FM 11-137

DEPARTMENT OF THE ARMY FIELD MANUAL

SIGNAL COMMUNICATIONS CENTER OPERATION COMPANY

HEADQUARTERS, DEPARTMENT OF THE ARMY
DECEMBER 1964

AGO 6685A

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *20 February 1968*

SIGNAL COMMUNICATIONS CENTER OPERATIONS COMPANY

FM 11–137, 17 December 1964, is changed as follows:

In paragraphs 18, 20, 23, and appendix II, paragraph 6, wherever the nomenclature "AN/GRC–46" appears, it is changed to read "AN/GRC–142."

Page 2, paragraph 1. In line 5, "TOE 11–137E" is changed to read "TOE 11–137G."

Page 2. Paragraph 2*b* is superseded as follows:

b. Unless otherwise specified, the material presented herein is applicable to—

(1) General war, including consideration for the employment of and protection from nuclear munitions and chemical, biological, and radiological agents.
(2) Limited war.
(3) Cold war, including stability operations.

Page 2, paragraph 3. In lines 9 and 10, "the Director, Monmouth Office" is changed to read "Commanding Officer," and in line 13, after "07703," the following is added: "Originators of proposed changes that would constitute a significant modification of approved Army doctrine may send an information copy, through command channels, to the CG, USACDC, to facilitate review and followup."

Page 2. Paragraphs 5 and 6 are superseded as follows:

5. Mission

The mission of the signal communications center operations company is to provide signal communications facilities for headquarters of units operating within a communications zone (COMMZ) or a field army area.

6. Assignment and Allocation

a. Assignment. This unit normally is assigned to a U.S. Army strategic communications command (theater) (USASTRATCOM (theater)). It may be assigned to other major signal organizations.

b. Allocation. The basis of allocation normally is four per USASTRATCOM (theater). It may be allocated as required per other major signal organization.

Page 2. Paragraph 7 is superseded as follows:

7. Capabilities

This unit, at full strength, provides the following communications services:

a. Installation, operation, and maintenance of five signal communications centers. Each signal communications center includes:

(1) Local battery telephone switching for 120 local and trunk circuits.
(2) A patching central (PATCENT) for interconnecting, patching, and testing 624 two-wire circuits.
(3) Three secure full-duplex teletypewriter circuits, six secure half-duplex teletypewriter circuits, one secure full-duplex and four secure half-duplex teletypewriter circuits, or two secure full-duplex and two secure half-duplex teletypewriter circuits.
(4) A secure voice frequency radio teletypewriter station.
(5) Switching for 16 voice frequency local or trunk teletypewriter circuits.
(6) An FM-voice radio station or an FM-voice radio retransmission station.
(7) Six motor messenger teams.
(8) Message center facilities, including off-line crypto (when required), facsimile, data transceiver, and motor messenger facilities.

b. Organizational maintenance of organic weapons, vehicles, and communications-electronics equipment.

c. Individuals of this unit can engage in effective, coordinated defense of the unit area or installation.

d. The company is not authorized the heavy

weapons or personnel needed for the increased security requirements typical of stability operations, or the aircraft for aerial supply distribution or air messenger operation. During stability operations, the signal communications center operations company is capable of providing the following:

(1) Internal communications support for a military assistance advisory group, mission, or military group headquarters.
(2) Internal communications support for five small headquarters of brigade or comparable size.
(3) Communications center support for a group of units, on an area basis, in heavily populated troop areas.
(4) Internal communications support to special action forces committed in stability operations.
(5) Internal communications support to host country military or civilian agencies to enhance their communications capability.
(6) Limited communications training to host country military forces or civilian activities. This includes limited training in communications-electronics operations, tactical operation of communications-electronics equipment, and communications-electronics maintenance.
(7) Surveys of communications requirements to provide a basis of allocation of communications equipment and assistance to a host country.
(8) Performance of military civic action communications-electronics functions and such other functions as are commonly within the capabilities of all military units.

Page 3, paragraph 8. Subparagraph *c*, *d*, and *e* are added as follows:

c. Each platoon is authorized only one mobile medium power RATT set and two radio sets.

d. The company is authorized only motor messengers and has no air messenger capability.

e. When committed to perform its communications mission on a 24-hour basis, this company has only a limited capability to provide communications training, to make communications surveys, or to take part in military civic action.

Page 3. Paragraph 9 is rescinded.

Page 3. Paragraph 11 is superseded as follows:

11. Mobility

This unit is 100 percent mobile.

Page 4, paragraph 13. In lines 7 and 8, delete "direct support maintenance for."

Page 5. Paragraph 13*a* is superseded as follows:

a. Command and Administration. This section consists of the company commander, a first sergeant, a company clerk, and a personnel records specialist. It is equipped to establish a company headquarters for company command and administration. The company commander is provided a ¼-ton truck in which is mounted an FM radio set. This set affords the commander means with which to contact operating platoons, to monitor a higher headquarters net, to enter other FM radio nets, or to contact RWI stations as required.

Page 5, paragraph 13*b*. In lines 2 and 3, "3 first cooks, 3 cooks, and a cook's helper" is changed to read "and sufficient mess personnel authorized by criteria in AR 310–32."

Page 5, paragraph 13*c*. In lines 2 and 3, "signal supply-parts specialist" is changed to read "repair parts specialist, and equipment records clerk," and in line 4, "TOE 11–137E" is changed to read "TOE 11–137G."

Page 5, paragraph 13*e*. In line 2, delete "a facsimile repairman,."

Page 5, paragraph 14. In lines 5 and 6, "and messenger" is changed to read "messenger, and data transmission."

Page 6, paragraph 14*b*. In line 8, "AN/MSC–29" is changed to read "AN/MSC–29, six Electronic Teletypewriter Security Equipment TSEC/KW–7, two Generator Set PU–474M."

Page 7. Paragraph 15 is superseded as follows:

15. General

The signal communications center operation company is organized to provide communications center platoons, which may be employed to support a single headquarters of brigade or group size having a requirement for signal center operations, or to provide small communications centers employed on an area basis in support of many smaller units. Each platoon of this unit is capable of establishing and operating a complete communications center under a variety of situations.

a. The entire company may be employed to support several headquarters requiring this service in

a particular area; for example, a large supply and maintenance facility such as a depot.

b. Individual platoons may be employed in support of a separate small headquarters or for a group of units on an area basis in remote areas.

c. Platoons of the company may be used to supplement the communications facilities of a signal center established and operated by another signal unit in the field army area or COMMZ.

Page 7, paragraph 17. In line 12, "Trunk and local" is changed to read "Trunk, teletypewriter, and data."

Page 8, paragraph 17*a*(4). In line 3, "local telephone circuits" is changed to read "local teletypewriter circuits."

Page 8, paragraph 17*b*. In line 5, delete the word, "all."

Page 8. Figure 2 is superseded as follows:

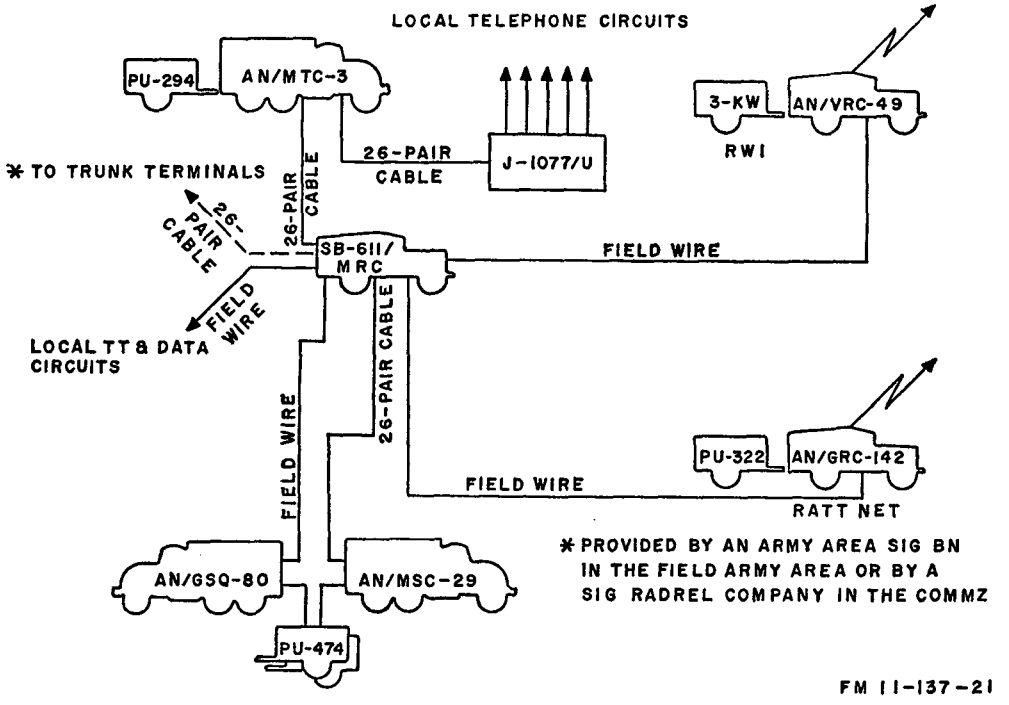

Figure 2. Type signal communications center platoon equipment configuration.

Page 9. Paragraph 19 is superseded as follows:

19. Radio Facilities (FM-Voice)

Each operation platoon has a radio set AN/VRC–49 that can provide certain radio facilities for a supported headquarters. This set can be employed as an FM-voice radio retransmission station. While thus employed, it cannot be used for other purposes. When the set is *not* functioning as a retransmission station, its two RT–524/VRC's can provide two stations in other FM-voice radio nets; for example, a net control station in the supported headquarters command net and a station in a higher headquarters command net, or net control stations in two of the supported headquarters command nets.

