech mechanism, breechblock, breech recess, firing mechanism, chamber, and bore. He is specially charged with the observance of all safety precautions in so far as they pertain to the breech detail, and is responsible that the powder charge is so loaded that the igniter charge is on the rear end of the last section.

b. At the command **Details, posts**, he assists No.1 in procuring the necessary cleaning material and equipment, and takes post on the upper working platform to the right rear of the breech and facing it.

c. At the command **Examine gun**, he assists in removing the breech cover, examines the breech mechanism, breechblock, breech recess, chamber, and bore, and gives the necessary directions for cleaning and preparing them for service. Upon completion, he reports to the gun commander, "Breech in order," or reports any defects he is unable to remedy without delay.

d. At the command **Load**, if the breech is closed, he assists in opening the breech and supervises the loading. He calls "Bore clear," when ready to have the spanning tray inserted in the breech. He gives the command **Home ram** for seating the projectile and checks the proper loading of the powder charge. As soon as the piece is loaded, he opens the breech closing air valve. In case of no air, he assists No.1 in closing the breech by hand. After the primer has been inserted, the firing mechanism raised, and the breechblock fully rotated and locked, he calls or signals, "Elevate," to the elevation setter, and takes his designated cover post for firing. After the piece is fired he assists No.1 in opening the breech, wipes off the mushroom head with a wet cloth or sponge, and as soon as the chamber and bore are clear of burning fragments, shuts off the gas ejection air valve. If there is no air, he assists No.1 in wiping and sponging the chamber and breech recess.

e. At the command **Relay**, no duties, unless the command **Withdraw powder charge** is given, when he calls or signals "Depress" to the elevation setter, and supervises the withdrawal and disposal of the powder charge and the insertion of a new charge, if so directed.

f. At the command **Cease firing** he assists in opening the breech and supervises the unloading of the dummy ammunition, if used

**12. Breech detail (No.1).-** a. At the command **Details, posts** No.1 procures the firing mechanism (if detached) and the lanyard (if required), a primer pouch, primers, drill, reamer, and a wiper or cotton waste, and takes post on the upper working platform to the left rear of the breech and facing it.

b. At the command **Examine gun** No. 1 assisted by Nos. 2 and 3 removes the breech cover and places it as directed; cleans and oils the breechblock, breech mechanism, and breech recess; examines and cleans the firing mechanism, vent, and primer seat; attaches the firing mechanism in position (if detached); and places the coiled lanyard on the left side of the platform within reach. When necessary, 3 he assists in sponging the chamber and bore.

c. At the command **Load** No.1 stands clear and inserts a primer and then when the breech is closed and locked raises the sliding wedge and steps off the platform to the left and rear, tripping the breech platform as he does so. If the firing is by lanyard, No.1 fires the piece by a quick, strong pull (not a jerk) at the command **Fire**. As soon as the piece has been brought to the loading position, No.1 pushes down the swinging platform, pulls the breech rotating lever, and assists the chief of breech in lowering the breechblock. He assists Nos. 2 and 3 in seating the spanner tray in the breech recess.

d. At the command **Stand fast**, if due to a misfire, No.1 stands ready to replace the primer, when directed. If given before the command **Ready** or **Fire** No.1 slacks the lanyard, if used, and stands fast.

e. At the command **Relay** No.1 slacks the lanyard, if used If the command **Withdraw powder charge** is given, he unhooks the lanyard and as soon as the piece has reached the loading position withdraws the

primer, and proceeds as before in opening the breech and assisting in the breech operation.

f. At the command **Cease firing**, when dummy ammunition is being used, No.1 unhooks the lanyard, if used, withdraws the primer, and assists in withdrawing the dummy powder charge and projectile.

**13. Loading tray detail (Nos. 2, 3, 4, and 5).** -a. Nos. 2, 3,4, and 5 receive the projectiles and powder charges from the hoists and by means of the loading tray and spanner tray deliver the ammunition into the gun. No.2 is chief of the detail.

b. At the command **Details, posts** No.2 procures a wiper or cotton waste and assisted by Nos. 11 to 14 brings up a vessel containing water or sponging liquid and places it at the designated position. No.3 procures the hand and power extractors and places them as designated. Nos. 4 and 5 procure the chamber and bore sponges and place them in a convenient position. They then take post, Nos. 2 and 4. on the left and Nos. 3 and 5 on the right of the loading tray, all facing the tray.

