FM 11-92

DEPARTMENT OF THE ARMY FIELD MANUAL

CORPS SIGNAL BATTALION
AND
AIRBORNE CORPS SIGNAL BATTALION

HEADQUARTERS, DEPARTMENT OF THE ARMY
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CORPS SIGNAL BATTALION

AND

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*This manual supersedes FM 11-92, November 1959.

PART ONE

CORPS SIGNAL BATTALION

CHAPTER 1

GENERAL

1-1. Purpose

This manual provides doctrinal guidance for the tactical employment of two types of signal battalions. One is the *corps signal battalion* organized under TOE 11-15. The other is the *airborne corps signal battalion* organized under TOE 11-225.

1-2. Scope

a. Corps Signal Battalion. Part One of this manual covers the corps signal battalion. It encompasses signal battalion operations that produce a signal communications system for command and control of a corps.

b. Airborne Corps Signal Battalion. Part Two pertains to the airborne signal battalion. It embraces signal battalion operations that establish a signal communications system for command and control of an airborne corps.

1-3. Environment

This manual deals principally with two sets of circumstances. Part One discusses primarily the corps signal battalion when its corps is part of a field army that conducts its operations on a large landmass. Part Two envisions the airborne corps signal battalion when its corps, as a whole, engages in large scale airborne operations for a higher headquarters.

a. Corps Operations. The signal battalions described are designed to provide combat support for corps that are attached to field armies for their operations. When the corps to which either of these battalions is assigned operates as an independent corps, the requirements for corps signal communications increase so much that they greatly exceed the capabilities of the signal battalion. To satisfy the specific communications requirements generated by the independent corps or airborne corps mission and organization, the corps signal battalion or airborne corps signal battalion is made part of a signal group (para 3-8*c*) that has communications capabilities similar to those of a field army signal brigade. Other special corps operations also may exceed corps signal battalion capabilities. To satisfy the specific special requirements in these instances, either battalion may need augmentation by additional units (as in para 3-8*a*(5) and 4-7*e*, for example).

b. Field Army Operations. The field army area communications system has a direct effect on the configuration of the corps and airborne corps communications systems. Consequently, it affects the operations of the corps signal battalion and the airborne corps signal battalion. Therefore this manual includes a brief discussion of the field army area communications system to show the interrelationships. It also indicates major elements of the field army command communications system.

c. Other Environmental Factors. The material contained herein is applicable to general war, including a consideration for the employment of and protection from nuclear munitions, and chemical, biological, and radiological agents. It is applicable also to limited war and to cold war, including stability operations, with the proviso that certain functions in such operations may cause the corps signal battalion to sharply reduce its corps signal communications capability (para 3-17).

1-4. References

Publications enumerated in the appendix provide detailed information related to material presented herein. A complete understanding of corps signal battalion operations, airborne corps signal battalion operations, and other activities that support such operations requires study of these references in conjunction with this field manual.

1–5. User Comments

Users of this manual are encouraged to submit recommended changes or comments designed to improve its clarity or accuracy. Comments should be prepared in accordance with AR 310–3 and keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and to permit complete evaluation. Comments should be forwarded direct to Commanding Officer, US Army Combat Developments Command Communications-Electronics Agency, ATTN: Chief, Doctrine Division, Fort Monmouth, New Jersey 07703. 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.

CHAPTER 2

CORPS SIGNAL COMMUNICATIONS

2–1. Introduction

This chapter is a general discussion of the corps signal communications system. It is a basis for presentation in subsequent chapters of the corps signal battalion mission, organization, capabilities and limitations, and methods of operation. More detailed information pertaining to corps signal communications procedures and techniques may be found in the publications enumerated in the appendix.

2–2. Signal Communications Requirements

a. Basic Requirement. The basic requirement of a tactical signal communications system is the support of a unit's combat operations. To satisfy this requirement, the system must provide for rapid, reliable, secure interchange of information and orders within and between echelons of the headquarters it serves and between this headquarters and those of major subordinate units (FM 24–1). Further, the system must operate continuously during the supported combat operation.

b. Flexibility. To be continuously responsive to a supported unit's operational needs, a signal communications system must be flexible. This requires the capabilities of the system to include provision for rerouting message traffic around destroyed portions of the system, for reducing message traffic overloads anywhere in the system, and for adequate means of reentry into the system by displaced headquarters of major subordinate units.

c. System Design. A tactical signal communications system must be designed according to the specific requirements of the combat operation it supports. At the one extreme, a system that is too austere is likely to cause a breakdown in command and control because it cannot accommodate essential communications traffic. At the other extreme, a system designed to process more than the essential load of communications traffic can exceed the capabilities of authorized signal personnel and equipment. This latter condition is likely to reduce the effectiveness of the system to an unsatisfactory level.

d. Communications Conservation. Although close combat and fire support elements are the primary sources of combat power in a unit, important elements of combat power are provided by combat support units (FM 100–5). The tactical signal communications system is one of such sources of combat power. As such, its use must be subject to the same command discipline as is the use of weapons, ammunition, and supporting materiel. A commander, for example, must prevent the introduction of unnecessary messages into his communications system, where the handling of these messages would waste signal communications effort that otherwise would be expended on necessary combat support.

2–3. Field Army Signal Communications

a. Field Army Command Communications System. Units of the field army signal brigade install, operate, and maintain a field army command communications system (FM 11–75, FM 11–95). This system has multichannel communications (FM 24–1), radio teletypewriter (RATT), and messenger facilities. These facilities interconnect the field army main and alternate signal centers and extend from these signal centers direct to headquarters of major subordinate commands such as the corps. Field army signal brigade units normally furnish the teams and equipments, at the subordinate headquarters, required to terminate the field army command communications system. The corps signal battalion, however, furnishes the corps RATT team and station in the army air

request net. Field army command communications links direct to corps signal centers normally consist of

(1) *Multichannel radio.*

(*a*) Army main to corps main signal center—24 channels.

(*b*) Army alternate to corps alternate signal center—24 channels.

(2) *Radio teletypewriter.*

(*a*) Army command net with stations at army main, army alternate, and the corps main signal center of one corps.

(*b*) Army air request net with net control stations at army main and army alternate signal centers. A corps station (provided by the corps signal battalion) and a division station (provided by the division signal battalion) for each division of this corps are the subordinate stations in one of these army air request nets.

b. Field Army Area Communications System. The field army signal brigade establishes an area communications system that is used by corps to supplement the corps signal communications system. This area communications system is a system of area signal centers so situated throughout the army area that a major subordinate headquarters located anywhere in the corps rear area or the field army service area has ready access to the signal communications facilities of one of the centers. These area signal centers are interconnected by multichannel communications facilities in a manner that permits routing from one area signal center to another through a variety of paths (fig. 2–1).

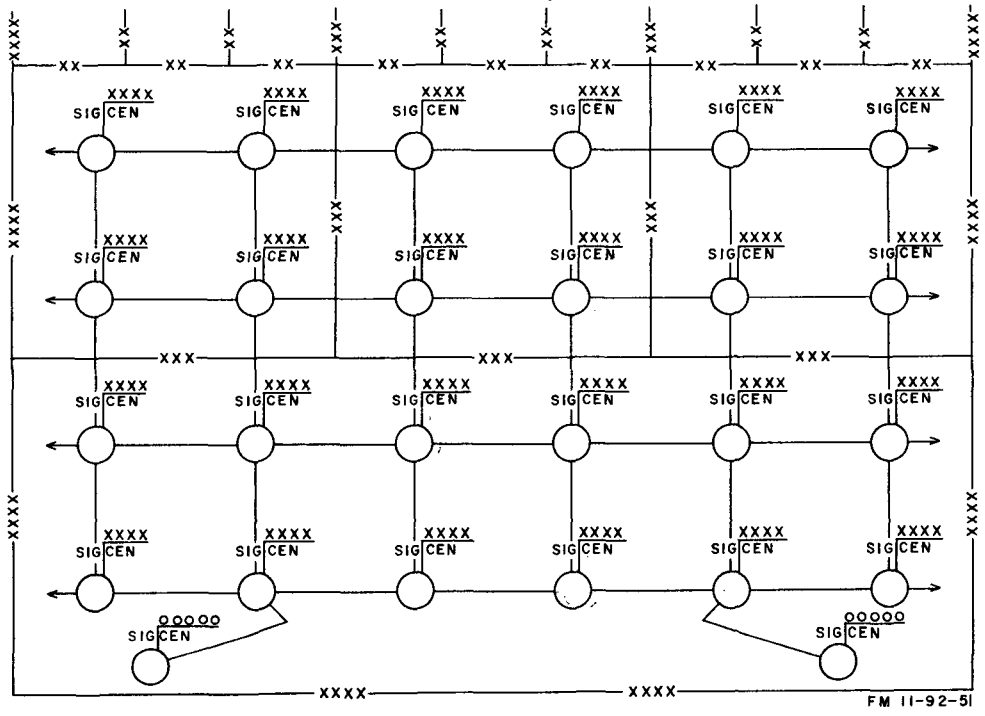

Figure 2–1. Field army area communications system.