Page 10, paragraph 20*a*(8). In line 6, the following sentence is added: "The facsimile operator also installs and operates the data transceiver card unit automatic data processing equipment (ADPE)."

Page 11, paragraph 22. In lines 6 and 10, "radio relay" is changed to read "multichannel radio."

Page 11, paragraph 23*a*. In line 2, "must" is changed to read "should."

Page 12. Paragraph 23*d* is added as follows:

d. A platoon of the signal communications center operation company cannot provide complete signal center service at two separate locations simultaneously. If complete signal communications center operations facilities are required at two locations during the period when the supported headquarters is being displaced, and the other platoons of the company are already em-

ployed elsewhere, the company must be augmented by a signal or communications unit or appropriate TOE 11–500 teams from the COMMZ or the field army. If a need for complete signal communications center facilities does not exist at both locations, elements may be phased out at the old location to establish limited facilities at the new location gradually by assuming more of the traffic load. When the new center is in full operation, the old location can be closed out and the remaining personnel and equipment brought to the new location or return to the unit providing assistance during displacement. If the compay is not augmented to accomplish displacement as described, the company must tear down the communication facilities, load, move, and install the communications facilities at the new location.

Page 12. Paragraph 23.1 is added as follows:

23.1. Employment During Stability Operations

a. General. When deployed according to its TOE, the company can provide the internal communication facilities for a maximum of five operational headquarters. If required, two or more platoons can be combined to operate communications centers for headquarters larger than brigades. This flexibility enhances the value of the unit for stability operations, because it can be tailored to provide communications support needed by various size headquarters. The company can be used as a basic building block unit with TOE 11–500 teams added to fit the needs of the supported units. For example, by the addition of TOE 11–500 teams (RI, radio relay terminal) the company can install and operate a command communications system to provide long distance communications support between a special action force headquarters and four detachments.

b. Messenger. During stability operations, the motor messenger teams are vulnerable to ambush, sniper fire, mines and roadblocks. For this reason, aircraft will be needed to handle the bulk of messenger traffic. Since aircraft will be used extensively during stability operations for transportation, resupply, and medical evacuation, these flights should be exploited for messenger traffic.

c. Security. When the platoons are dispersed to support widespread units, they cannot adequately provide their own security. Security of the communications center platoon should be provided by the supported headquarters. This limitation minimizes the company's ability to install isolated area-type communications facilities except when the platoon is collocated with a unit that can assist in defense of the site.

d. Mess and Supply. When the platoons are dispersed, they have neither their own mess nor a Class III POL resupply capability. The platoons depend on the supported headquarters to provide both on a 24-hour basis.

Page 15, paragraph 29*b*. In line 5, "4th echelon" is changed to read "direct support," and in line 16, "general support" is changed to read "direct support."

Page 15. Paragraph 29.1 is added as follows:

29.1. Combat Service Support

a. Field Army Support Command. The field army support command (FASCOM) provides combat service support, except personnel replacements, for the field army. Primarily, two kinds of major subordinate elements of the FASCOM provide such support. These are the army-wide service organizations and the support brigades.

b. FASCOM Army-Wide Service Organization. The major subordinate FASCOM organizations that provide army-wide services are brigades such as the FASCOM medical brigade. They provide medical, military police, transportation, construction, and civil affairs services in the field army service area and all of the corps areas.

c. FASCOM Support Brigades. Each support brigade of the FASCOM provides supply, maintenance, and certain services in a designated area. The army rear support brigade performs its functions in the army service area. A corps support brigade provides a variety of services (for example, supply, maintenance, POL, postal, and finance services) in a corps area of responsibility. This brigade provides both direct and general support to nondivisional units in the corps area. It provides general support for the divisions attached to a corps.

d. Combat Service Support for the Operation Platoons. When the operation platoons of the company are dispersed and attached to the headquarters or unit they support, the company commander determines how the platoons obtain logistical support. The company commander prepares plans and coordinates them with the FASCOM support brigades. These plans and co-

ordination insure that the company elements, wherever located, can obtain combat service support from the nearest element of the FASCOM support brigade. A platoon leader, upon arriving at the site where his platoon is to operate, establishes liaisons with the FASCOM support brigade element which has been designated to support the platoon. This permits establishment of detailed procedures for provision of necessary support. The company commander also makes special arrangements to get combat service support for platoons of the company which are employed in support of a single headquarters of brigade size or employed on an area basis in support of many smaller units. Such arrangements may provide for a platoon to place requirements on local combat service support elements through the headquarters at which this platoon is located. Under such circumstances, the platoon leader establishes liaison through this headquarters for detailed combat service support procedures.

Page 16. Paragraphs 32.1 and 33.1 are added as follows:

32.1. Unit Chemical, Biological, and Radiological Defense

a. Defensive Measures. The purpose of unit chemical, biological, radiological (CBR) defensive measures (FM 21-40) is to permit the unit to continue its mission during and after a CBR attack. To accomplish their purpose, therefore, such measures must assure effective operations in a CBR environment. These defensive measures include—

(1) Using chemical agent detectors and alarm systems.
(2) Wearing protective clothing.
(3) Employing protective equipment.
(4) Using protective shelters.
(5) Dispersing personnel and equipment.
(6) Decontaminating equipment and personnel.
(7) Administering first aid.

b. Responsibilities. Every member of the unit has some responsibility in unit CBR defense. Attaining and maintaining individual and unit proficiency in CBR protective measures within the established standards is a command responsibility. Without degrading this responsibility, individual members of the unit are responsible for certain general functions connected with CBR defensive operations. Duties related to these functions are—

(1) *Individual soldier.* The individual soldier learns the unit and individual CBR protection procedures so that he can carry out his mission with the least risk of injury.
(2) *Unit commissioned and noncommissioned officers.* Unit officers and noncommissioned officers (NCO) teach individual protection procedures to all men, establish unit collective and tactical CBR defensive measures and procedures, and use organizational first aid and detection equipment.
(3) *Chemical Representative.* The company commander designates a member(s) of his staff as a CBR representative(s) to advise him on planning and coordinating CBR defensive operations, because this unit is not authorized a staff specialist(s) for this purpose. The personnel so designated are given special CBR training to qualify them for performing these duties in addition to their regular duties.

c. CBR Training. When the platoons of this company are dispersed and attached to the headquarters or unit they support, CBR training is provided by the supported headquarters or unit. The company must be ready to operate with maximum individual and unit effectiveness under conditions produced by either friendly or enemy employment of CBR weapons. Readiness in CBR is a company command responsibility. The commander must hold every officer and NCO responsible for knowing and being able to apply the principles, tactics, and techniques of CBR defense commensurate with the level of his authority. All other members of the company must train in how to carry out CBR defense measures and what practical steps to take in the absence of specific instructions.

33.1 Tactical Airlift Operations

U.S. Air Force tactical airlift forces increase the battlefield mobility of the Army in land combat operations. The U.S. Air Force provides the supported headquarters with the capability to airland or airdrop signal elements and to provide these elements with the sustained logistical support required. In the event that the commanding officer determines that he has a tactical airlift require-

ment, he submits his request in accordance with the plans of the supported headquarters for the tactical airlift operation. Complete details of joint Army-Air Force doctrine for tactical airlift operations may be obtained from AFM 2–50/FM 100–27.

Page 17. Paragraph 34.1 is added as follows:

34.1. Defense Against Air Attack

The signal communications center operation company had no local air defense weapons. Passive air defense measures, such as dispersion, cover and concealment, camouflage, and warning systems, constitute the primary internal actions taken by the company to avoid or reduce the effect of enemy air attack. Nevertheless, the company can employ its individual weapons in active defense against air attack. Company SOP must establish criteria and detailed procedures for taking and for withholding active measures. These procedures provide that any action taken must permit continuance of signal mission operations. They also provide for the safety of friendly aircraft and troops. Further, they provide that such action must be taken or withheld in accordance with procedures established by the commanders at whose headquarters the company installations are located. Normally, elements of the company are restricted from firing on aircraft when not under direct attack. When under direct attack, or under specified unusual circumstances when so directed by the responsible commander, members of the company may engage positively identified low-flying enemy aircraft by delivering all available small-arms fire on the attacking aircraft. The principle involved is that large volumes of fire from nonair defense weapons can destroy both high speed and low speed aircraft or disrupt their attack. Against fast aircraft, an element may use the technique called a *pattern of fire*, in which every man places his fire into the flightpath, making no attempt to track the aircraft. This forces the aircraft to fly through the *pattern* or abandon the attack. Against slow aircraft, individuals make their small-arms fire effective by placing well-aimed shots on the aircraft, using the maximum rate of fire of their weapons. Aircraft recognition and rules for engagement, as well as firing techniques, determination of when an air attack is in progress, and safety measures for protection of friendly aircraft and troops are subjects for emphasis in unit and individual training.

Page 18, appendix I. In paragraph 6, the following are added to the list of field manuals in proper numerical order:

AFM 2–50/FM 100–27, U.S. Army/U.S. Air Force Doctrine for Tactical Airlift Operations.

FM 54–3, The Field Army Support Command.

Page 20, appendix II, paragraph 4 *b* and *c*. In line 3, "PU–294/U" is changed to read "PU–474/M."

Page 22, appendix III. The following are added to the indicated columns of the list of major items in proper numerical order:

Nomenclature: Radio Teletypewriter Set, AN/GRC–142.

