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ARTILLERY AND MISSILE SCHOOL
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INSTRUCTIONAL NOTES

COMMUNICATION SYSTEMS OF THE FIELD ARTILLERY GROUP
AND CORPS ARTILLERY HEADQUARTERS

Section I. GENERAL

1. REFERENCE

FM 6-20, para 8, 11, 58, and 292-296; TOE 6-401C; and TOE 6-501C.

2. OBJECTIVE

To teach the communication requirements and the radio and wire systems employed by the field artillery group and corps artillery headquarters.

3. INTRODUCTION

The field artillery battalions organic to a division are only the minimum considered necessary for the support of a division. Additional fire support is provided by separate battalions of various caliber assigned or attached to the corps. For tactical and limited administrative supervision, most of these battalions are attached to various group headquarters, which in turn are controlled by the corps artillery headquarters.

a. Corps Artillery. The only units organic to corps artillery are the headquarters and headquarters battery and the field artillery observation battalion. The artillery units which corps artillery controls are all assigned or attached, and the type, caliber, and number will depend on the tactical situation and availability of these units.

b. Mission of Corps Artillery Headquarters. The mission of corps artillery headquarters is to provide the command facilities for the exercise of fire direction, command, control, and supervision of assigned and attached units by the corps artillery commander.

c. Field Artillery Group. A field artillery group has only one organic unit, a headquarters and headquarters battery. The field artillery group headquarters is capable of controlling six attached field artillery battalions.

d. Mission of a Field Artillery Group Headquarters. The mission of a field artillery group headquarters is to provide facilities for command, control, limited fire direction, and limited administrative supervision of attached field artillery battalions.

Section II. CORPS ARTILLERY COMMUNICATION

4. COMMUNICATION REQUIREMENTS OF CORPS ARTILLERY

Corps artillery must maintain communication with--

- a. Each division artillery.
- b. Each artillery group.
- c. Each field artillery battalion and separate battery attached or assigned to corps artillery.
- d. Higher headquarters.
- e. Supporting high-performance aircraft.
- f. Staff officers and sections within corps artillery headquarters and headquarters battery.
- g. Corps fire support coordination center (FSCC), as directed by the commander.
- h. Attached antiaircraft units.

5. COMMUNICATION PERSONNEL OF THE CORPS ARTILLERY HEADQUARTERS AND HEADQUARTERS BATTERY

The communication personnel in a corps artillery headquarters and headquarters battery are discussed in the following paragraphs. The communication section may be supplemented by signal corps personnel from the corps signal battalion to assist in the operation and installation of communication equipment.

a. Corps Artillery Headquarters. The corps artillery communication officer, a major, is on the commander's special staff to assist and advise on all matters pertaining to communication.

b. Communication Platoon Headquarters, Headquarters Battery.

- (1) Assistant communication officer--Lt.
- (2) Communication chief--E-7.
- (3) Senior message clerk--E-4.
- (4) Message clerk--E-3.
- (5) Wireman--E-3.

c. Wire Section, Headquarters Battery.

- (1) Section chief--E-6.
- (2) Six wire team chiefs--E-5.

(3) Thirty-six wiremen and switchboard operators--E-4, E-3, and E-2.

a. Radio Section, Headquarters Battery.

(1) Section chief--E-5.

(2) Ten intermediate and low-speed radio operators--E-4 and E-3.

(3) Two radio mechanics--E-5 and E-4.

Section III. RADIO SYSTEM OF CORPS ARTILLERY

6. INTERNAL RADIO NETS

To command, control, and exercise fire direction over the subordinate units (except artillery with the division), corps artillery normally employs 2 frequency-modulated (FM) channels and 3 amplitude-modulated (AM) frequencies. With these radio channels, corps artillery will establish the following internal radio nets:

a. Corps Artillery Command Net (FM).

(1) Commanding general--AN/VRC-17.