c. Field Army Area Signal Centers. Each field army area signal center provides local and trunking facilities for headquarters located in its area of responsibility. For this reason, these signal centers are located at sites determined according to using unit population densities rather than in the symmetrical pattern used in figure 2–1 for illustrative purposes. The trunking facilities employ multichannel radio primarily, but may also use multichannel wire or combinations of the two, with terminal and switching equipments at each area signal center. Headquarters of major tactical commands in the combat zone (for example, corps and divisions) make use of the army area communications system as required and authorized to supplement their own signal communications facilities (fig. 2–2). Field army signal

troops provide the multichannel terminal equipment and personnel required at corps and division headquarters to permit their entry into the field army area communications system through one or more of the army area signal centers.

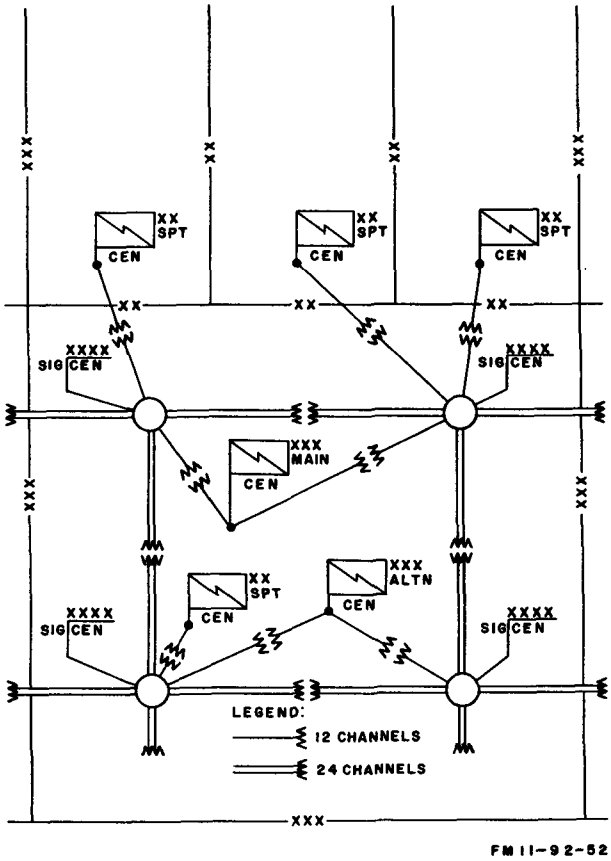

Figure 2-2. Corps and divisions in part of a field army area communications system.

2-4. Corps Signal Communications

a. Corps Signal Officer. The corps signal officer usually has the corps commander's delegated authority to exercise operational control over the signal units that are assigned or attached to the corps, when such units are not further assigned or attached to subordinate commands of the corps. Employment of corps signal communications is under the staff supervision of the corps signal officer. Also, it is normal practice for the corps signal officer to provide technical staff supervision over the signal communications of corps subordinate units. To assist him in these functions, the corps signal officer has a staff signal section provided by the corps headquarters TOE 52-1. The staff responsibilities and relationships of the corps signal officer, the organization of his signal section, and the functions of his staff assistants are discussed in considerable detail in FM 11-20. Responsibilities common to all staff signal officers with respect to the coordination of tactical communications are explained in detail in FM 24-1. A generalization of these common responsibilities is that the staff signal officer provides the commanding general and his staff and subordinate commanders with the staff assistance described in (1) through (3) below.

(1) Advice on all signal matters, including headquarters locations and arrangements, communications security, and communications system design and layout.

(2) Plans, orders, and other instructions for signal troop requirements and employment.

(3) Technical supervision of signal communications, including control of radio frequencies, signal training of all units, and all training of signal units.

b. Corps Signal Communications System. The corps signal communications system primarily is a command-oriented multichannel communications system. This system provides communications from corps headquarters direct to attached divisions and other major subordinate headquarters, and from corps artillery headquarters to major subordinate corps artillery organizations. The system is superimposed on the field army area communications system (para 6-4*a*, fig. 2-3). Operating in conjunction with these interconnected multichannel systems are the corps RATT nets and messengers who use both ground and air vehicles. The resulting configuration makes possible the satisfaction of corps signal communications requiements (para 2-2).

2-5. Signal Centers

a. Corps Signal Centers. Signal communications for corps headquarters is provided through signal centers established on the basis of one for each echelon of the headquarters. These signal centers primarily are command signal centers (para 2-4*b*). Nonetheless they

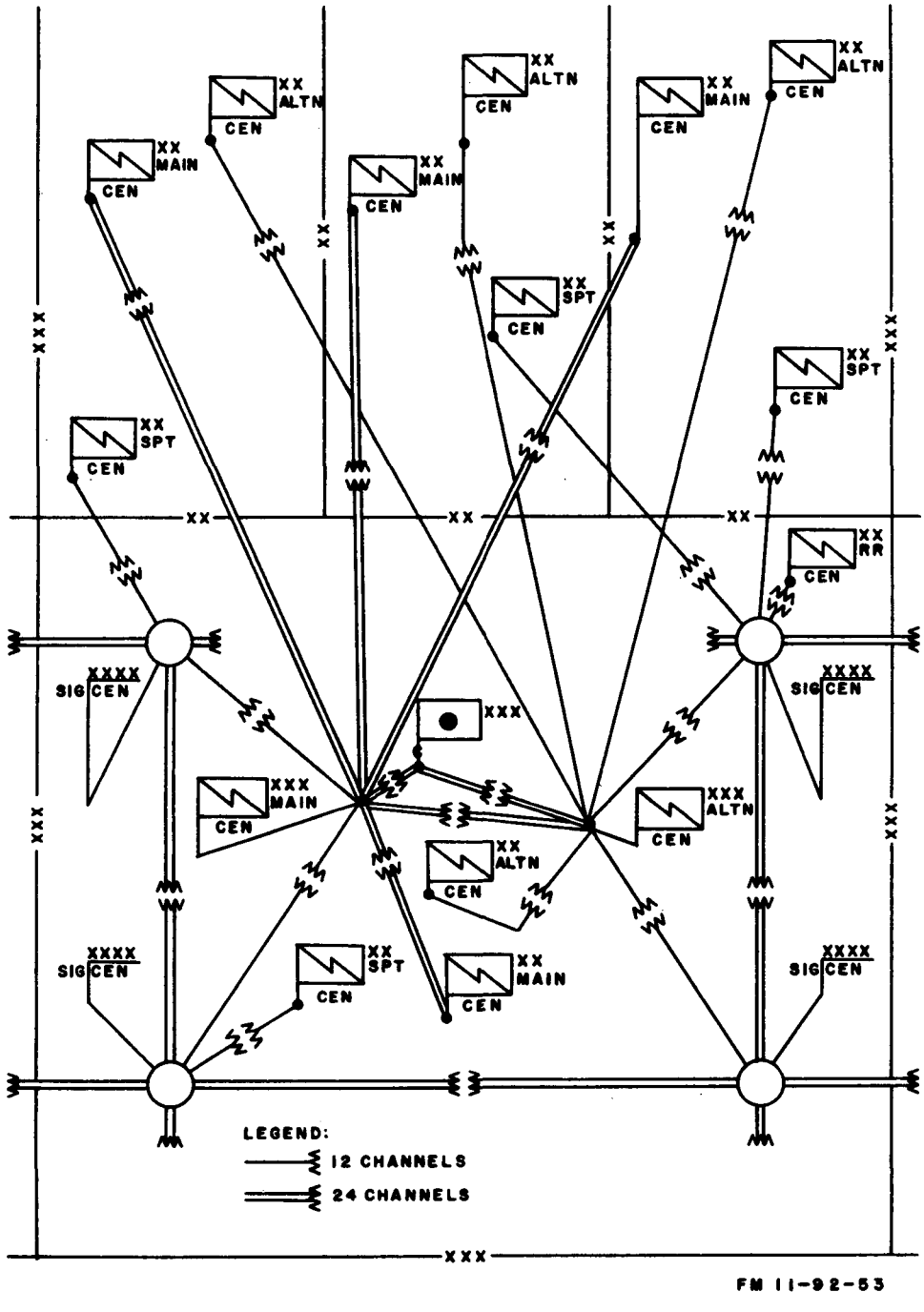

Figure 2–3. Corps multichannel communications system interconnected with field army area communications system.

may provide limited signal center accommodations for corps elements in the immediate vicinity, when this is necessary to supplement the organic communications capabilities of such units.

b. Signal Center Facilities. As indicated in figure 2–4, the signal communications centers and varieties of other signal communications facilities installed at the corps main and alternate signal centers are similar. These are

the principal and most complex of the corps signal centers. When the commanding general establishes a tactical command post apart from corps main and alternate, additional signal center facilities (fig. 2–5) may be installed as required. The same types of corps signal center facilities may be required in instances when a corps rear echelon is established forward of the corps rear boundary.