Description: A shelter-mounted (¾-ton truck) radio which provides half-duplex capability for single-sideband voice, CW, and secure radio teletypewriter communications for forward tactical use. The AN/GRC–142( ) replaces the radio teletypewriter set AN/GRC–46. The AN/GRC–122 and the AN/GRC–142 are similar except that the AN/GRC–122 has an additional receiver-exciter unit to provide full-duplex operation.

Major Components: AN/GRC–106, AN/TGC–15, MD–522( )/GRC, S–153.

Remarks: Set is mounted in shelter S–153. Frequency 2.000 to 29.999 mcs in locked/kc steps. Range 80 km (ground wave). Weight approximately 1,250 lbs.

Nomenclature: Radio Set, AN/VRC–46, TM 11–5820–401–10.

Description: A manually tuned vehicular-mounted FM radio set. Includes one RT–524/VRC.

Major Components: RT–524/VRC, MT–1029/VRC, AT–912/VRC.

Remarks: Requires 24-volt power source. Power output 25–35 watts. Range 30 to 75.95 mc. Weight 58 lbs.

Page 23. "Radio Set, AN/GRC–46" is deleted from the list of major items.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

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Major General, United States Army,
The Adjutant General.

Distribution:
To be distributed in accordance with DA Form 12–11 requirements for Signal Communications Center Operation Company.

U.S. GOVERNMENT PRINTING OFFICE: 1968

FIELD MANUAL
No. 11–137

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *17 December 1964*

SIGNAL COMMUNICATIONS CENTER OPERATION COMPANY

CHAPTER 1
GENERAL

Section I. INTRODUCTION

1. Purpose

This manual provides information and doctrinal guidance for the employment of the personnel and equipment of the signal communications center operation company as organized and equipped under TOE 11–137E.

2. Scope

a. This manual covers the characteristics of the signal communications center operation company, company organization, company communications operations, and company administrative operations. In addition, appendix II covers the vehicle loading plan, and appendix III lists the technical characteristics of the major items of organic communications-electronics equipment.

b. The material presented herein is applicable to both nonnuclear and nuclear warfare.

3. Comments on Publication

Users of this manual are encouraged to submit recommended changes or comments for its improvement. Comments should be prepared according to AR 310–3 and keyed to the specific page, paragraph, and line of text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to the Director, Monmouth Office, U.S. Army Combat Developments Command Communications-Electronics Agency, ATTN: Doctrine Division, Fort Monmouth, N.J. 07703.

4. References

Publications that provide detailed information relating to the material presented herein are listed in appendix I.

Section II. COMPANY CHARACTERISTICS

5. Mission

The mission of the signal communications center operation company is to provide internal communications, as required, for operational headquarters within the field army area or the communications zone (COMMZ).

6. Assignment and Allocation

a. This unit is assigned to a field army signal group or to an appropriate signal organization in the COMMZ.

b. The basis of allocation is normally one per field army and two per advanced logistical (ADLOG) command or base logistical (BALOG) command.

7. Capabilities

This unit, at full strength, provides the following communications services:

a. Install and operate the internal communications facilities for a maximum of five operational headquarters, such as logistics coordination centers or depot complexes. The communications facilities provided by each platoon are—

(1) Local battery telephone switching for 120 local and trunk circuits.

(2) Circuit control for forty-six 26-pair cables and eighteen field wire pairs.

(3) Eight full-duplex or 12 half-duplex nonsecure teletypewriter circuits; or 2 full-duplex and 4 half-duplex secure teletypewriter circuits; or any combination thereof.

(4) A secure voice frequency radio teletypewriter station.

(5) Switching for 16 voice frequency local or trunk teletypewriter circuits.

(6) A frequency modulated (FM) radio/wire integration station, a radio sta-

tion (FM-voice), or a radio retransmission station (FM-voice).

(7) Six motor messenger teams.

(8) Message center service.

b. Organizational maintenance for organic arms and vehicles, and direct support (3d echelon) maintenance for organic communications-electronics equipment.

c. Individuals of this unit fight as infantrymen when required.

8. Limitations

a. This unit must depend on other units and organizations for the following services:

(1) Medical and religious services.

(2) Field maintenance for organic arms and vehicles.

(3) General support (4th echelon) maintenance for organic communications-electronics equipment.

(4) Security of communications-electronics installations against ground attack.

b. This unit depends on other signal units in the area for trunking facilities.

9. Unit Modification

a. This unit may operate at reduced strength for periods of noncombat and for limited periods of combat.

b. This unit may use indigenous personnel in certain type positions, as indicated by the TOE which reduces the requirement for United States military personnel. The number of indigenous personnel that may be employed by this unit is determined by the major commander to whom the unit is assigned. This will depend on the training of indigenous personnel, the number of shifts required, and other local conditions.

c. Interpreters and translators required when indigenous personnel are used will be provided from resources available to the theater commander.

10. Unit Category

The signal communications center operation company is designated as a category II unit within the meaning of AR 320–5.

11. Mobility

This unit is 90 percent mobile. Seven additional 2½-ton cargo trucks with trailers are required to make this unit 100 percent mobile.

CHAPTER 2
COMPANY ORGANIZATION

12. General

The signal communications center operation company (fig. 1) consists of a company headquarters and five identical communications center operation platoons. Each platoon is organized into a platoon headquarters, a communications center operation section, a telephone and switching section, and a radio section.

13. Company Headquarters

The company headquarters consists of a company commander, enlisted specialists, and the necessary equipment for company command and administration. Company headquarters provides services such as training, mess, supply, and organizational maintenance of organic arms and vehicles, and direct support maintenance for communications-electronics equipment (except crypto and teletypewriter) for the operating platoons. Crypto and teletypewriter direct support maintenance is performed by repairmen assigned to the operating platoons. In the field, the company headquarters should be centrally located in relation to the operating platoons to provide the above services. In the event operating platoons are widely scattered, company headquarters should be collocated with one of the operating platoons, with the other platoons attached for rations and quarters to the headquarters or unit they support. TOE 11–137E provides the company headquarters personnel and equipment functionally organized into sections to perform specific

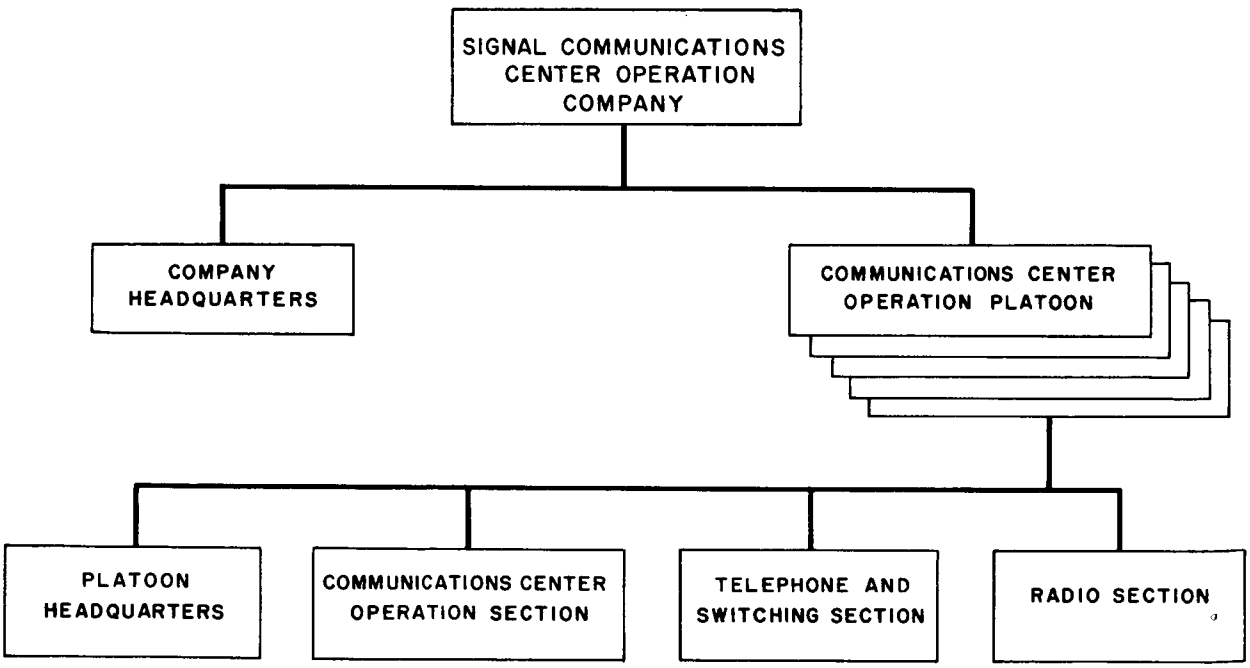

Figure 1. Organization of the signal communications center operations company.

service for the company. These sections are organized as follows:

a. Command and Administration. This section consists of the company commander, a first sergeant, a personnel management specialist, a pay specialist, a company clerk, and a personnel records specialist. It is equipped to establish a company headquarters for company command and administration. The commander is provided a ¼-ton truck in which is mounted Radio Set AN/VRC–47. The radio set affords the commander means with which to contact operating platoons, and to monitor a higher headquarters net.

b. Company Mess. This section consists of a mess steward, 3 first cooks, 3 cooks, and a cook's helper. The section is equipped to establish and operate mess facilities for the company. The company mess is operated dismounted and is loaded and moved by the company supply truck (2½-ton) when a move is required. When all the platoons are centrally located, a consolidated mess is established to feed the entire company. However, if one or more of the operating platoons are located away from the parent headquarters, personnel from the mess section are used to augment the mess of the unit the platoons are supporting. The details of company mess operations are explained in paragraph 27.