c. At the command **Examine gun** all four assist in removing the breech cover' and placing it as designated. No.2 examines, cleans, and oils the bearings of the spanning tray; No.3 examines, cleans, and oils the projectile stop. Both men then assist No.1 on the breech mechanism. No.4 removes the stop pin on the loading tray and assisted by No.5 insures that the spanning tray will properly enter the breech recess. All four men assist in sponging the bore and chamber when directed. Upon completion of examination, No.2 reports to the gun commander, "Loading and spanning tray in order," or reports any defects he is unable to remedy without delay.

d. At the command **Load** Nos. 4 and 5 assist in guiding the projectile and the powder trays to the proper positions on the loading tray. They release the hoist tongs and signal the hoist operators when to raise and clear the tongs and tray from the loading tray. When the chief of breech calls "Bore clear " No.4 removes the stop pin and, assisted by No.5, slides the spanning tray forward to Nos. 2 and 3, who guide the tray into the breech recess. At the command **Home ram** No.3 releases the projectile stop and all four assist in seating the projectile in the gun. The powder sections are then pushed forward, No.3 being responsible that the last section carries the igniter on the rear end. As soon as the powder charge has cleared the spanner tray, Nos. 4 and 5 slide the tray back until No.4 can secure it with the stop pin.

e. At the command **Relay**, all four men stand ready to assist in withdrawing the powder charge and serving a new one, if so directed.

f. At the command **Cease firing**, no duties, but they remain at their posts awaiting instructions. If dummy ammunition is being used, at the command **Unload** they assist in withdrawing the dummy powder charge and projectile to their proper positions on the loading tray, or deliver same to the hoists if so directed. No.3 fixes the tackle to the projectile for withdrawal from the gun.

**14. Elevating detail (No.6).** -a. At the command **Details, posts**, No.6 procures oil and cleaning material and takes post at the elevating control mechanism on the right of the gun, facing the piece.

b. At the command **Examine gun** he assists the elevation setter in examining, cleaning, and oiling the elevating mechanism, in testing the clearance of the trunnions, and in testing the hand power and electrical control.

c. At the command **Load**, under the supervision of the elevation setter, No.6 operates the elevating control mechanism as directed. As soon as each shot is fired he brings the gun back to the loading position.

d. At the command **Cease firing** No.6 maneuvers the gun as directed by the elevation setter and remains at his post until otherwise directed.

**15. Hoist detail (Nos. 7 and 8).** -a. No.7 is the operator of the projectile hoist and No.8 operates the powder hoist. No.7 is chief of detail.

b. At the command **Details, posts**, Nos. 7 and 8 take post at the hoists according to the side from which the projectiles and powder are to be served. They procure the operating levers for the hoist controls and insert them in place.

c. At the command **Examine gun** Nos. 7 and 8 examine, clean, and oil the hoists, cables, and controls, and test the hoists with power to insure that the stops work perfectly. Upon completion No.7 reports to the gun commander, "Hoists in order," or reports any defects he is unable to remedy without delay. If firing is to take place, No.7 raises a projectile to the loading tray and returns the cable and tongs in readiness for another projectile; No.8 lowers his cable and tongs with the powder tray to receive the powder charge.

d. At the command **Load** No.8 raises the powder charge rapidly swings it over and lowers it onto the loading tray. On signal from No.4 (or No.5) he raises the tray, swings it out, and lowers it for another charge. The next charge will not be raised above the level of the loading platform until the chief of breech

calls "Bore clear." As soon as the piece is fired, No.7 raises the next projectile rapidly and places it on the loading tray. Upon signal from No.5 (or No.4) he raises and swings the tongs out and down for another projectile.

*e.* At the command **Relay**, if the powder charge is to be withdrawn, No.7 maneuvers his hoist to clear the next projectile from the loading tray, while No.8 places the powder tray in position to receive the old charge. They then proceed as at Load.

*f.* At the command **Cease firing** they remain at their posts until otherwise directed. If dummy ammunition is being used, No.8 removes the dummy powder charge from the loading tray when it has been placed on the powder tray; No.7 maneuvers the hoist to extract the projectile by means of blocks and tackle; and then lowers the projectile to the projectile detail or places it as directed.

**16. Projectile serving detail (Nos. 9 and 10) .-a.** Nos. 9 and 10 are responsible for the proper securing of the tongs to the projectiles for raising. No. 9 is chief of detail.

*b.* At the command **Details, posts** Nos. 9 and 10 procure cleaning material and take post at the position from which projectiles are to be served. The projectile may be served from an ammunition car or from piles placed on skids about the gun emplacement.

*c.* At the command **Examine gun** Nos. 9 and 10 examine the projectiles to be used, clean them off, see that they are properly marked for the tongs, and fasten the tongs to the first projectile. Upon completion, No.9 reports to the gun commander, "Projectile service in order," or reports any defects he is unable to remedy without delay.