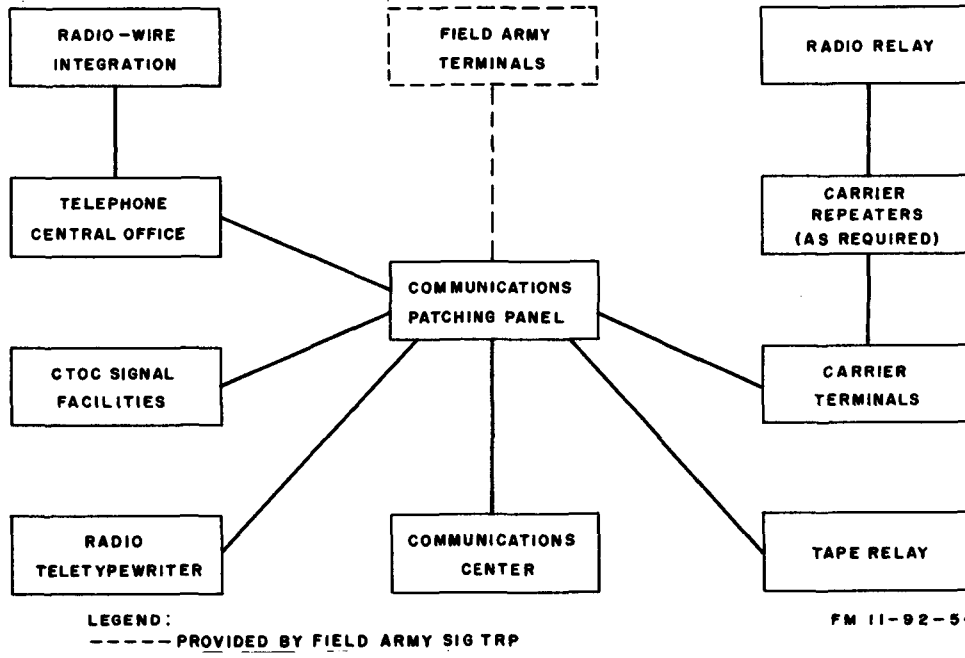

Figure 2–4. Typical signal communications facilities at corps main and alternate signal centers.

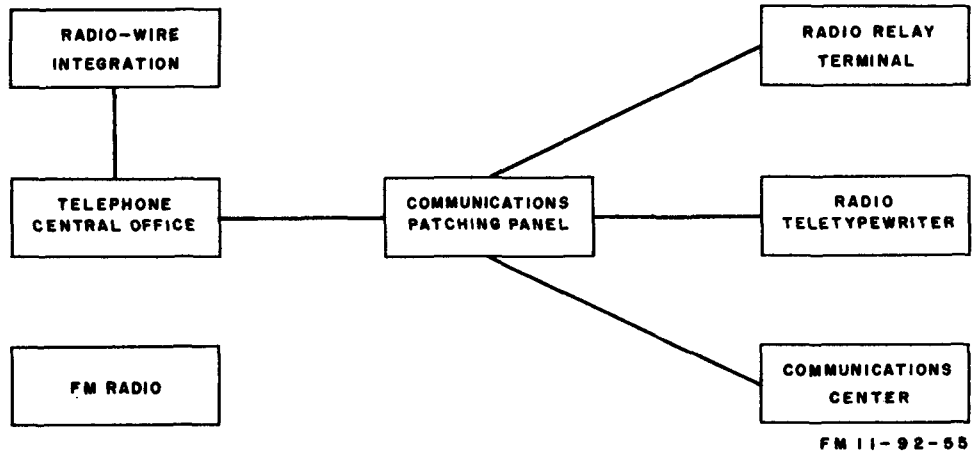

Figure 2–5. Typical signal communications facilities at corps tactical command post or rear echelon signal centers.

c. Corps Signal Facilities at Subordinate Headquarters. Some of the corps signal communications facilities of the types installed in the corps signal centers are required at other headquarters within the corps organization. Examples of these are the corps signal facilities provided at corps artillery headquarters (fig. 2–6), at the headquarters of corps field artillery units, and at signal centers of divisions attached to the corps.

2–6. Trunking Systems

a. General. In this paragraph, discussion is limited to trunks established over multichannel communications systems. These systems may be those of either the army area com-

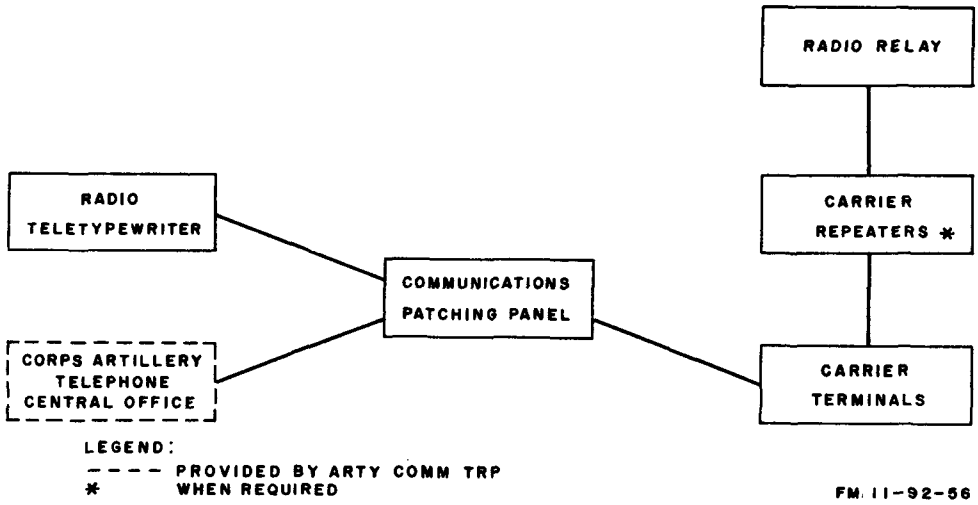

Figure 2–6. Typical corps signal communications facilities at corps artillery headquarters.

munications system or the corps communications system, as indicated in the discussion.

b. Corps Trunks. Trunks are established over the command multichannel communications systems (para 2–4*b* 6–4*a*) that extend between echelons of corps headquarters and from corps headquarters direct to major elements of the corps (fig. 2–3). In addition to corps artillery and attached divisions, the combat elements to which corps command multichannel systems carry trunks include a separate brigade, an armored cavalry regiment, and an army aviation group. Figure 2–7 indicates the corps systems terminating at corps main signal center. Corps systems terminating at corps alternate signal center usually provide only 24 channels (two 12-channel systems) from corps main signal center and from corps artillery headquarters, and 12-channel systems from division alternate signal centers (para 6–4*a*, fig. 2–3). Corps trunks to major subordinate units may be established also through the field army area communications system (fig. 2–2). For example, corps trunks to the ADA group, are established through the field army area communications system. When corps command systems are disrupted, trunks through the army area system may become the principal trunking facilities for the corps communications traffic load.

c. Corps Artillery Trunks. Corps multichannel signal facilities established directly between corps artillery headquarters and the headquarters of the corps field artillery organizations are used for corps artillery communications trunks. Normally, these organizations include four field artillery groups, a field artillery target acquisition battalion, and a field artillery missile battalion (fig. 2–8).