(2) Executive officer--AN/VRC-17.

(3) Assistant corps artillery commander--AN/VRC-9.

(4) S3--AN/VRC-2.

(5) Communication officer--AN/VRC-2.

(6) Headquarters battery commander--AN/VRC-9.

(7) Assistant communication officer--AN/VRC-9.

(8) Aviation officer--AN/VRC-9.

(9) Airstrip--AN/VRC-17.

(10) Each organic army aircraft--AN/VRC-44.

(11) Air liaison officer--AN/VRC-30.

(12) CO and operations section, observation battalion--AN/VRC-17.

(13) CO, each field artillery battalion 762mm rocket (when attached to corps artillery)--AN/VRC-17.

(14) Operation section, each field artillery battalion 762mm rocket (when attached to corps artillery)--AN/VRC-2.

(15) CO, each field artillery battalion, corporal (when attached to corps artillery)--AN/VRC-17.

- (16) Operations section, each field artillery battalion, corporal (when attached to corps artillery)--AN/VRC-2.
- (17) CO, each field artillery battalion, 280mm gun (when attached to corps artillery)--AN/VRC-17.
- (18) Operations section, each field artillery battalion, 280mm gun--(when attached to corps artillery)--AN/VRC-2.
- (19) CO, each field artillery group--AN/VRC-17.
- (20) Operations section, each field artillery group--AN/VRC-2.
- (21) CO, each separate unit under corps artillery command--AN/VRC-17.
- (22) Operations section, each separate unit under corps artillery command--AN/VRC-9.
- (23) Battery commander, searchlight battery--AN/GRC-5.

b. Corps Artillery Survey Channel (EM).

Corps artillery is allotted a corps artillery survey channel for survey coordination within the corps.

c. Corps Artillery Command Net (AM).

- (1) Corps artillery radio section--AN/GRC-38.
- (2) Observation battalion--AN/GRC-9.
- (3) Each field artillery battalion directly under corps artillery--AN/GRC-9.
- (4) Each field artillery group--AN/GRC-9.
- (5) Antiaircraft artillery group--AN/GRC-26.
- (6) Corps artillery airstrip--AN/GRC-9.
- (7) Corps artillery section at corps headquarters--AN/GRC-19.
- (8) Each field artillery battalion, 762mm rocket (when attached to corps artillery)--AN/GRC-46.
- (9) Each, field artillery battalion, SSM corporal (when attached to corps artillery)--AN/GRC-46.

d. Corps Artillery Fire Direction Net (AM).

- (1) Corps artillery--AN/GRC-38
- (2) Each field artillery group--AN/GRC-19.

- (3) Each infantry division artillery FDC--AN/GRC-46.
- (4) Armored division artillery FDC--AN/GRC-46.
- (5) Observation battalion--AN/GRC-19.
- (6) Each separate unit directly under corps artillery--AN/GRC-19.

- (7) Each field artillery battalion in field artillery groups--AN/GRC-19 (listens).
- (8) Corps FSCC (as commander directs).
- (9) Each field artillery battalion, 762mm rocket (when attached to corps artillery)--AN/GRC-46.
- (10) Each field artillery battalion, SSM, corporal (when attached to corps artillery)--AN/GRC-46.

e. Corps Artillery Liaison Net (AM).

- (1) Corps artillery radio section--AN/GRC-9.
- (2) Each corps artillery liaison officer--AN/GRC-9.

7. EXTERNAL RADIO NETS

Corps command net AM. The corps signal battalion furnishes to the corps artillery a radio set AN/GRC-26 with operators to operate in the corps command net AM.

8. SPECIAL FUNCTION RADIO NETS

a. AAA Intelligence. The corps artillery FDC and airstrip will monitor this net with a radio set AN/GRR-5.

b. Tactical Air Observation. The corps artillery operations and radio sections operate in this net for adjustment of fire by high performance aircraft using a radio set AN/ARC-27. This net may also be utilized for communication with high performance aircraft when locating atomic targets and for reporting effect on these targets when fired on by corps artillery units.

c. Tactical Air Direction. The air liaison officer (located at corps FSCC) will operate in this net with a radio set AN/VRC-30.