c. Company Supply. The company supply section consists of a supply sergeant, a signal supply-parts specialist, a supply clerk, and a light truck driver. TOE 11–137E provides this section with a general purpose tent and a 2½-ton truck which pulls a 1½-ton water tank trailer. The vehicle is used to haul supplies, water, rations, and the company kitchen when the company headquarters displaces. Details of company supply operations are discussed in paragraph 28.

d. Motor Maintenance. The motor maintenance section is composed of a motor sergeant, 2 senior wheeled vehicle mechanics, 5 wheeled vehicle mechanics, and 4 wheeled vehicle mechanic helpers. The TOE provides this section with a maintenance tent, automotive maintenance tools, and a 2½-ton truck which pulls a 1½-ton trailer. The motor maintenance section is capable of establishing and operating a consolidated motor maintenance shop, or providing on-site organizational motor maintenance for the operating platoons when the platoons are dispersed. Details of motor maintenance operations are explained in paragraph 29.

e. Electronic Maintenance. This section consists of a facsimile repairman, a senior radio repairman, and a radio repairman. The section is equipped with a repair shop mounted on a 2½-ton truck and the necessary tools and test equipment to accomplish on-site direct support maintenance on radio and facsimile equipment for the operating platoons. The details of electronic maintenance are explained in paragraph 29.

f. Weapons Maintenance. The company armorer provides weapons maintenance in the supply tent when the operating platoons are centrally located. However, when the operating platoons are widely dispersed, weapons maintenance is provided using other methods. Three methods for supplying weapons maintenance for widely dispersed platoons are described below:

(1) The armorer furnishes on-site weapons maintenance for the operating platoons as required, or on a scheduled basis. To make this method workable, some mobility must be provided the armorer.

(2) Weapons maintenance is furnished the operating platoons by the headquarters or unit supported.

(3) When a weapon of the platoons requires maintenance, it is evacuated to company headquarters, a replacement is drawn, or the weapon is repaired and returned to the user.

g. Administrative Operations. For a detailed discussion of the administrative operations of the company, refer to chapter 4.

14. Communications Center Operation Platoon

Five identical communications center operation platoons provide the personnel and equipment to install, operate, and maintain telephone, teletypewriter, radio/wire integration, radio (FM) and (AM), message center, and messenger facilities for a supported activity

or organization. Each platoon is designed to operate independently; however, two or more platoons can be combined to operate large communications centers. The platoons are organized by TOE into a platoon headquarters, a communications center operation section, a telephone and switching section, and a radio section.

a. Platoon Headquarters. The platoon headquarters is composed of the platoon leader, platoon sergeant, a powerman, and a signal supply-parts specialist.

(1) The platoon leader and platoon sergeant command and supervise the platoon operations. The platoon leader has a ¼-ton truck with trailer for supervision and coordination of platoon operations.

(2) The powerman and signal supply-parts specialist are provided with a ¾-ton truck with trailer. These vehicles are used to haul repair parts for the operating platoon and to haul tools and spare parts for power unit maintenance for the operating platoon.

b. Communications Center Operation Section. This section consists of a section leader (also crypto custodian) and other personnel necessary to establish and operate the platoon's communications center. The communications center operation section is equipped with a Message Center AN/GSQ–80; a Telegraph Terminal AN/MSC–29; a Facsimile Set AN/TXC–1; and miscellaneous equipment necessary to establish and operate a communications center. Six ¼-ton trucks are provided for motor messenger service.

c. Telephone and Switching Section. This section consists of a section chief and additional personnel necessary to install and operate the local telephone system for the headquarters supported. The section is equipped with a Manual Telephone Central Office AN/MTC–3, a Communication Patching Panel SB–611/MRC, 26-pair cables, field wire, and telephone instruments necessary to install the local telephone system. The section is provided with a 2½-ton truck and two ¾-ton trucks. The 2½-ton truck mounts the AN/MTC–3, and pulls a 1½-ton trailer which mounts Gasoline Engine Generator Set PU–294/G. One ¾-ton truck mounts the SB–611/MRC and pulls a ¾-ton trailer. The other ¾-ton truck and ¾-ton trailer is used by the three installer-repairmen to install the internal cabling and local field wire circuits.

d. Radio Section. This section consists of a radio team chief, 2 radio operators, and 2 radio teletypewriter operators. The section is equipped with a Radio Set AN/VRC–49 and a Radio Teletypewriter Set AN/GRC–46. Two ¾-ton trucks with ¾-ton trailer are provided to mount the radio equipment and generator sets. Each truck pulls a ¾-ton trailer carrying a 3-kw gasoline engine generator to provide 28 volt DC power to the electronic equipment when the vehicle power source is not being used.

CHAPTER 3
COMPANY COMMUNICATIONS OPERATIONS

15. General

The signal communications center operation company is organized to provide flexibility in the employment of the operating platoons. Each platoon is capable of establishing and operating a complete communications center under a variety of situations.

a. Each platoon may be employed independently or two or more platoons may be combined as the situation requires.

b. The entire company may be employed to support a depot complex, with the individual platoons providing communications support for the subdepots within the depot complex.

c. The platoons of the company may be used to supplement the communications facilities of a signal center established and operated by another signal unit in the field army area of COMMZ.

16. Equipment Configuration of a Type Communications Center

The communications center (fig. 2) is a typical communications center that could be installed by each of the platoons of the signal communications center operation company. The system may be modified as necessary to support varying operational requirements due to the situation, terrain, or other conditions.

a. When a platoon is given a mission to support a headquarters or installation, the platoon leader, section chiefs, and team chiefs should make a reconnaissance of the area to plan where the communications center installation will be located. If possible, the patch panel, telephone central office, and teletypewriter terminal should be located near each other to facilitate internal cabling. The maximum distance between each facility should not exceed 1,000 feet. The location of the RWI and RATT stations will depend on local conditions and security requirements for the headquarters served. When necessary, these stations can be located outside the headquarters area and operated by remote control.

b. The location of the terminal equipment of the trunking facilities will have to be coordinated with the signal unit that provides the equipment.

c. Details of the layout, installation, and operation of the system are contained in the succeeding paragraphs.

17. Patching and Switching Facilities

During the initial installation of the patching and switching facilities, it may be advisable to use all the personnel of the telephone and switching section to install the system. It is extremely important to have the patch panel and telephone switchboards in operation as soon as possible. The patch panel and telephone switchboards form the heart of the communications center and must be installed before the headquarters being served can be provided with local and long distance telephone service. Trunk and local circuits are patched through the patch panel to provide a means of rearranging, patching, and troubleshooting the circuits.

a. The telephone and switching section can be organized into teams as follows: to install the patching and telephone switching facilities for the communications center—

(1) The two circuit control specialists form a circuit control team to patch and test circuits as they are connected to the patch panel. Since only one man can work comfortably in the SB–611/MRC, short tours should be arranged.

(2) Two switchboard operators form a switchboard team to check the local and trunk telephone circuits as they are connected to the switchboards.

(3) The three remaining switchboard operators form a cable installation team

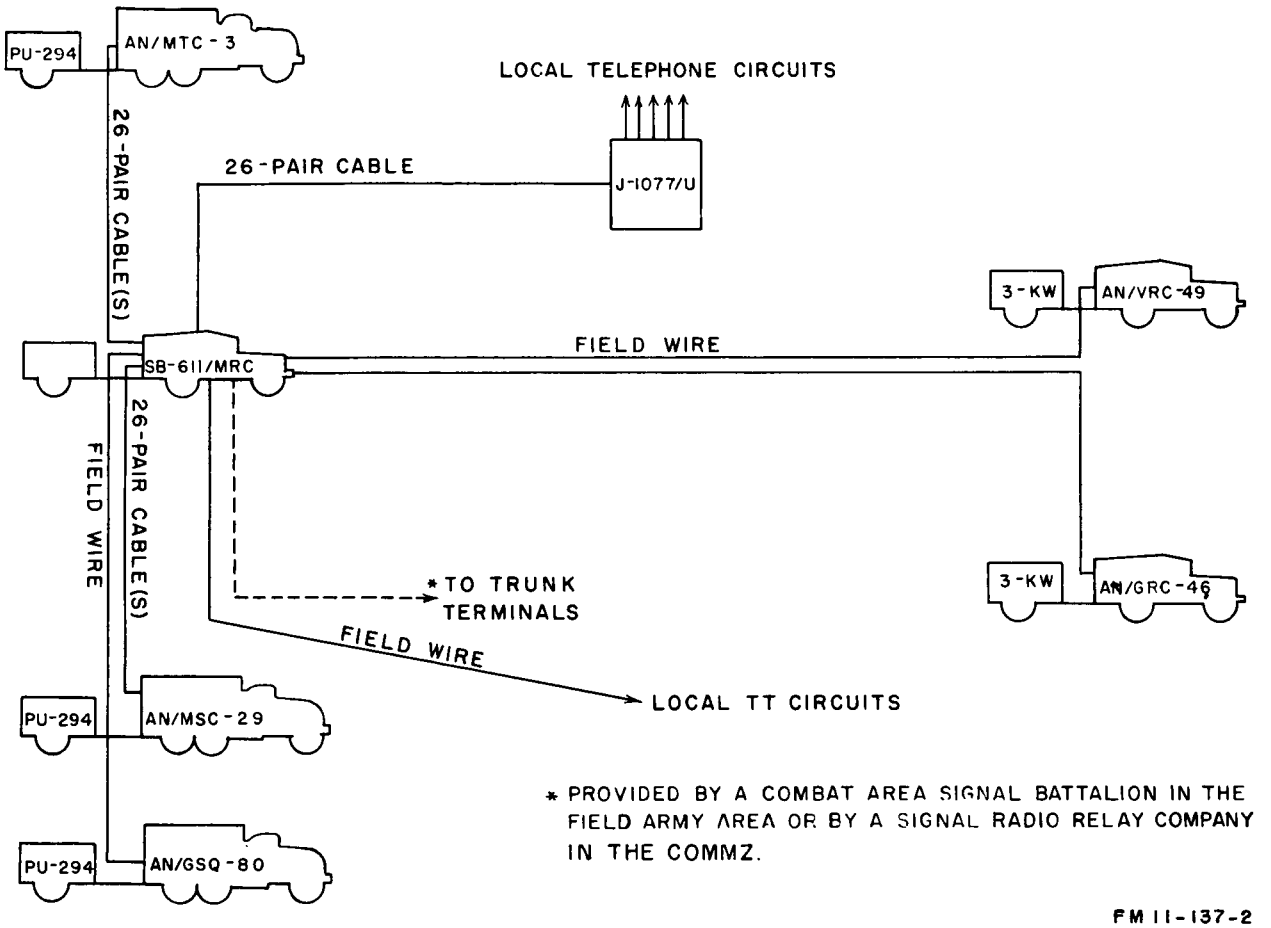

Figure 2. Type communications center equipment configuration.

to install the 26-pair cables connecting the SB–611/MRC to the AN/MTC–3 and the AN/MSC–29.