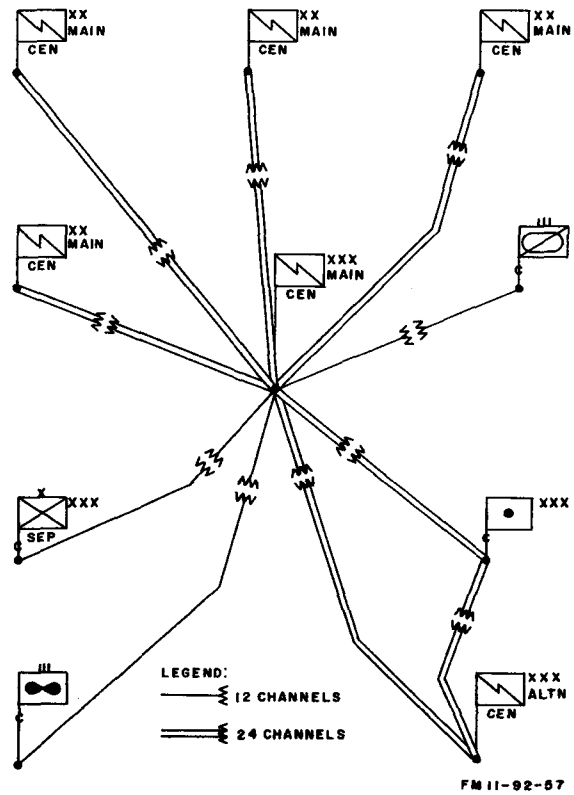

Figure 2–7. Corps multichannel communications systems terminating at corps main signal center.

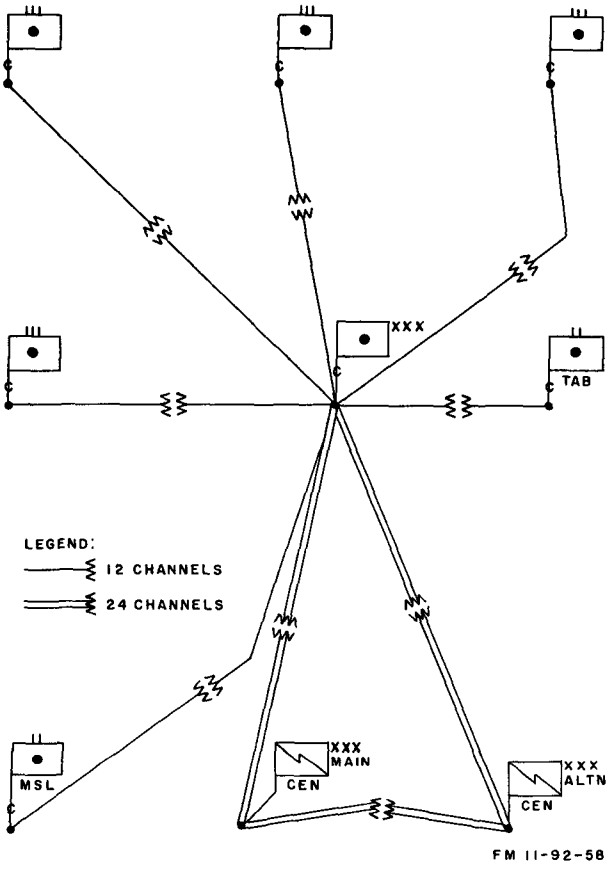

Figure 2–8. Corps multichannel communications facilities interconnecting corps artillery headquarters and corps field artillery organizations.

d. Field Army Trunks. Trunks from field army headquarters are established over both the field army area communications system (fig. 2–2) and the field army command system that provides a direct link between field army and corps headquarters. At the corps signal centers where the field army systems are terminated, field army signal troops provide and operate the terminal facilities and interconnect them with the corps signal center facilities (fig. 2–4). Lateral trunks between the corps of a field army usually are established by the field army signal brigade, through the field army command or area multichannel communications system (fig. 2–1, 2–2, and 2–3).

2–7. Telephone Central Office Facilities

a. Switchboards. As indicated in figures 2–4 and 2–5, a corps telephone central office is installed as part of the signal center at each echelon of corps headquarters. Each central provides telephone subscriber switchboard service for the headquarters served by the signal center. Each central also terminates corps and field army trunk circuits and provides for use of these circuits by subsscribers as required. In addition, the corps tactical operations center (CTOC) signal facilities at corps main and alternate signal centers include a telephone central office at each CTOC to provide switchboard service for subscribers on duty in the CTOC.

b. Telephones. Telephone instruments for use by subscribers authorized local service on the corps signal center switchboards are provided by the corps signal organization. These telephones are connected to the switchboards through local wire lines constructed by members of the corps signal battalion.

2–8. Teletypewriter Switching Facilities

Teletypewriter terminals employed in the corps signal communications system can provide extremely limited teletypewriter switching facilities. These terminals are operated at corps signal centers (para 2–14*d*).

2–9. Teletypewriter Tape Relay Network Facilities

a. Tape Relay Networks. The basic purpose of teletypewriter tape relay networks is to provide communications among headquarters throughout the world. To support these headquarters, either directly or through other communications systems, certain tape relay network stations are located where they can most effectively provide such support. These stations are called tributary stations or, under certain circumstances (*b* below), terminal stations. They provide interface between the supported headquarters and tape relay stations. The tape relay stations move message traffic from one general area to another within a theater (theater tape relay network) or between theaters and nations throughout the world (worldwide tape relay networks). These tape relay networks provide main traffic routes that can accommodate high volumes of long-

distance fast-moving traffic. Exchange of message traffic between these main traffic routes is provided by the tape relay stations. Exchange of message traffic going from headquarters in a theater tape relay network to headquarters in worldwide tape relay networks is accomplished at designated refile points. The same applies for exchange of message traffic to headquarters served by communications systems other than tape relay networks. Message refiling, a relatively simple process, consists essentially of changing the routing indicators.

b. Tape Relay Network Stations. There are three basic types of tape relay network stations: tape relay, terminal, and tributary.

(1) *Tape relay stations.* Tape relay stations are the interconnecting points between the main traffic routes of a tape relay network. These tape relay stations have a number of general functions. They relay message traffic already in the tape relay system from one tape relay station to another along the main traffic routes, they provide access points for message traffic entering the main traffic routes from local or manually operated teletypewriter systems (originating messages), and they provide exit points for message traffic leaving the main traffic routes to enter local or manually operated systems (terminating messages). All messages handled by a tape relay station are received or transmitted at the station in the form of teletypewriter perforated tape. Tape relay stations do not handle page copies of messages, nor do they originate or terminate messages other than service messages pertaining to traffic handling. Therefore, each tape relay station must have *one* associated terminal station to perform such functions.

(2) *Terminal stations.* A terminal station is a tape relay network station that supports a tape relay station. It also may support headquarters and units that may be in the vicinity. This station receives and processes terminating and originating messages for transmission, delivery, or refile. It is always associated with a tape relay station, regardless of whether or not there are nearby headquarters that require its support.

(3) *Tributary stations.* A tributary station is a tape relay network station that supports headquarters or units that are not supported by a terminal station. This station receives and processes originating and terminating messages for transmission, delivery, or refile in the same manner as does a terminal station.

c. Tape Relay Network Operation. Tape relay network operation is the receiving, processing, and transmitting of taped messages over teletypewriter circuits, using tape relay network operating procedures (ACP 127). This kind of operation requires transformation of the page copy of an originating message to perforated tape for transmission to a tape relay station. Such processing may be done at a terminal station or a tributary station. At the tape relay station, the message enters the main route (*a* above) circuits through which it is relayed from one tape relay station to another toward its ultimate destination. When the message arrives at the tape relay station that serves the area in which the addressee is located, it leaves the main routes and is transmitted from the tape relay station to the terminal or tributary station where it is transformed again to terminating message page copy for processing before delivery to its addressee.

d. Tape Relay Routing Indicators. The destination of a message on a tape is shown by the routing indicators punched at the leader end of the tape and transmitted in the message heading. As the taped message moves along the circuits toward its destination, these indicators determine its routing. The routing of tapes within a tape relay station requires the same accurate and expeditious handling as does any other form of message in a communications center.

e. Corps Tape Relay Facilities. Teletypewriter tape relay facilities operate at corps main and corps alternate signal centers (fig. 2-4). These facilities normally function as tributary stations in the field army tape relay network. The normal designation of the corps tape relay network stations as tributaries would be accomplished by field army signal orders. The purpose of such designation would be to preclude the use of corps command communications circuits for field army tape relay traffic that does not involve the corps. The

principal purpose of these corps stations is to pass tape relay traffic originating or terminating at corps headquarters. This is traffic going to or coming from field army headquarters, division headquarters, and headquarters of units supporting or supported by corps when such units have access to a terminal or tributary station in the network. Field army main and alternate signal centers and designated army area signal centers have tape relay stations in the field army tape relay network. Each division has a tributary station in this network. Normally this station is connected into the network through circuits to a tape relay station at one of the army area signal centers. In unusual emergency situations, field army may designate one of the corps stations as a tape relay station. The purpose of such designation would be to provide for relay of tape relay network traffic to one or more division tributary stations over corps command communications systems. Orders from field army would direct such usage of corps circuits in conjunction with the added tape relay station responsibility.