*d.* At the command **Load** Nos. 9 and 10 fasten the tongs to projectiles as the tongs are lowered. No.9 will signal the hoist operator when ready to hoist, and will have the projectile stopped and lowered if not properly secured. They will have a projectile ready for raising as soon as the piece is fired each time.

*e.* At the command **Cease firing** they remain at their posts until directed otherwise. If dummy ammunition is being used, they assist in withdrawing the projectile from the gun, receive it from the hoist, and place it in the designated position.

**17. Powder serving detail (Nos. 11, 12, 13, and 14).-a.** Nos. 11, 12, 13, and 14 receive the powder charges from the ammunition squad and load them on the powder tray. No.11 is chief of detail.

*b.* At the command **Details, posts** Nos. 11 to 14 take posts at the powder tray, facing the piece. They assist No.2 in procuring the sponging liquid and assist in procuring such other equipment as may be directed.

*c.* At the command **Examine gun** Nos. 11 and 12 examine and clean the powder tray. Nos. 13 and 14 remove the muzzle cover and place it as designated. If dummy ammunition is to be used, they place the charge on the powder tray.

*d.* At the command **Load**, a powder charge being ready on the tray, Nos. 11 to 14, as the powder tray is hoisted, guide it by the two ropes attached to each end. As soon as the tray is emptied and lowered and the gun has been fired they receive the new charge from the ammunition squad, load it into the tray, and No. 11 signals Raise to the hoist operator.

*e.* At the command **Relay**, if the powder charge is to be withdrawn, they stand ready to receive the old charge and deliver it to the ammunition squad, and then proceed as at **Load**.

*f.* At the command **Cease firing** they remain at their posts, unless otherwise directed. If dummy ammunition is being used, they stand ready to receive it from the powder hoist.

**18. Recorders (Nos. 15 and 16) .-a.** During drill and target practice Nos. 15 and 16 are utilized as the elevation and deflection recorders, respectively. Under service conditions these numbers would be available for duty whenever required. They are charged with the duty of recording all deflections (or azimuths) and elevations posted on the display boards and also with checking and recording the deflections (or azimuths) and elevations set on the piece. They are specially required to record the actual settings of the piece when fired.

*b.* At the command **Details, posts** they procure record books and pencils and take post, No.15 with the elevation setter, No.16 with the gun pointer.

*c.* At the command **Examine gun** they assist the elevation setter and gun pointer as directed.

*d.* At the command **Load** No.15 records each elevation posted on the display board. As soon as the elevation setter calls "Set," he checks and records the elevation setting on the gun and calls or signals "Elevation set." He identifies by a check mark each setting upon which the gun is actually fired. No.16 performs the same duties with regard to the deflection (or azimuth) data and setting, except that he receives the set deflection from the gun pointer.



e. At the command **Cease firing**, they continue to record and check the data unless otherwise directed.

**19. Ammunition squad (Nos. 17 to 19, inclusive).** - The division of the members of the squad into projectile and powder details will depend upon local conditions encountered. For the purpose of these regulations an arbitrary division is made.

a. *Projectile detail (Nos. 17 to 22, inclusive).* - These men obtain from the magazine, or ammunition car, and deliver to Nos. 9 and 10 projectiles as directed. No. 17 is chief of detail. Methods of delivery will depend upon available equipment. When not engaged in the delivery of projectiles, they work under the supervision of the chief of ammunition squad in cleaning, painting, and marking projectiles and the policing of the projectile rooms, or cars.

b. *Powder detail (Nos. 23 to 29, inclusive).* - No. 23 is chief of detail. These men obtain and deliver to the powder serving detail loaded trays of powder charges as directed. They remove the charges from the containers, check their weights and all pertinent data, and place the charges on powder trays, arranging them in proper order if sectionalized. When not delivering powder, they police the magazines, or cars, repair the powder trays, prepare empty containers for disposal, and perform such other work as directed.

**20. Mechanic.** - a. The mechanic is custodian of all tools, spare parts, and supplies pertaining to the emplacement. He issues such equipment, tools, oils, paints, and cleaning materials to the members of the gun section as may be necessary for the service and care of the gun and accessories. He is responsible to the gun commander for the condition and serviceability of the store car, or room, and all supplies contained therein. He keeps a continuous record of all equipment on hand and of all supplies received or issued. Assisted by other members of the section, he makes such minor repairs as can be made with the means at hand.

b. During the drill or action the mechanic is in charge of the electric motors, hydraulic speed gears, air compressor, and all mechanisms. During the examination of the gun, he supervises the starting of the speed gears, starts the air compressor, and cleans and oils where necessary. He immediately reports to the gun commander any defects he is unable to remedy without delay. He keeps constant watch over the air pressure to see that it is maintained at the proper amount, and observes closely the action of the gun and mount during firing. He gives the command **Cease firing** at anytime when in his opinion firing would be unsafe due to improper functioning of the mount. At the completion of drill or practice he sees that the air compressor is turned off and that all speed gear controls are turned to the "neutral" position.