(4) The three installer/repairmen form a team to install the local telephone and local telephone circuits.

b. The above teams install the internal communications system as shown in figure 2. This type of installation is recommended because it provides for circuit control, patching, and testing all local and trunk circuits from the patch panel.

c. The cable connecting the trunk terminals to the patch panel is the responsibility of the signal unit providing the trunk circuits; however, coordination and assistance to the installation team may be required.

d. The installation of the field wire connecting the radio stations to the patch panel is the responsibility of the radio section.

e. All field wire and cable installed within a headquarters should be installed overhead or underground. This protects the wire and cable from damage by vehicular traffic within the headquarters. Consult FM 24–20, Field Wire and Field Cable Techniques, for details on proper installation.

f. When all the circuits are installed and operating, the telephone and switching section returns to normal operation. Telephone and switching teams ordinarily consist of a circuit control specialist and two switchboard operators. The three installer/repairmen work as required to install new circuits, rearrange circuits, and to repair circuit troubles.

18. Radio Facilities (AM)

Radio Set AN/GRC–46 provides the platoon with a means of communicating by voice, continous wave (CW), and frequency-shift-keyed (FSK) radio teletypewriter (RATT) signals.

a. The AN/GRC–46 can be operated as follows:

(1) Secure one-way reversible (half-duplex without break-in), or non-secure full-duplex providing page or tape copy. Normally, full-duplex operation is not used.

(2) Net with other radio sets with similar characteristics such as the AN/GRC–26 and AN/VRC–29.

(3) Operate on the move on voice or CW.

(4) Provide emergency CW communications when other means are less reliable because of poor atmospheric conditions.

b. The AN/GRC–46 can be employed—

(1) During the initial installation of the communications center to provide communications on RATT, voice, or CW.

(2) When the communications center is completely installed to provide a back-up for other circuits serving the communications center.

(3) During displacement to provide a voice or CW station while moving and a RATT station during halts.

19. Radio Facilities (FM)

Radio Set AN/VRC–49 provides each platoon with an FM radio capability that can be employed as a radio/wire integration (RWI) station, as a net control station (NCS) of a headquarters net (FM-voice), or as a radio retransmission station (FM-voice).

a. Radio Set AN/VRC–49, employed with Radio Control Groups AN/GRA–23, provides facilities for interconnecting wire telephone equipment and radio sets with push-to-talk circuits. Radio Control Sets C–1563 and C–1564 (part of the AN/GRA–23) permits telephone subscribers to control the radio set from the telephone set. Receiver-Transmitter RT–524/VRC is connected by field wire through the C–1563 to the local battery switchboards in the AN/MTC–3. This permits each telephone subscriber who is authorized to use the RWI station access to the station. In addition, telephone instruments habitually employed with RWI equipment should be equipped with a C–1564 to afford telephone subscriber control of the radio set.

b. Radio Set AN/VRC–49 consists of two RT–524/VRC's. Thus, if only one RT–524/VRC is employed as the RWI station, one RT–524/VRC can be employed as the net control station of a headquarters net (FM-voice). If the RWI station is not employed, both sets can be employed as FM-voice stations. The FM-voice station can be operated at the radio site, or it can be operated from a remote location using Radio Control Group AN/GRA–39.

c. Radio Set AN/VRC–49 can be used as a radio retransmission station (FM-voice). However, when the set is so employed, both RT–524/VRC's are used and no other service can be provided.

20. Communications Center Facilities

The communications center is installed and operated by its operation section. The communications center processes outgoing and incoming messages for the headquarters served. In addition, the communications center transmits outgoing messages to addressees and delivers incoming messages to the staff distribution center of the headquarters served. The four primary methods of message transmission are teletypewriter (including wire and RATT), CW, facsimile, and messenger.

a. The communications center section has a Message Center AN/GSQ–80 mounted on a 2½-ton truck and a Telegraph Terminal AN/MSC–29 also mounted on a 2½-ton truck, and sufficient personnel to operate a communications on a 24-hour basis. Organizing personnel into shifts to provide 24-hour service will depend on local traffic conditions. Duty tours should be arranged to provide a larger number of personnel when peak traffic loads occur, and relatively few personnel when traffic is light. The communications center section is allocated communications specialists to operate the communications center. These specialists perform the following duties:

(1) The section leader supervises all communications center operations. As an additional duty, he acts as the cryptographic officer for the supported headquarters.

(2) The communications center supervisor assists the section leader in supervising the communications center operations. In addition, he acts as a supervisor for one duty shift.

(3) Two shift supervisors provide supervision for two additional duty shifts.

(4) The communications center specialists receives, processes, and dispatches messages and performs related clerical and administrative duties in the communications center.

(5) The cryptographer installs, operates, and performs operator maintenance of the off-line and on-line cryptographic equipment in the communications center. The on-line equipment is mounted in the AN/MSC–29. The off-line equipment is located in the Message Center AN/GSQ–80 and is used to encrypt messages to be sent by messenger, CW, and teletypewriter when on-line cryptographic equipment is not used.

(6) The teletypewriter operators operate the teletypewriter equipment in the AN/MSC–29. These operators also can remotely operate Radio Set AN/GRC–46. In addition, these personnel operate the Switchboard SB–22/PT in the AN/MSC–29 to switch teletypewriter circuits.

(7) The communications clerks receive, process, and dispatch outgoing and incoming messages and perform related clerical and administrative duties in the communications center.

(8) The facsimile operator installs and operates the Facsimile Set AN/TXC–1. Normally, one voice frequency channel is provided for facsimile transmission of maps, overlays, and photographs.

(9) The motor messengers and assistant motor messengers are organized to provide six motor messenger teams. Normally, one motor messenger and one assistant make a motor messenger team. However, when security is not a factor, one motor messenger or assistant motor messenger may be used. This adds flexibility in the use of messenger personnel and provides shorter messenger duty shifts.

(10) The teletypewriter and crypto equipment repairmen provide on-the-spot teletypewriter and crypto repairs for the teletypewriter, crypto, and associated equipment. They also provide liaison with the signal supply parts specialist in platoon headquarters to provide spare parts for teletypewriter and crpyto equipment.

b. The location of the communications center within the headquarters will depend on the type organization being supported and the location of the other communications equipment of the platoon. The communications center should be located near the headquarters staff section to facilitate message handling and, if possible, be near the patch panel SB–611/MRC in order to terminate 26-pair cables in the AN/MSC–29.

c. The internal arrangement of the equipment of the communications center should facilitate message handling, processing, and transmission. The Message Center AN/GSQ–80 and the Telegraph Terminal AN/MSC–29 should be parked tailgate to tailgate to facilitate message handling.

(1) Outgoing messages are delivered from the AG distribution center to the Message Center AN/GSQ–80, processed for transmission, and passed to the means operators for transmission.

(2) Incoming messages received by the means operators, or delivered by messenger, are passed to the Message Center AN/GSQ–80, processed in, and given to a messenger team for delivery to the AG distribution center of the headquarters served.

(3) The proper message handling procedures are contained in FM 24-17, Tactical Communications Center Operations.

d. Switchboard SB–22/PT, in the Telegraph Terminal AN/MSC–29, provides a means for switching teletypewriter circuits within the headquarters. Local and trunk teletypewriter circuits are connected to the switchboard through the patch panel. The switchboard pro-

vides a means of switching local teletypewriter circuits to the teletypewriter trunk circuits serving the headquarters.

e. Local telephone circuits from the Message Center AN/GSQ–80 and the Telegraph Terminal AN/MSC–29 can be provided by field wire lines to the patch panel or the 26-pair cables connecting the Telegraph Terminal AN/MSC–29 to the Patch Panel SB–611/MRC. This will provide switching for the telephone in the communications center for local and long distance telephone service.

21. Messenger Service

a. The motor messengers of the communications center operation platoon are a vital part of the communications support provided the headquarters. They are used for—

(1) Delivery of urgent messages when electrical means are not available or when a messenger is the fastest means of delivery.
(2) Delivery of bulky items.
(3) Delivery of lengthy low priority messages to relieve the electrical means.
(4) Delivery of clear text classified messages to a headquarters that is not equipped with cryptographic equipment.
(5) Delivery of registered documents.

b. The six motor messenger teams are used for two types of messenger service—scheduled and special.