2–10. Multichannel Wire Communications Facilities

Multichannel wire communications uses multiplexer (wire carrier) equipments, and repeaters as required, with field cable or open wire to transmit or receive telephone, teletypewriter, television, facsimile, and data signals simultaneously over a single wire path (FM 24–1). The corps communications system may have limited multichannel wire communications facilities. In the corps communications system, however, the multiplexer and repeater equipments primarily are used in corps multichannel radio communications (para 2–11, fig. 2–4, 2–6).

2–11. Multichannel Radio Communications Facilities

Multichannel radio communications uses multiplexer (wire carrier) and radio equipments in various combinations to transmit or receive telephone, teletypewriter, television, facsimile, and data signals simultaneously over a single radio path (FM 24–1).

a. Requirement. Signal communications direct from corps signal centers to major combat elements of the corps are established through trunk circuits completed by means of multichannel radio communications systems (fig. 2–7). In corps multichannel communications systems, multichannel radio usually is the sole means of completing such trunk circuits.

b. Multichannel Radio Terminal Facilities. Every multichannel radio system in the corps command communications system (fig. 2–7, 2–8) terminates at both ends in corps-operated multichannel radio communications equipments. Either multichannel radio terminal or radio repeater sets may be used as terminal facilities. Radio terminal sets have multiplexer components, but when radio repeater sets are employed as terminal facilities, separate carrier repeater and multiplexer equipments must be provided. As a general rule, the equipments used to terminate multichannel radio systems at the superior headquarters signal centers are radio repeaters, with external multiplexers, and those at the subordinate headquarters are radio terminal sets. The equipment used usually depends on the types authorized by the TOE of the signal unit responsible for the installation, and on the specific communications requirements to be satisfied by the systems involved.

c. Multichannel Radio Repeater Facilities. In addition to the use of radio repeater sets as described in *b* above, they also are used as multichannel radio repeater stations, the purpose for which they were designed. When distances or obstacles make it necessary, radio repeaters are used as repeater facilities to extend the range of a multichannel radio system. The corps multichannel communications system often requires radio repeaters for this latter purpose. Individual multichannel radio systems, however, often may be completed directly between terminals, in which cases the repeater sets are kept in reserve status or undergoing maintenance.

2–12. Radio Communications

a. Radio Communications Facilities. The signal center at each echelon of corps headquarters has radio communications facilities. Corps also provides radio facilities at sub-

ordinate corps elements as required (*b* below). Field army normally provides a radio teletypewriter station at the corps end (indicated as field army terminals in figure 2–4) of an army net. Occasions may arise, however, when field army may direct corps to provide such a station.

b. Corps Radio Teletypewriter Facilities. Corps furnishes the RATT facilities at both terminals of corps RATT nets (fig. 2–9). Figure 2–9 shows the types of RATT nets that corps may establish. The nets may vary in composition or title according to a specific corps mission and situation or because of a variety of other factors. The corps signal battalion normally furnishes the corps station in the army air request net for preplanned air requests. The Air Force normally provides communications for immediate air requests from the requesting units to the direct air support center (DASC) that is collocated with the CTOC.

CORPS RADIO TELETYPEWRITER NETS					
NET / STATION	COMD 1	COMD 2	COMD 3	COMD 4	ARMY AIR REQUEST
CORPS MAIN	M	M	M	M	M
CORPS ALTN	A	A	A	A	
CORPS TAC CP	H				
CORPS ARTY			M	A	
CORPS ENGR BDE			A		
CORPS AVN GP				M	
ARMD CAV REGT				A	
SEPARATE BDE			M		
DIVISION 1	M				DIV SET
DIVISION 2	M				DIV SET
DIVISION 3		A			DIV SET
DIVISION 4		A			DIV SET
ADA GP			A		
ARMY MAIN					ARMY SET
ARMY ALTN					ARMY SET

LEGEND:
INDICATED CORPS SIG BN UNIT PROVIDES 1 AN/GRC-26:
M–CORPS MAIN COMD OP CO
A–CORPS ALTN COMD OP CO
H–HHC (MAY BE IN NET 2)

FM 11-92-59

Figure 2–9. Typical corps radio teletypewriter nets.

c. Commander's Mobile Radio Facilities. Two radio stations are provided for use by the corps commander and selected staff members when a corps tactical command post (CP) is established. These stations consist of two frequency modulated (FM) radio sets, each mounted in a ¼-ton truck. One of these stations has provision for voice transmission security.

d. Subordinate Organization Radio Nets. Corps organizations use their organic radio equipment to establish internal radio nets as required and authorized by standing operating procedures (SOP), standing signal instructions (SSI), and signal operation instructions (SOI). The signal battalion, for example, has a command radio net for control of battalion operations (para 3–21). It also has a systems control net to facilitate systems control operations in the installation, operation, and maintenance of the corps signal communications system and of the corps communications facilities provided for users of the system.

2–13. Radio Wire Integration Facilities

Corps radio wire integration facilities are located at corps main and alternate signal centers. They also are provided at the corps tactical CP, when this command post is established. The communications established through these facilities pass directly into the telephone central office of the signal center at which the radio wire integration stations are located (fig. 2–4, 2–5).

2–14. Communications Center Facilities

a. Signal Message Centers. Corps signal message centers are located in the communications centers of the corps main, alternate, and tactical signal centers (fig. 2–4 2–5). A small signal message center is provided also at the corps main CTOC and the corps alternate CTOC. Corps artillery headquarters and headquarters of other corps troops provide their own organic message center facilities, as required, to serve their headquarters. Corps signal message center functions include those of cryptographic and messenger facilities (*b* and *c* below).

b. Cryptographic Facilities. Each corps signal center has facilities for encrypting and decrypting messages as required. These include on-line as well as off-line cryptographic facilities.

c. Signal Messenger Facilities. Each of the corps main and alternate signal centers has signal messenger facilities in its message center. These facilities provide motor messenger and air messenger means of communications. They operate scheduled and special messenger runs both by motor vehicle and aircraft. Scheduled messenger runs are established to provide for periodic and economical transmission of messages between corps and major subordinate units. Special messenger runs are provided on an on-call basis under special criteria established by the corps signal officer in SOP and SOI or SSI.

d. Teletypewriter Terminal Facilities. Corps teletypewriter terminal facilities are established at corps main and alternate signal centers. Provision also is made for such facilities in the corps main CTOC and corps alternate CTOC. In addition, the signal center facilities for a corps tactical command post (para 2–5*a*) include a teletypewriter terminal facility. These terminal facilities include provision for semiautomatic teletypewriter operation using punched and printed teletypewriter tape rather than page copy. Such semiautomatic operation requires the use of tactical teletypewriter operational procedures and is not to be confused with teletypewriter tape relay network operation (*e* below). These terminal facilities provide a very limited teletypewriter switching capability (para 2–8) that normally is expended for interconnecting communications center teletypewriter facilities. At corps main and corps alternate signal centers, one function of these terminal facilities is to provide *tape relay terminal station* service (para 2–9*b*) for the tape relay network station.

e. Teletypewriter Tape Relay Facilities. Corps teletypewriter tape relay facilities normally are provided at the corps main and alternate signal center complexes. These facilities are considered part of the communications center. However, a tape relay network station mission is unique, and its activities are carried out under special operating procedures (para 2–9).

2–15. Pictorial Facilities

a. Photographic Facilities. Corps signal photographic facilities include making photographs and operating photographic laboratories. These facilities *exclude* aerial photographs and processing exposed color and motion picture film.

b. Photography. Signal photographers make pictures with still and motion picture cameras designed for land use. They operate primarily in the fields of army tactical, intelligence, and operational record photography. They may perform other types of photography, such as public relations under PIO supervision, as directed.

c. Photographic Laboratories. Corps mobile photographic laboratories process still photographs exposed by photographers of corps units. This includes processing aerial still photographs as required. Motion picture and color film-processing service is obtained from the nearest photographic laboratory that has these capabilities—usually theater army facilities. Corps laboratories may do supplementary processing work for attached divisions when necessary.