**21. Power plant operator.** - a. The power plant operator is responsible, under the supervision of the staff sergeant (electrician), for the proper operation and care of the power plant. He is responsible for the care and storage of the fuel and lubricating oils for the plant, and keeps all entries in the "Engine Book" up to date.

b. In preparation for drill or action he verifies the oil, water, and gasoline, then primes and starts the engine. As soon as it is running properly he throws the power on the mount cables and calls or signals "Power on," having first made sure that the various details are ready for the power. During the drill or action he watches the engine to see that it does not overheat, and so regulates the running as to keep the switchboard meters constantly at the proper settings; he makes certain that the supply of water, oil, and gas is kept ample for the continuous running of the plant. He stops the engine at the command or signal **Power off** from the gun commander. Before leaving the plant he examines it carefully, shuts off the gas feed, fills the oil, water, and gas tanks, if necessary, and properly secures and locks the doors of the power unit after replacing all tools and other materials.

## Section IV

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**22. Operation by hand power.** - To continue the operation of the piece in case of failure of electrical power the following additional cannoneers will be required. This personnel should be designated on the manning tables and taken from the battery maintenance section and the antiaircraft machine-gun detail. Frequent short periods of operation without electrical power should be given during training.

a. No. 30 (traversing detail), to assist the gun pointer in traversing the gun.

b. No. 31 (elevating detail), to assist No. 6 of the normal gun squad.

c. Nos. 32 to 35, inclusive (projectile hoist detail), to operate in two reliefs in raising the projectile by

hand power, under the direction of No.7 of the normal gun squad.

d. Nos. 36 and 37 (power hoist detail) to operate in raising the powder charges under the direction of No.8 of the normal gun squad.

**23. Service of ammunition.-** During the training period a complete plan will be worked out for the supply of ammunition to the gun. Such a plan will be based on the greatest practicable reduction in the number of men required consistent with the least danger in having powder charges cached in segregated lots about the emplacement. Projectiles, in sufficient quantity for any expected action, will be placed about the emplacement so as to be readily accessible to the projectile serving details.

**24. Withdrawal of dummy ammunition.-** Due to the fact that the gun is at an elevation of -7 degree when in loading position, the present extractors for the projectile have been found inadequate to draw the projectile up to the 7 degree incline and lift it over the edges of the sliding tray and loading tray. This difficulty is overcome by utilizing a block and tackle in the following manner: At the command **Unload** or **Cease firing** No.1, assisted by the chief of breech, opens the breech. The spanning tray is run into the breech by Nos. 2, 3, 4, and 5 who then withdraw the sections of the powder charge, using the hand extractor furnished. These sections are placed upon the powder tray and turned over to No.8, who causes the powder tray to be raised from the loading tray and lowered to the powder serving detail. In the meantime No.7 assisted by No.2 and 3 arranges the block and tackle as shown in Figure 3. The projectile is unseated from the forcing cone and withdrawn into the powder chamber by Nos. 2, 3, 4, and 5, using the hand extractor provided. It is then withdrawn by power to the loading tray by No. 7 assisted by Nos. 2 and 3 who guide it over the edges of the spanning and loading tray. In utilizing the block and tackle to withdraw the dummy projectile, care must be taken to see that no injury is done to the member to which the upper hook of the block and tackle is made fast.