(1) Scheduled messengers follow a prearranged time schedule and route for message delivery and pick-up.
(2) Special messengers are dispatched when the urgency of a message requires their use.

c. The motor messenger teams normally are used between the headquarters or echelon of headquarters supported by the communications center operation company.

d. The motor messenger teams are controlled by the communications center supervisor. The communications center supervisor arranges duty shifts and motor messenger schedules.

22. Trunking Facilities

The trunking facilities to support the operations of the signal communications center operation company are provided by signal units responsible for communications support within the area of operation. The normal trunking support will be provided by a radio relay or by spiral–4 cable links which connect the communications center with the communications system in the area. Whether the trunks are provided by radio relay or spiral–4 cable, there are some operational problems that must be coordinated and resolved between the signal communications center operation platoon and the signal unit providing the trunking facilities. The principal problems are—

a. The time and place trunking facilities are required.

b. The location of the terminal trunking facilities within the communications center.

c. The installation of cable from the terminal equipment to the patch panel in the communications center.

d. The operational and technical coordination required between the signal communication center platoons and the operators of the radio relay or cable terminal equipment.

23. Displacement

The displacement of the supported headquarters may occur at any time depending upon the tactical or combat service support situation. When the operating platoon is attached to the supported headquarters, the platoon moves on order of the supported commander. However, the platoon leader must notify the commander of the signal communications center operation company of the move. When the operating platoon is placed in support of a headquarters, the platoon moves on order of the commander of the signal communications center operation company. When the operating platoons are ordered to displace, the platoon must tear down, load, and move the communications equipment to the new location in one echelon. The platoon leader must notify the signal unit providing trunk service when and where trunk facilities will be required at the new location.

a. During the displacement, communication support to the supported headquarters must not be disrupted. Communications service during the move can be provided as follows:

(1) Radio Set AN/GRC–46 can provide voice or CW communications during movement and RATT during halts.

(2) Radio Set AN/VRC–49 can provide voice communications with FM radio stations within range of the moving headquarters.

(3) Motor messengers can be used to deliver message traffic between the moving headquarters and other headquarters during displacement. In addition, motor messengers provide an excellent means for delivering messages between elements in the march column.

(4) During the actual motor march, the above communications means should be placed near the commander and staff vehicles to provide them communications service.

(5) Upon arrival at the new location, the above communications facilities will provide communications service until the communications center is completely installed and in normal operation.

b. The movement of the communications center will require the assistance of all personnel of the platoon. When the communications center has been relocated and is in operation, the platoon returns to normal duty shifts.

c. If possible, a reconnaissance of the new area should be made by the platoon leader and key personnel of the platoon to plan the installation of the new location. A reconnaissance will eliminate many problems that might arise if the area is not reconnoitered and advance plans are not made for the communications center installation.

CHAPTER 4
COMPANY ADMINISTRATIVE OPERATIONS

24. General

The organization and employment of the signal communications center operation company generates problems of command and administration. It is highly unlikely that all five of the operating platoons of this company will be operating in the same location. Thus, the dispersed character of the company will add to the difficulty of performing administrative functions. The company commander should exert every effort to visit each platoon as often as possible to coordinate operations and solve administrative problems. He should never become tied to company headquarters at the expense of performing command visits and inspections of platoon operations. In addition to command visits and inspections, the company commander must keep the platoon leaders advised of command policies and procedures. The most common method of coordinating subordinates is to issue timely orders and prepare and distribute a detailed SOP. Details of preparation of SOP's are contained in FM 24–16, Signal Orders, Records, and Reports.

25. Company Command Post

The company command post (CP) should be centrally located in relation to the operating platoons and collocated with one of the operating platoons. Locating the CP in this manner reduces the distance between the company CP and all operating platoons, thereby facilitating command and administration. The company commander is not provided with staff officers to assist him in the operation of company headquarters; thus, he must rely on his noncommissioned officers. The noncommissioned officers are the first sergeant, supply sergeant, motor sergeant, and mess steward.

26. Personnel Management

The platoons of the signal communications center operation company do not have administrative personnel to perform administrative functions. Thus, all personnel records must be maintained at the company CP. Because of this, there must be daily coordination between the platoon leaders and company headquarters. The platoon leaders must keep company headquarters advised of the current personnel situation such as personnel for duty, on sick call, duty rosters, morale, and general condition of the platoon. Conversely, the company commander must keep the platoon leaders advised on such personnel matters as leaves, pay, mail, promotions, citations, and rotation. The close coordination required can be accomplished through visits and use of the communications system. For details of communications for company administration, see paragraph 30.

27. Mess Management

When all operating platoons are collocated with company headquarters, a consolidated mess is established and operated. However, when the platoons are dispersed and attached to the headquarters or unit they support, mess personnel must be attached to augment the mess of the supported headquarters or unit.

a. Consolidated mess operations are under the direct supervision of the mess steward. Since communications support must be provided on a 24-hour basis, the mess steward must plan to feed the personnel of the operating platoons on the same basis.

b. When the operating platoons are dispersed, the number of mess personnel that can be attached to the headquarters or unit supported is limited. The fragmenting of mess personnel will depend on the situation and the need for attaching mess personnel to the unit or headquarters supported by the platoons. This must be coordinated with the supported units or headquarters. One method that may be used follows:

(1) Attach one cook with the four operating platoons that are not collocated with company headquarters.

(2) Attach the remaining cook and cook's helper with company headquarters and the platoon collocated with company headquarters.

28. Company Supply Operations

This acquisition and distribution of supplies are essential to the accomplishment of the company mission. The company commander must be familiar with the status of supplies and equipment within his organization and must plan the logistical support required for continuing operations. He must insure that company supply records are accurate and that supply procedures within the company will provide an adequate and steady flow of supplies to the operating platoons. The company commander is assisted in this function by the company supply sergeant. A consolidated supply activity is established at the company CP to insure that each operating platoon has its normal TOE equipment and is provided with adequate expendable supplies. The details of company supply may vary according to the deployment of the operating platoons; however, these procedures must conform to AR 735–35.

a. Company records are established and maintained for TOE property and individual clothing and equipment.

(1) Normally, the company property book is established and maintained by the supply activity at the company CP. Each platoon draws its normal equipment from the company supply activity on hand receipt. If the equipment becomes inoperative because of negligence or fair wear and tear, the equipment is disposed of and replacements are drawn according to the requirements of AR 735–35.

(2) The records of individual clothing and equipment also are maintained at the supply activity at company CP. Each individual soldier is issued clothing and equipment according to the appropriate table of allowance, and each soldier is responsible for the proper use and care of his individual clothing and equipment. Replacements are requested through the supply activity at the company CP.

b. Company records are not required for expendable supplies; however, the company commander should insure that each platoon exercises supply economy. Expendable supplies are requested by the operating platoons from the company supply activity at the company CP on an informal basis. The company supply sergeant consolidates these requests and forwards the consolidated supply request to the supply activity supporting the company. When the requested supplies are received at the company CP, they are segregated according to each platoon request and delivered to the platoons.

29. Equipment Maintenance

Maintenance of company equipment is the responsibility of the company commander. All commanders are required to insure that the equipment issued to their commands is used and properly maintained. The platoon leaders assume supervisory responsibility for equipment that is issued to their platoons, and the operators assume direct responsibility for the equipment they operate. The company commander, the platoon leaders, and the equipment operators all have specific responsibilities for the maintenance and care of Government equipment. These responsibilities are designated in appropriate Army Regulations in the 750–series. Company maintenance can be broken down into three areas—organization and employment of maintenance personnel, supply of repair parts, and maintenance inspections.

a. The maintenance personnel of the signal communications center operation company are organized and employed as follows:

(1) Each operating platoon is provided with a teletypewriter equipment repairman, a general crypto equipment repairman and a powerman. The repairmen remain with the operating platoons to perform immediate on-site direct support maintenance for the platoon. The powerman performs immediate on-site organizational maintenance for power equipment for the platoon.

(2) The company headquarters has one mobile electronic maintenance team consisting of a facsimile repairman, a senior radio repairman, and a radio repairman. This team is equipped to provide on-site direct support maintenance of facsimile and radio equipment for the operating platoons. This team can provide maintenance on a scheduled basis and on-call emergency maintenance as required. This team operates out of company headquarters and is under the supervision of the company commander.

(3) Organizational motor maintenance is performed under the direct supervision of the motor sergeant. It is performed at the company headquarters and in the operating platoon areas. This maintenance may be performed on a scheduled basis or it may be on-call emergency motor maintenance as required. Depending on the situation, it may be more economical to attach a wheeled vehicle mechanic and a mechanic's helper to each of the operating platoons to provide immediate on-site organizational motor maintenance. This may be a more workable solution when the operating platoons are widely scattered.

b. The repair parts supply procedures for the company will depend on the deployment of the platoons and the repair parts supply procedures of higher echelons of maintenance (4th echelon, general support). Normally, repair parts for the operating platoons are coordinated by the signal supply-parts specialists assigned to each platoon and to company headquarters. The signal supply-parts specialist of the platoons requests, identifies, and issues repair parts to the repairmen of each platoon. The platoon's requests for repair parts are forwarded to the signal supply-parts specialist at company headquarters. At company headquarters, the requests are consolidated and forwarded to the general support maintenance activity supporting the company. When the repair parts are received at company headquarters, they are segregated according to each platoon request and delivered to the platoons. When the operating platoons are widely scattered or when more than one general support maintenance unit or activity supports the platoons of the company, each platoon may request repair parts direct from the general support maintenance activity or unit supporting that platoon.

c. Signal maintenance inspections are conducted as prescribed by AR 750–8. These inspections provide a means for the company commander to insure that proper maintenance is being performed on all major items of organizational equipment. Maintenance inspections of the platoons should be conducted at a time that will not disrupt platoon operations. The platoon leader should be notified 12 hours in advance of the inspection when the inspection is to be formal; however, no notification is required when the inspection is to be informal.