2–16. Signal Communications Control

a. Communications Control. Communications control is the management of communications resources to satisfy requirements generated by the mission and tactical operations of a supported command. It involves the planning and operation of the supporting communications system.

b. Field Army Communications Control. At field army level, the army signal officer (field army signal brigade commander) exercises communications control of the field army command and area systems. The corps signal officer coordinates his signal planning for support of corps tactical operations with the field army signal officer in the usual manner of staff coordination between staffs of subordinate and superior headquarters (FM 101–5). This coordination insures that the area communications support provided by field army for the operation can satisfy the requirements for supplementing the corps communications system during the operation. When requirements for army area communications support change during a corps operation, the corps signal officer normally makes his needs known through technical channels. Use of these technical

channels may take the form of communicating the request for support directly to the army signal officer (army signal brigade commander). It may also consist of placing the request directly with the army area signal company operating the army area signal center that is to provide the needed support.

c. Corps Communications Control. The corps signal officer usually discharges his communications control responsibilities through direction of his staff and of the systems control (SYSCON) and technical control (TECHCON) elements. These elements, under the immediate supervision of the corps signal battalion headquarters staff, operate at the corps main and alternate signal centers. They follow established standard communications control procedures (FM 11-21). Control circuits are established to give these elements direct telephone and teletypewriter communications with facilities in the corps communications system. These circuits provide for efficient direction of routing, rerouting, and emergency rearrangements of circuits in the system. They permit ready collection and timely distribution of information concerning such circuit control operations and directory changes and other signal communications data concerning the operation and control of the corps communications system. Complete, current signal communications records are maintained to provide for ready reference to technical information with which to determine and to make studies, estimates, and reports on the status of all components of the corps communications system.

2-17. Electronics Supply and Maintenance

Corps depends on field army support command (FASCOM) facilities for electronics supply and for direct support and general support maintenance (ch 9). The corps signal battalion, however, has a limited direct support maintenance capability for use in maintaining the battalion TOE electronics (including crypto) equipment.

2-18. Displacement of Signal Communications Facilities

Frequent movement of echelons of corps headquarters causes signal communications displacement operations to be carried on continuously. Proposed future locations of command posts must be selected and surveyed, plans must be made for their occupacy by signal communications facilities, plans must be developed for physical rearrangement and electrical rerouting of communications circuits, and all affected elements of the command must be advised of the actions they must take to accomplish the displacement. Physical movement of personnel and equipments then must be initiated. This movement must be conducted in phases that will permit establishment of signal communications before operation of the supported headquarters is to begin at the new command post. These phases also must permit signal communications to continue at the old command post until operation of the headquarters there is discontinued and until communications are properly established at the new command post. Simultaneously, actions similar to the foregoing must be taken for signal centers or signal facilities at locations other than command posts. Consequently, personnel and equipment must be available for the conduct of signal displacement operations (para 4-9*b*, 4-20*a*).

2-19. Signal Installation Security

a. Requirement. Physical security for signal communications installations is required to insure that the installations may operate undisturbed by local enemy action. This security may be provided by the headquarters that is supported by the communications facilities, or it may have to be provided by the signal unit that is responsible for the facilities. When the signal unit provides such security, it correspondingly decreases its signal communications capability.

b. Perimeter Defenses. Perimeter defenses of the supported headquarters provide the physical security required by the signal facilities that are located inside the perimeter. However, special security measures must be taken to prevent unauthorized entry into restricted areas within defense perimeters; for example, areas in which cryptographic operations are conducted.

c. Signal Site Defenses. Signal communications facilities frequently are installed at sites on or outside the defense perimeters of supported headquarters. Physical security for these installations usually is provided by the signal unit responsible for installation and operation of the facilities (*a* above). Individual and small unit defense actions may be found in FM 7–15 and FM 21–75.

d. Stability Operations Security. During stability operations, the corps signal battalion may have to cope with extended ranges, often establishing facilities at dispersed sites in hostile, nongovernment controlled areas (FM 31–23). In such instances when the signal battalion cannot provide both the necessary physical security for these sites and adequate communications support, requests are made for support by physical security forces. According to the circumstances, these requests may be satisfied by other corps units, other United States forces, or host country forces.

CHAPTER 3
CORPS SIGNAL BATTALION ORGANIZATION AND EMPLOYMENT

3-1. Corps Signal Battalion

The corps signal battalion is a major subordinate element of a corps. It establishes and operates a signal communications system (para 2-4*b*) which, when supplemented by a field army area communications system, satisfies the signal communications requirements (para 2-2) generated by corps operations. The staff activity of the corps signal officer produces the guidance that gives purpose and direction to the battalion operations. This chapter describes the authorized organization of the battalion, and discusses generally the battalion mission and operations. More detailed coverage of the battalion and its subordinate units appears in chapters 4 through 7, which show how employment of the battalion results in the corps signal communications system described in chapter 2.

3-2. Assignment and Control

One corps signal battalion normally is assigned to each corps. When assigned to an independent corps, the corps signal battalion is further attached to the signal group (para 3-8*c*) that is attached to the independent corps. The corps commander normally delegates to the corps signal officer the authority to exercise operational control over the corps signal battalion.

3-3. Mission

The corps signal battalion has a three-fold mission:

a. Command Communications. This battalion provides command signal communications systems for a corps headquarters. These systems interconnect echelons of the corps headquarters, and connect the corps headquarters with headquarters of major subordinate units of the corps.

b. Corps Artillery Communications. The corps signal battalion provides multichannel radio systems for the corps artillery organization. These systems interconnect the corps artillery headquarters and headquarters of major corps artillery units.

c. Photography. The signal battalion provides photographic support for a corps headquarters. This support excludes aerial photography and the processing of exposed color and motion picture film.

3-4. Capabilities

In the performance of its mission, the corps signal battalion has a variety of capabilities, the extent of which depends on the battalion TOE authorizations of strength in men and equipment. TOE 11-15 through TOE 11-19 all have three personnel and equipment authorization columns designated Level *1* (100 percent of full strength), *2* (90 percent of full strength), and *3* (80 percent of full strength). The battalion capabilities, according to its TOE authorizations, are discussed in paragraphs 3-5 through 3-8.

3-5. Full Strength Capabilities

When the corps signal battalion is organized at full TOE strength and is assigned to a corps that is part of a field army, it can perform its mission (para 3-3) within the capabilities indicated below (*a-i*).

a. Corps Multichannel Communications. The corps signal battalion installs, operates, and maintains the corps multichannel communications systems that follow the command channels of the corps. These systems include—

(1) Twenty-four channels (two 12-channel systems) from corps main signal center to corps alternate signal center, corps artillery headquarters, and each of four division main signal centers. Also 24 channels (two 12-

channel systems) from corps alternate to corps artillery.

(2) Twelve channels from corps main signal center to a corps cavalry regiment, a corps separate brigade, and a corps aviation group.

(3) Twelve channels from corps alternate signal center to each of four division alternate signal centers (para 6–4a).

b. Corps Artillery Multichannel Communications. The corps signal battalion can install, operate, and maintain multichannel radio systems for a corps artillery headquarters. These systems provide 12 channels from the corps artillery command post to each of 6 major corps artillery organizations (4 field artillery groups, a field artillery target acquisition battalion, and a field artillery missile battalion).

c. Radio Teletypewriter. The corps signal battalion provides radio teletypewriter nets from corps headquarters to major subordinate corps units. This includes the provision of radio teletypewriter stations at the subordinate unit headquarters, as well as at corps main and alternate signal centers, to operate in these corps command nets. The battalion also provides a corps radio teletypewriter station in the field army air request net.

d. Signal Messengers. The corps signal battalion provides signal messenger support for a corps headquarters. The messengers may use either motor vehicles or aircraft to make runs between echelons of corps headquarters and major subordinate corps units.

e. Signal Centers. The corps signal battalion provides signal centers for corps main, alternate, and tactical command posts. Included with the facilities provided are signal communications facilities for corps main and alternate tactical operations centers.

f. Field Wire and Cable. The corps signal battalion installs and maintains field wire and cable to connect multichannel radio facilities with other communications center facilities. This is done not only at corps signal centers, but also at other headquarters where the battalion provides the multichannel radio facilities.

g. Radio Wire Integration. The corps signal battalion can install, operate, and maintain three radio wire integration facilities. Normally, the battalion provides these facilities at the corps main, alternate, and tactical command post signal centers.

h. Photography. The corps signal battalion makes still photographs (excluding aerial photographs) and motion pictures for corps headquarters. The battalion also provides two portable laboratories for processing photographs made by battalion photographers and by other photographers, as authorized by the corps signal officer. The processing of motion picture and color film is outside the capability of these laboratories.

i. Maintenance. The battalion is capable of performing organizational maintenance on organic weapons, motor vehicles, power generating equipment, and electronics equipment. Organizational maintenance that is beyond the capabilities of subordinate companies is performed by the battalion headquarters and headquarters company (para 4–4*c*). In addition, the headquarters and headquarters company is capable of providing direct support maintenance on electronics equipment (excluding avionics equipment) organic to all companies of the battalion.