Section IV. WIRE SYSTEM OF CORPS ARTILLERY

9. TRUNK CIRCUITS

- a. One line to each AAA group with the corps.
- b. A minimum of one line to each field artillery group.
- c. A minimum of one line to each FA battalion and separate battery directly under command of corps artillery and one line to the FDC of 762mm rocket and corporal battalions.
- d. Two lines to each division artillery with the corps (one to FDC).
- e. Two lines to the field artillery observation battalion.
- f. Two lines to the switchboard in corps artillery FDC.
- g. Minimum of two lines from corps. (Normally spiral-4 cable and carrier equipment to provide 3 voice and 4 teletypewriter circuits will be installed between corps and corps artillery.)
- h. To corps FSCC (as commander directs).

10. LOCAL CIRCUITS IN COMMAND SWITCHBOARD

- a. Commanding general.
- b. Executive officer.
- c. S3.
- d. S2.
- e. Message center.
- f. Teletype at message center (simplex or phantom on trunk lines from corps) The teletype equipment and operators for this circuit is furnished by corps signal battalion.
- g. Other locals as required.

11. CIRCUITS IN FDC SWITCHBOARD

Owing to the large number of lines terminating in the fire direction center, a switchboard is installed to handle all of the local and simplex circuits.

a. Local Circuits.

- (1) S2.
- (2) S3.

- (3) Counterbattery intelligence officer.
- (4) Hostile-battery chart.
- (5) Planning chart.
- (6) Operations chart.
- (7) Selected field artillery battalion (or battalions).

b. Simplex Circuits. Simplex circuits are superimposed on trunk circuits to subordinate units.

Section V. FIELD ARTILLERY GROUP COMMUNICATION

12. COMMUNICATION REQUIREMENTS

The field artillery group must maintain communication with the following units:

- a. Each attached field artillery battalion.
- b. Higher headquarters.
- c. Reinforced unit, when on reinforcing mission.
- d. High performance aircraft supporting the group.
- e. Staff officers and sections within the group headquarters.

13. COMMUNICATION PERSONNEL OF FIELD ARTILLERY GROUP HEADQUARTERS AND HEADQUARTERS BATTERY

a. Group Artillery Headquarters. The group artillery communication officer, a major, is on the commander's special staff, to assist and advise on all matters pertaining to communication.

b. Communication Platoon Headquarters, Headquarters Battery.

- (1) Assistant communication officer--Lt.
- (2) Communication chief--E-7.
- (3) Senior message clerk--E-4.
- (4) Message clerk--E-3.
- (5) Radiotelephone operator--E-3.

c. Wire Section, Headquarters Battery.

- (1) Section chief--E-6.
- (2) Four wire team chiefs--E-5.

(3) Twenty-three wiremen and switchboard operators--E-2, E-3, and E-4.

d. Radio Section, Headquarters Battery.

- (1) Section chief--E-5.
- (2) Five radio operators--E-4 and E-3.
- (3) Radio mechanic--E-4.

Section VI. RADIO SYSTEM OF THE FIELD ARTILLERY GROUP

14. INTERNAL RADIO NETS

To command, control, and exercise fire direction over the subordinate units, a field artillery group normally employs 1 FM frequency and 1 AM frequency. With these channels, the field artillery group will establish the following radio nets:

a. Group Command Fire Direction Net (FM). Since the group is authorized only one FM channel, the command net is also used for fire direction purposes.