30. Communications for Company Administration

Communications between company headquarters and the operating platoons is essential to efficient administrative operations. The type of communication required will depend on the type of message or report that is to be transmitted. Normally, the available means are—

a. FM Radio. The Radio Set AN/VRC–47, mounted in the commander's vehicle, can be used to enter the radio wire integration station or the headquarters net (FM-voice) operated by each of the operating platoons. This radio set affords the commander a means of contacting the platoons when he is away from the company CP, and provides a back-up to other communications means when the commander is located at the company headquarters.

b. Telephone and Teletypewriter Service. Each platoon is equipped with trunking circuits into the common-user communications system installed in the area of operations. This system provides the company CP with common-user telephone and teletypewriter service that connects the company CP with each of the operating platoons. This service is provided to company headquarters through the facilities of the operating platoon collocated with company headquarters.

c. Motor Messenger Service. Each platoon is provided with motor messenger teams that

can be used to deliver messages or reports between company headquarters and the operating platoons.

31. Unit Training

The combat effectiveness of the signal communications center operation company will depend on the training of the unit. This training will include individual, section, and platoon training. Normally, a soldier is first trained as a soldier and then as a specialist. Some specialists of the company are school-trained while others must be trained in the unit. Common specialists such as cooks, clerks, truck-drivers, and mechanics may be trained in unit schools, training centers, or service schools. However, these specialists must receive on-the-job refresher training to retain their skills.

a. A newly activated unit can obtain much of its training support from the G3 section of the post, camp, or station responsible for its training. This support will include training literature, training areas, training aids, and instructor support.

b. The company commander will be assisted in his training program by use of Army Training Programs (ATP's), Army Training Tests (ATT's), Field Manuals (FM's), and equipment Technical Manuals (TM's). The training literature applicable to the signal communications center operation company is contained in publication listed in appendix I.

32. Company Security

The security of the signal communications center operation company is a command responsibility. However, because of the deployment of the operating platoons, the company commander may require the platoon leaders to execute the security responsibility of each platoon. Security of signal installations is provided by the headquarters or unit supported. However, this does not relieve the company commander or the platoon leader of the responsibility for the protection of signal installations, signal equipment, or signal personnel. A security plan should be developed for the operating platoons, standardized as far as possible, and included in the company SOP. Some of the security aspects that must be considered are—

a. The camouflage or concealment for installations against air, ground, CBR, and nuclear attack.

b. The use of natural obstacles such as rivers, forests, swamps, and mountains.

c. The use of guard posts and alarm systems.

d. Protective measures to be taken before, during, and after nuclear, chemical, and biological attack.

33. Motor Movement

a. Normally, the movement of the signal communications center operation company, or separate platoons of the company, will be under the supervision and control of the movement officer of a higher headquarters. However, the company commander or platoon leader will be required to load his vehicles, form march column, and move as directed by the movement officer. To facilitate the movement of the company or separate platoons, a loading plan for company vehicles should be developed. An example of such a loading plan is shown in appendix II. This loading plan is not the only solution but is presented as a guide for the company commander and platoon leaders.

b. In addition to loading vehicles for the move, the company commander or platoon leader must coordinate details of the move with the movement officer. Normally, the movement officer will give the company commander or platoon leader such details as company or platoon position in the march column, time of march formation, initial point, route of march, rate of march and release point. However, the company commander or platoon leader must provide communications for the headquarters or unit supported during the move. This will require a detailed communications plan based on the communications requirements. The communications plan must be based on the use of motor messengers; FM voice radio AM voice radio, RATT or CW radio; and message center service.

34. Company Standing Operating Procedures (SOP)

An SOP is a set of tactical and administrative instructions which the commander wishes to make routine. SOP's are combat orders;

thus, the SOP eliminates the necessity for repeating the details of instructions in orders for each operation. Normally, an order will refer to the SOP unless the procedures for an operation are contrary to the procedures contained in the SOP. In such cases, the procedures must be detailed in the order.

a. The amount of detail in the SOP will depend on the training and experience of the unit. Normally, the initial SOP prepared during the training phase of the unit will be detailed, and as the unit becomes experienced the SOP becomes less detailed.

b. The SOP of a unit is based on the SOP of the next higher echelon of command. This is necessary to standardize procedures as much as possible.

c. The SOP of a unit should be continually revised and refined to eliminate unnecessary details and to change procedures to adjust to a change in organization, operations, or the tactical situation.

d. The details of preparation of the signal SOP are contained in FM 24–16.

APPENDIX I
REFERENCES

1. General

This appendix contains a selected list of army publications pertinent to the training and operations of the signal communications center operation company. Additional publications are listed in Department of the Army Pamphlets (DA PAM's) of the 310–series. Applicable equipment technical manuals are listed in appendix III.

2. Army Regulations

AR 320–5	Dictionary of United States Army Terms
AR 320–50	Authorized Abbreviations and Brevity Codes
AR 380–5	Safeguarding Defense Information
AR 735–35	Supply Procedures for TOE Units, Organizations and Non-TOE Activities
AR 750–8	Command Maintenance Management Inspections

3. Army Training Programs

ATP 11–137	Signal Communication Center Operation Company

4. Army Training Tests

ATT 11–137	Signal Communication Center Operation Company

5. Department of the Army Pamphlets (DA PAM's)

DA PAM 108–1	Index of Army Motion Pictures, Film-strips, Slides and Phono-recordings
DA PAM 310–1	Index of Administrative Publications
DA PAM 310–2	Index of Blank Forms
DA PAM 310–3	Index of Doctrinal, Training, and Organizational Publications
DA PAM 310–4	Index of Technical Manuals

6. Field Manuals

FM 11–86	Combat Area Signal Battalion, Army
FM 11–92	Corps Signal Battalion
FM 11–95	Army Signal Battalion
FM 21–5	Military Training
FM 21–6	Techniques of Military Instruction
FM 21–30	Military Symbols
FM 21–40	Small Unit Procedure in Chemical, Biological, and Radiological Warfare Operations
FM 21–41	Soldiers' Handbook for Chemical and Biological Operations and Nuclear Warfare
FM 24–16	Signal Orders, Records and Reports
FM 24–17	Tactical Communications Center Operations
FM 24–18	Field Radio Techniques
FM 24–20	Field Wire and Field Cable Techniques

APPENDIX II
MOTOR VEHICLE LOADING PLAN

1. General

a. This loading plan is offered as a guide to the company commander and platoon leaders and is intended only to illustrate that such a plan can be prepared using organic transportation. This loading plan does not show position of vehicles in the convoy nor the assignment of vehicles to company functional organizations. The plan merely shows one method of loading organic equipment and personnel for motor movement.

b. For the purpose of this plan, personnel weights have been established as 240 pounds. This standard has been established as the weight of the individual plus the following items of equipment when applicable: individual weapon, bayonet, binoculars, compass, flashlight, goggles, Tool Set TE–33, wristwatch, hand radio, individual portion of the basic load of ammunition.

2. Company Headquarters

a. The Signal Corps repair shop is mounted on a 2½-ton truck—included also is a trailer-mounted Generator Set Gasoline Engine PU–290/MR. Recommended loading plan is given below:

Number	*Item*
1	Decontaminating Apparatus.
1	Indicator Standing Wave Ratio AN/URM–120.
1	Modification Kit Electronic Equipment MK–345/GR.
3	Multimeter TS–352/U.
1	Multimeter ME–26/U.
1	Oscilloscope AN/USM–50.
1	Signal Generator SG–297/U.
1	Test Set Electron Tube TV–7/U.
1	Test Set Radio AN/VRM–( ).
1	Tool Kit Supplementary Radar and Radio Repair TK–87/U.
3	Tool Kit Radar and Radio Repair TK–87/U.
3	Personnel.

b. The Truck Cargo 2½-ton with water trailer is loaded as follows:

Number	*Item*
1	Decontaminating Apparatus.
1	Waterbag Sterilizing.
1	Cooking Outfit Field
1	Heater Immersion 37½ in. long.
12	Heaters Immersion 30 in. long.
11	Food Containers Insulated.
5	Range Outfit Field Gasoline.
2	Tableware Outfits Field.
1	Tent Kitchen.
1	Accessory Outfit Range.
1	Generator Set.
1	Light Outfit (25 outlets).
3	Personnel.

c. The Truck Cargo 2½-ton with trailer is loaded as follows:

Number	*Item*
1	Decontaminating Apparatus.
1	Decontaminating Chemical Kit.
2	Waterbags.
4	Space Heaters.
1	Duct Heater.
1	Paulin and Frame Maintenance.
1	Toolkit Automotive Maintenance.
1	Screen Latrine.
1	Tent General Purpose.
3	Personnel.

d. Two additional Trucks Cargo 2½-ton with trailers are required to make the company headquarters 100 percent mobile. If the two additional trucks are not furnished for a move, the two above 2½-ton trucks will have to make two trips to completely move company headquarters. The following equipment remains to be loaded and moved:

Number	*Item*
1	Drafting Equipment.
1	Sprayer.
1	Machinegun.
1	Grenade Launcher.
1	Tripod Mount.
1	Toolkit Organizational Maint No. 1 Common.
1	Cabinet Tool and Spareparts.
1	Barber Kit.
2	Case Field Office Machine.
2	Desks Field.
20	Panel Markers Aerial.
1	Guidon Nylon and Wool Bunting.
2	Safes—2 shelves.