3–6. Reduced Strength Capabilities

The corps signal battalion may be organized at the reduced TOE strength authorization levels 2 or 3. In such instances, the battalion capabilities are reduced, accordingly, by approximately 10 or 20 percent. This reduction takes the form of a reduced TOE authorization for the individual companies.

3–7. Defense Capability

Individuals of the corps signal battalion (except the chaplain) can engage in effective, coordinated defense of its area or signal installations (para 2–19). Such activity, however, causes a corresponding curtailment of mission capabilities.

3–8. Capability Limitations

a. Normal Corps Operations. Certain functions necessary for satisfaction of normal corps signal communications requirements are outside the capabilities given the corps signal

battalion by its TOE. In this respect, the battalion requires supplementation provided from outside sources. It depends on—

(1) The field army signal brigade for communications facilities necessary to give corps access to the field army area and command communications systems.

(2) The field army area communications system for connecting echelons of corps headquarters with the ADA group that is habitually in the corps rear area, with combat support units outside the corps organization, with combat service-support units that have no direct access to the corps command communications system, and with the field army air traffic regulation system.

(3) Theater army pictorial units for processing exposed color and motion picture film.

(4) Service support organizations in the corps area for medical and dental service, supplemental transportation support, and other logistical support ((6) below).

(5) Tropospheric scatter radio teams authorized under TOE 11–500 to augment the battalion when the corps operates at extended distances and the tactical situation prevents employment of the battalion radio relay repeater equipments. This is applicable only when the command radio relay and cable company is organized under the SRC–18G620 variation of its TOE (para 6–4*a*).

(6) FASCOM units for additional direct support maintenance and for general support maintenance, as required.

b. Tactical Airlift Operations. The corps signal battalion may engage in operations requiring tactical airlift. The battalion commander requests such support through command channels (FM 100–27).

c. Independent Corps Operations. When the corps to which the corps signal battalion is assigned engages in independent operations, its signal communications requirements are far beyond the battalion capabilities. Under such circumstances, a signal group attached to the independent corps provides signal support similar to (but on a smaller scale than) that provided by the signal brigade for a field army. The corps signal battalion and a variety of other signal units, attached as required, make up the signal group organization ((1)–(6) below).

(1) Headquarters and headquarters detachment, signal group (TOE 11–122).

(2) Corps signal battalion (TOE 11–15).

(3) Army area signal battalion (TOE 11–85).

(4) Signal support companies (TOE 11–117).

(5) Medium headquarters signal operations company (TOE 11–127).

(6) Teams organized under TOE 11–500 and TOE 29–500.

(*a*) Mobile radio teams.

(*b*) Motor messenger teams.

(*c*) Switchboard operation augmentation teams.

(*d*) Cryptosupport type C team.

3–9. Organization

The corps signal battalion is organized as a category II unit (AR 320–5—unit categories). The battalion (TOE 11–15) has five organic companies (fig. 3–1).

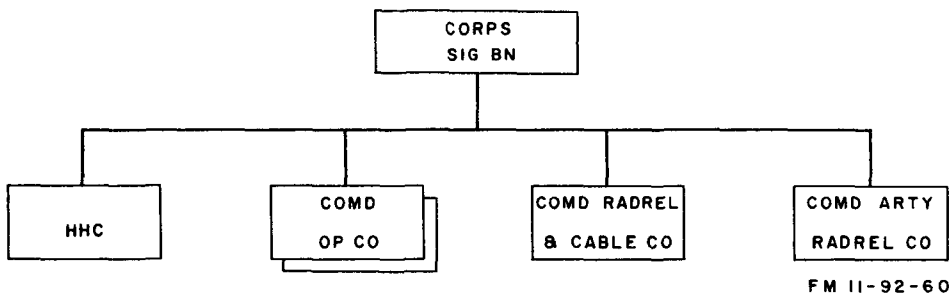

Figure 3–1. Corps signal battalion organization.

a. Headquarters and headquarters company (TOE 11-16) (ch 4).

b. Command operations company (main) (TOE 11-17) (ch 5).

c. Command operations company (alternate) (TOE 11-17) (ch 5).

d. Command radio relay and cable company (TOE 11-18) (ch 6).

e. Command artillery radio relay company (TOE 11-19) (ch 7).

3-10. Signal Mission Operation

The corps signal battalion operates a command-oriented signal communications system by means of which the corps commander controls corps tactical operations (FM 100-15). This system consists of command multichannel systems and point-to-point radio teletypewriter installations, together with messenger facilities. The corps system is superimposed on the field army area communications system. This arrangement has two principal purposes—

a. Communications to Support Units. The army area communications system provides for communications between corps headquarters and combat support and combat service support units in the corps rear area, when such units have no direct access to the corps communications system.

b. Depth for Corps Communications. The army area system supplementation provides the corps system with the depth necessary for assurance that the corps commander's signal communications requirements are satisfied despite disruptions brought about in the corps command communications system by unavoidable occurrences such as enemy actions.

3-11. Common Battalion Operations

As a major subordinate command of a corps, the corps signal battalion is a separate battalion. From this point of view, the battalion and its companies carry out their functions or internal command, administration, and logistics in accordance with regulations and procedures that govern such functions for all separate battalions in common. The nature of this battalion's operational mission, however, is unique among separate battalions. As a result, factors exist that make necessary certain variations in the performance of these common functions. In this manual, reference made to *normal* functions of this battalion such as *normal command channels for a separate battalion* and *normal support for the battalion* are related to these common functions and procedures. Discussions of these common functions are limited; they are expanded, as necessary, to indicate special considerations required by the unique-mission factors.

3-12. Functional Operation

The corps signal battalion TOE authorizes the men and equipment required to accomplish the battalion mission. However, the TOE does not necessarily indicate how battalion elements are organized functionally to perform the operations necessary for the satisfaction of this mission. Battalion operational elements organize as provisional units according to their related functions. Each of these units locates where it has ready access to the corps echelon or other element that it supports. Battalion elements that provide internal battalion control and support for the operating units of the battalion locate at a corps echelon where they have access both to the battalion units they support and to higher echelon combat service support activities. Consequently, elements of the corps signal battalion are present at each echelon of corps headquarters and at the command posts of various major subordinate headquarters.

3-13. Dispersed Operation

Since corps signal battalion elements perform mission operations at numerous locations throughout the corps rear area and at division command posts (para 3-12), the battalion and company commanders must solve many command problems involving time and distance. These include operational problems, logistics problems, and administration and personnel problems.