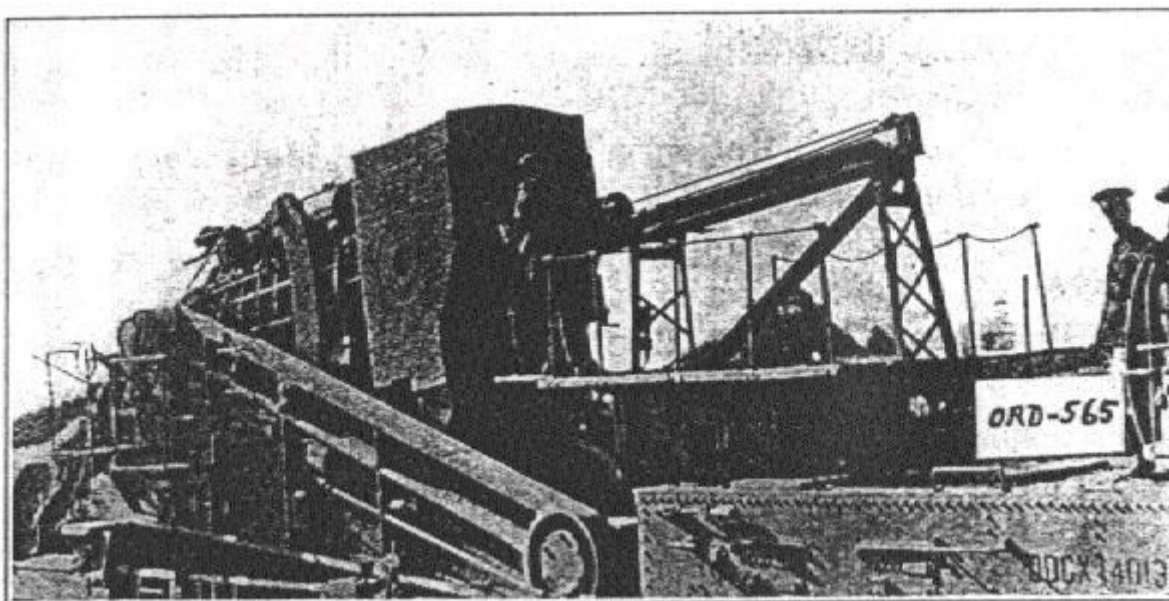


FIGURE 3

### ADDITIONAL INFORMATION ON THE SERVICE OF THE PIECE

Paragraph	
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Signals-----	26
Safety precautions-----	27

**25. General instructions.- a.** The service of the piece should be conducted with dispatch and precision, and with as few orders as possible. Except for the necessary orders, reports, and instructions, no talking should be permitted. Cannoneers change positions as rapidly as practicable.

b. Loading with dummy ammunition and pointing the piece as for service is the normal practice at drill. Drill primers or fired service primers should be used.

c. Commands should be given in the prescribed form. Signals should be substituted for commands whenever practicable.

**26. Signals.- a.** The commands or signals Elevate, Depress, Right, or Left, given in pointing, refer to

the direction of motion of the muzzle.

*b.* Signals with whistles or bugles are authorized. It is desired to limit verbal commands to a minimum. During continuous fire none should be necessary except in case of accident or unforeseen occurrences.

*c.* The following visual signals are authorized in the service of the piece:

- (1) **Elevate.- Raise** either hand to the height of the head, fingers pointing upward.
- (2) **Depress.- Raise** either hand to the height of the head, fingers pointing downward.
- (3) **Right or left.- Motion** with either hand, fingers pointing in the desired direction.
- (4) **Halt.- Raise** and fully extend either arm vertically, hand and fingers open in prolongation of the arm.
- (5) **Stand fast.- Raise** and fully extend both arms horizontally straight to the front, hands and fingers open in prolongation of the arm, backs of hands up.
- (6) **Take cover.- Raise** and fully extend both arms horizontally in prolongation of the line of shoulders, hands open, fingers extended and joined, backs of hands up.
- (7) **Ready.- Raise** and fully extend both arms laterally above the shoulders until they make an angle of 45 degrees with the horizontal, hands open, fingers extended and joined, backs of hands to the rear.
- (8) **Power on.- Describe** circles in front of body with the right arm.
- (9) **Power off.- Cross** arms in front of body at waist and move sharply to the sides.

**27. Safety precautions.-** *a.* Safety precautions to be observed in time of peace are prescribed in TR 140-5. They indicate as well the principles to be followed under war-time conditions but should be interpreted by the battery executive according to the circumstances existing at the time of any particular emergency.

*b.* The following additional precautions are prescribed for the 14-inch gun on railway mount:

- (1) The powder chamber will be thoroughly blown out by air after each shot, and the chief of breech will not call "Bore clear" until he can see clearly through the tube.
- (2) The magazine and cars all powder charges will be kept in their containers except the charge which is to be served to the piece for the next succeeding round. The powder charge for any given round will not be raised above the level of the loading platform until the preceding round has been fired and the chief of breech has called, "Bore clear."

[A. G. 062.12 (8-25-32).]

By ORDER OF THE SECRETARY OF WAR:

DOUGLAS MACARTHUR,

*General,*

*Chief of Staff.*

OFFICIAL:

JAMES F. MCKINLEY,

*Brigadier General,*

*Acting The Adjutant General.*

U.S. GOVERNMENT PRINTING OFFICE: 1933

For sale by the Superintendent of Documents, Washington, D. C. . . . . Price 5 cents

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