- (1) Group commander--AN/VRC-17.
- (2) Group executive--AN/VRC-17.
- (3) Operations--AN/VRQ-2.
- (4) Communication officer--AN/VRQ-2.
- (5) Headquarters battery commander--AN/VRC-9.
- (6) Assistant Communication officer--AN/VRC-9.
- (7) Aviation officer--AN/PRC-9.
- (8) Airstrip--AN/VRC-17.
- (9) Army aircraft (two)--AN/ARC-44.
- (10) The fire direction center of each attached field artillery battalion and separate battery--AN/VRC-9.
- (11) The commander and executive officer of each attached field artillery battalion--AN/VRC-17.

b. Group Command Net (AM).

- (1) Operations--AN/GRC-9.
- (2) Airstrip--AN/GRC-9.
- (3) Liaison officer--AN/GRC-9.

(4) Each attached artillery battalion and separate battery--AN/GRC-9.

15. EXTERNAL RADIO NETS - The Field Artillery Group operates in the following external radio nets:

a. Corps Artillery Fire Direction Net (AM). Radio Section--AN/GRC-19.

b. Corps Artillery Command Net (AM). Radio section--AN/GRC-9.

c. Corps Artillery Command Net (FM).

(1) Group commander--AN/VRC-17.

(2) Group executive--AN/VRC-17.

(3) Group operations--AN/VRQ-2.

d. Division Artillery Command Fire Direction Net (FM). (When on a reinforcing mission)--group operations--AN/VRQ-2.

e. Division Artillery Fire Direction Net (AM) (When on a reinforcing mission) Group Operations--AN/GRC-9.

16. SPECIAL FUNCTION RADIO NETS

a. AAA Intelligence Net. The field artillery group FDC and air section operate a radio set AN/GRR-5 in the AAA intelligence net to receive information pertaining to enemy aircraft.

b. Tactical Air Observation. The operations section operates a radio set AN/ARC-27 in the tactical air observation net for the purpose of adjusting heavy artillery fire by high performance aircraft. This net may also be utilized for communication with high performance aircraft when locating atomic targets and for reporting effect on these targets when fired on by units attached to the group.

Section VII. WIRE SYSTEM OF THE FIELD ARTILLERY GROUP

17. TRUNK CIRCUITS

a. One line to each battalion and separate battery with the group.

b. Two lines to the switchboard in FDC.

c. One line to each reinforced unit.

d. One line to adjacent units (lateral circuit).

e. One line from adjacent units (lateral circuit).

f. One line from corps artillery (or division artillery, if attached).

18. LOCAL CIRCUITS IN THE COMMAND SWITCHBOARD

- a. Group commander.
- b. Group executive officer.
- c. S2.
- d. S3.
- e. Message center.
- f. Radio and panel station.
- g. Others, as required.

19. CIRCUITS IN FDC SWITCHBOARD

Owing to the large number of lines terminating in the fire direction center, a switchboard is installed to handle the local and simplex circuits.

a. Local circuits.

- (1) S2.
- (2) S3.

b. Simplex Circuits.

- (1) From corps artillery (or division artillery, if attached).
- (2) Reinforced unit (when on a reinforcing mission).
- (3) Subordinate units.

Section VII. SUMMARY AND SPECIAL NOTES

20. SUMMARY

a. Corps artillery and field artillery group headquarters perform an important function in the tactical control and administrative supervision of their attached field artillery battalions.

b. Corps artillery normally employs 1 FM frequency and 3 AM frequencies for the purpose of command, control, and the exercise of fire direction of its subordinate units. The field artillery group normally employs 1 FM frequency and 1 AM frequency for the purpose of command, control, and the exercise of fire direction. This employment requires the group to use the command net (FM) for fire direction functions.

c. The wire systems of corps artillery and the field artillery group generally parallel the radio systems, linking these headquarters with their superior, subordinate, attached, supporting, and reinforced units. Spiral-4 cable is used in the installation of some of these circuits. Switchboards are used in the fire direction centers to provide flexibility in the exercise of control, coordination and supervision.

21. SPECIAL NOTES