Number	Item
1	Tent General Purpose.
1	Tool Kit Armorer.
2	Typewriters.
2	Tables Folding Legs.
9	Personnel.

3. Communications Center Platoon Headquarters

a. The Truck Utility ¼-ton 4x4 with trailer is loaded as follows:

Number	Item
1	Decontaminating Apparatus.
1	Detector Kit Chemical Agent.
1	Chest CY–64/U.
1	Radiac Charger.
1	Radiacmeter.
2	Personnel.

b. The Truck Cargo ¾-ton with trailer is loaded as follows:

Number	Item
1	Tent General Purpose.
1	Stove Gasoline Burner.
1	Cook Set Field.
1	Decontaminating Apparatus.
1	Toolkit Automotive Maintenance.
1	Toolkit Electricians No. 2.
1	Chest CY–64/U.
1	Multimeter AN/URM–105.
1	Machinegun with Mount.
1	Radiacmeter.
2	Personnel.

4. Communications Center Operation Section

a. Six Trucks Utility ¼-ton with trailers are loaded to haul the following:

Number	Item
6	Decontaminating Apparatus.
2	Grenade Launchers.
2	Case Field Office Machine.
3	Tables Folding.
2	Typewriters Nonportable.
1	Cook Set Field.
1	Stove Gasoline Burner.
12	Personnel.

b. Truck Cargo 2½-ton mounting the Message Center AN/GSQ–80 with Trailer-Mounted Generator Set Gasoline Engine PU–294/U is loaded as follows:

Number	Item
1	Decontaminating Apparatus.
1	Safe 2 Shelves.
1	Case BC–5.
2	Cipher Machine TSEC/KL–7.
1	Converter Signal Data CV–2/TX.
1	Facsimile Set AN/TXC–1.
1	Tape Reader TSEC/HL–1.
1	Adapter Keyboard TSEC/KLX–7.
1	Chain Assembly.
3	Personnel.

c. Truck Cargo 2½-ton mounting Terminal Telegraph AN/MSC–29 with Trailer-mounted Generator Set Gasoline Engine PU–294/U is loaded as follows:

Number	Item
1	Decontaminating Apparatus.
1	Safe with Shelves.
2	Tool Kits Teletype Equipment TE–50.
4	Cable Assembly CX–4566/G (250 ft).
2	Multimeter TS–352/U.
5	Electronic TT Security Equipment TSEC/KW–7.
1	Test Set Teletypewriter TS–2/TG.
1	Test Set TV–7/U.
3	Personnel.

d. One additional Truck Cargo 2½-ton with trailer is required to make this section 100 percent mobile. 16 personnel of this section plus 2 personnel from the telephone and switching sections must be transported in a non-TOE vehicle.

5. Telephone and Switching Section

a. The ¾-ton truck with trailer is loaded as follows:

Number	Item
1	Decontaminating Apparatus.
1	Tool Equipment Telephone Electrician TE–49.
3	Tool Kit Lineman Construction TE–21.
1	Reeling Machine Cable Hand RL–31.
1	Reeling Machine Cable Hand RL–278.
1	Multimeter TS–352/U.
5	Wire WD–1/TT on RL–159/U.
100	Telephone Sets TA–312/PT.
1	Test Set Electron Tube TV–7/U.
3	Personnel.

b. The Truck Cargo ¾-ton mounting the Patch Panel SB–611/MRC with trailer is loaded as follows:

Number	Item
1	Decontaminating Apparatus.
2	Cable Assembly Telephone CX–4566/G (250 ft).
1	Distribution Box.
1	Cook Set Field.
1	Stove Gasoline Burner.
3	Personnel.

c. The Truck Cargo 2½-ton mounting the Central Office Telephone Manual AN/MTC–3

with Trailer-mounted Generator Set Gasoline Engine PU–294/G is loaded as follows:

Number	*Item*
1	Decontaminating Apparatus.
1	Grenade Launcher.
2	Cable Assemblies CX–4566/G (250 ft).
1	Switchboard SB–22/PT.
3	Personnel.

6. Radio Section

a. Truck Cargo ¾-ton mounting Radio Set AN/VRC–49 with trailer-mounted 3 KW Generator Set Gasoline Engine is loaded as follows:

Number	*Item*
1	Decontaminating Apparatus.
1	Radio Control Group AN/GRA–39.
1	Radio Control Group AN/GRA–23.
1	Cook Set Field.
1	Antenna AT–791/G.
1	Stove Gasoline Burner.
3	Personnel.

b. Truck Cargo ¾-ton mounting Radio Set A/GRC–46 with trailer-mounted 3 KW Generator Set Gasoline Engine is loaded as follows:

Number	*Item*
1	Decontaminating Apparatus.
1	Electronic Security Equipment TSEC/KW–7.
1	Safe—2 Shelves.
1	Radio Set Control Group OA–1754/GRC.
1	Radio Control Group AN/GRA–23.
1	Reeling Machine Cable Hand RL–39.
2	Wire WD–1/TT on DR–8.
2	Personnel.

APPENDIX III

CHARACTERISTICS OF MAJOR ITEMS OF EQUIPMENT

Nomenclature	Description	Major components	Remarks
Telegraph Terminal AN/MSC-29 TM 11-2225 TM 11-5805-262 TM 11-5815-206 TM 11-5895-205	A mobile TT terminal providing 8 full-duplex nonsecure voice frequency TT circuits or 2 full-duplex or 4 half-duplex secure TT circuits (or any combination thereof).	S-176/MSC-29 TA-182/U F-98/U H-144/U SB-22/PT TA-221/PT TA-222/PT TT-4( )/TG TT-76( )/GGC TH-5/TG PU-294/G	Installed in Shelter S-176/MSC-29 and includes Trailer-mounted Power Unit PU-294/G. Shelter can be mounted on 2½-ton truck. Weight 9800 lbs. Includes shelter and trailer-mounted power unit.
Central Office Telephone Manual AN/MTC-3 TM 11-2134 TM 11-4134 TM 11-5805-202-15	A mobile, two-position manual central office capable of terminating 120 circuits.	S-175/MRC-3 SB-86/P TA-207/P PU-294/G CX-4566/G	Installed in Shelter S-175/MTC-3 and includes Trailer-mounted Power Unit PU-294/G. Shelter can be mounted on a 2½-ton truck, normally used in conjunction with Patching Panel SB-611/MRC. Weight 7798 includes shelter and trailer-mounted power unit.
Patching Panel SB-611/MRC TM 11-5805-204-15	A mobile patching panel and necessary items to provide circuit patching and testing.	S-171/MRC Patch Panel Patch Cords TA-312/PT TS-140/PCM TS-297/U TT-4( )/TG TH-5/TG SB-22/PT	Installed in Shelter S-171/MRC. Shelter can be mounted on a ¾-ton truck. External power source is required. Weight 1831 includes shelter.
Switchboard SB-86/P TM 11-2134	A transportable, single-position, local battery field switchboard. Can terminate 30 lines, and with an auxiliary jack field section, can terminate 60 lines.	SB-248/P TA-207/P SP-990/G H-91/U	Two switchboards SB-86/P make up the major components of the AN/MTC-3. Weight 172 lbs.
Switchboard SB-22/PT TM 11-5805-262	A portable, local battery monocord switchboard capable of terminating 12 circuits.	N/A	Switchboards can be stacked to provide additional capacity. 2 boards-29 circuits. 3 boards-46 circuits. Weight 36 lbs.
Facsimile Set AN/TXC-1 TM 11-2258 TM 11-489	Transmits or receives pictures, maps, or written messages in page size up to 12" x 18". Transmit time for full page is 20 minutes.	TT-1( )/TXC-1 PP-86( )TXC-1	Normally requires the use of a Converter CV-2/TX. Weight 133 lbs.
Radio Set AN/VRC-47 TM 11-5820-401-10	A manually tuned FM vehicular-mounted radio set. Includes 1 RT-524/VRC and 1 R-442/VRC.	RT-524/VRC R-442/VRC MT-1029/VRC MT-1898/VRC AT-912/VRC	Requires 24 volt power source. Power output 25-35 watts. Range 24-32 km. Frequency 30-75.95 mc. Weight 132 lbs.

CHARACTERISTICS OF MAJOR ITEMS OF EQUIPMENT—Continued

Nomenclature	Description	Major components	Remarks
Radio Set AN/VRC–49 TM 11–5820–401–10	A manually tuned FM radio set vehicular-mounted. Includes 2 Receiver Transmitters RT–524/VRC.	RT–524/VRC MT–1029/VRC AN–1780/VRC AT–912/VRC	Can be mounted in Shelter S–89/G or Shelter S–144/G. Normally used as RWI station. Power output range and frequency same as AN/VRC–47. Weight 212 lbs.
Radio Set AN/GRC–46 TM 11–5815–204	A mobile AM radio set that provides voice, CW, and FSK radioteletypewriter operation.	AN/GRC–19 CV–278/GR MD–203/GR TT–98B/FG TT–76/GGC	Set is mounted in Shelter S–89/G or S–144/G. Range 80 km (ground wave) and 1600 km (sky wave). Frequency 0.5—32 mc. Weight 1050 lbs.
Message Center AN/GSQ–80	A modified shelter S–141/G to provide power and signal entrance boxes. A folding chair and table are provided. Separate Generator Set Gasoline Engine must be provided.	S–141/G	Power circuits and signal circuits are provided in separate metal ducts. Power circuits are routed through circuit breakers for each individual circuit.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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NG: State AG (3); Units—same as Active Army except allowance is one copy to each unit.

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For explanation of abbreviations used, see AR 320-50.

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