3-14. Operational Problems

a. Unity of Command. Unity of command (FM 100-5) obtains unity of effort by the coordinated action of all elements of the corps

signal battalion toward the common mission of providing a signal communications system to staisfy corps requirements. Maintaining this unity of command in the corps signal battalion demands continuous emphasis by all commanders and special effort by every member of the organization. The battalion and company commanders employ normal command channels for interchange of operational orders and information. The distances and functional organization involved in battalion operation require great reliance upon decentralized execution of orders, as well as centralized control of signal operations. They make extensive use of detailed standing operating procedures for all signal activities of the battalion. They also spend much of their time in personal observation of the signal operations in which their subordinate units are engaged.

b. Command Channels. The battalion commander issues his orders through normal battalion command channels. Once an operation begins, however, fragmentary orders are normal for the operations of a corps signal battalion. Frequently such orders go from the corps signal officer or battalion commander through the battalion systems control center (SYSCONCEN) (*c* below) direct to the operating elements of the companies at a corps signal facility. In such instances, each company commander must establish specific procedures to insure that members of his company report the orders and resultant actions to him as soon as possible after they occur. The company commander, in turn, coordinates such information with the battalion commander and staff. The procedure allows initiation and implementation of priority operational actions without delay and, at the same time, permits early restoration of the unity of command that is necessary for a coordinated battalion effort.

c. Coordination. Economy of force (FM 100–5), an important guiding prinicple in signal operations, requires constant attention to coordination in corps signal battalion operations. The diverse nature of signal communications operations, operational control by the corps signal officer as well as command and staff supervision at battalion headquarters level, interdependence among companies of the battalion for complementary signal communications facilities, use of the field army area communications system for supplementation of the corps system, and the distances involved in corps signal operations, all are factors in signal operation. These combined factors require close coordination to keep all concerned aware of the signal communications situation. Particularly important in this connection are the SYSCONCEN activities conducted by the staff S3. These activities provide for coordination of all battalion mission activities that require planning, engineering, and communications systems control (para 4–15) at battalion level. Company commanders must coordinate frequently with the battalion S3 and other staff members. The companies follow operational orders and procedures prepared for the battalion commander by the staff. Written reports keep the battalion commander and staff periodically informed, but only frequent oral interchange of information and guidance, summarized in periodic reports and orders, permits the conduct of effective signal operations.

d. Coordination Among Companies. Company commanders in the corps signal battalion constantly coordinate among themselves. Most of the signal communications facilities provided at echelons of corps headquarters and at headquarters of major subordinate units of the corps are interconnected through trunk facilities provided by the command radio relay and cable company of the battalion. Thus a corps trunk circuit must be connected through the facilities of at least two companies of the battalion, and may involve three or four companies. Battalion systems control activities supervised by the battalion S3 direct, record, and coordinate the establishment and changes in circuits and facilities, but the men and equipment performing the communications functions are in the units of the company commanders.

e. Coordination at Supported Headquarters. Corps signal battalion teams operating at headquarters supported by the battalion establish liaison with the local signal officer (or his representative) for coordination of their operations. For example, corps signal battalion SOP may establish methods different from

those of a division signal battalion for siting and installing a RATT station at the division signal center. A corps signal battalion RATT tean arriving at the division signal center, to operate in a corps RATT net, may have to modify his SOP for siting and installing his station in accordance with the division SOP. Further, the SOP for one division signal center may differ from those for singal centers of another division. The battalion SOP provides for teams at supported headquarters to comply with local SOP, or to make special arrangements with the local signal officer. Training programs and SOP both emphasize that the goal of establishing and maintaining communications is of prime importance, while differences in operating procedures may be resolved in the interest of attaining this goal.

3-15. Administrative and Logistical Problems

During periods when the corps signal battalion is in training, solving administrative and logistical problems is relatively simple. From time to time during the training period, units of the battalion may be together at one location where commanders and their men are closely associated and can readily take care of any administration, personnel, supply, and maintenance work as well as training for an operational mission. Once the battalion is deployed, however, problems in these areas are magnified because of the separation of elements of the companies. Men and equipment of one company, for example, may be employed at corps main, alternate, and tactical CP signal centers; at corps artillery headquarters; at the main and alternate signal centers of 4 divisions; at headquarters of 3 other major subordinate organizations; and at up to 12 other intermediate sites. The men and equipment in the functional units must continue to receive all of the administrative and logistical support required from their company and battalion commanders to sustain their mission operations despite their dispersed situation.

3-16. Defense Against Air Attack

a. Air Defense Artillery. Surface-to-air missile systems and forward area weapons (FAW) of the air defense aritllery (ADA) and the interceptor aircraft of other services provide air defense of the army in the field. Long-range, medium- and high-altitude ADA missiles and shorter range, low-altitude ADA missiles provide an umbrella of air defense for the field army area (FM 44-1). ADA units in the corps or division area provide air defense of units in the forward combat area. These FAW units with their high mobility can move with combat battalions and provide air defense for march columns, critical points, and vital areas. The mission of ADA also includes defense against arimobile attacks and airborne or airlanded troops. Priorities are established for the allocation and use of air defense means in defense of corps, divisions, and smaller combat units. Air defense for corps and other headquarters supported by the corps signal battalion depends on these allocations and on the internal air defense capabilities of these headquarters.

b. Corps Signal Battalion Air Defense. The corps signal battalion has organic caliber .50 machine guns which give a limited self-defense capability against hostile low-flying aircraft. These weapons are employed as part of the unit's local defense with a dual mission of ground and air defense. Some of the battalion signal mission installations are in the proximity of the corps elements they support (*a* above) and depend on the air defense provided these elements to provide also for protection of the supporting signal facilities. Although other signal installations of the battalion are under the ADA umbrella (*a* above), they may require specific provision for air defense. In any case, all requirements for air defense are coordinated with the corps signal officer to assure that they are considered in the corps and supporting ADA coordinated air defense planning.

c. Battalion Air Defense Measures. Under certain conditions, the air defense provided by ADA (*a* and *b* above) is likely to afford less than complete prevention of enemy air attack on battalion installations. Although the corps signal battalion has a local air defense means (*b* above), passive air defense measures constitute the primary internal actions taken by the battalion to avoid and to reduce the effect

of enemy air attack. These are all measures other than the employment of weapons, and they include dispersion, cover and concealment, camouflage, and an adequate warning system. Nevertheless, the battalion has the capability of taking active measures against air attack. For this reason, battalion SOP must establish criteria and detailed procedures for taking and for withholding active measures. These procedures must provide that any action taken must permit continuance of the signal mission operations. These procedures also must provide for the safety of friendly aircraft and troops. Further, action in this respect must be taken or withheld in accordance with procedures established by the commanders at whose headquarters the signal battalion installations are located.

3–17. Internal Defense and Internal Development Operations

The corps to which the corps signal battalion is assigned may operate in an internal defense environment to take part in stability operations. When the corps operates as an entity attached to a field army in such operations, the signal battalion adapts its SOP to the local situation and performs its normal mission for the corps. But the battalion may have a number of functions outside the scope of its normal mission. Some of these functions are enumerated in *a* through *d* below. It is particularly important to note, however, that when the corps signal battalion fulfills any of these functions, its capability to satisfy corps signal communications requirements is accordingly reduced (para 1–3*c*). Such functions require the use of men having special abilities and unique personal characteristics. Since key members of the battalion usually are the men who have these special abilities and characteristics, the degree of the reduction in battalion mission capability is likely to be greater than may be apparent from the numbers of personnel and equipment involved. Chapter 9, FM 31–22, goes into some detail about factors and problems with respect to signal communications in the usual internal defense and internal development environments. FM 31–15 and FM 31–16 also give valuable details about the nature of stability operations.

a. Civil Emergency Communications. The corps signal battalion may have to assist in establishing civil emergency communications. This requirement may arise in the absence of civil communications facilities, whether former communications in the area have been damaged beyond use or never existed.

b. Civil Communications Extension. The battalion may have to extend existing civil communications facilities. Such extension may be required in furtherance of the civil internal defense effort of the receiving state.

c. Friendly Military Communications. Augmenting the signal communications capability of friendly armed forces may be an additional function of the corps signal battalion. This function may be generated by international United States commitments with respect to internal defense and development operations.

d. Advice and Assistance. Technical advice and assistance in the field of signal communications may be another of these additional functions. Such advice and assistance, with respect to internal defense operations of the corps, may be in connection with either the training activities or the tactical operations of military forces of the receiving state.

3–18. Unit Chemical, Biological, and Radiological Defense

a. Defensive Measures. The purpose of unit chemical, biological, radiological 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, these defensive measures must provide for members of the corps signal battalion to operate effectively 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 battalion 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 battalion are responsible for certain general functions connected with CBR defensive operations. Duties related to these functions are as follows:

(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 personnel, establish unit collective and tactical CBR defensive measures and procedures, and use organizational first-aid and detection equipment.

(3) *Chemical staff specialist.* The chemical staff specialist works in the operations and intelligence section of battalion headquarters. He advises the operations officer on planning and coordinating CBR defensive operations. The companies of the battalion, not being authorized chemical staff specialists for this purpose, have personnel appointed and given special CBR training to qualify them for performing these duties in addition to their regular duties.

c. CBR Organization and Training. At battalion level, the normal command and staff structure provides for the conduct of training in CBR defense. The battalion commander appoints a CBR school-trained officer to the additional duty of CBR officer on the S3 staff. He also appoints CBR school-trained men for additional duty as battalion CBR specialists. Each company commander places a school-trained man on additional duty as company CBR NCO. Each company also should have a school-trained CBR Officer. Unit SOP designates the specific assignments, equipment, and duties of these CBR teams. The battalion must be ready to operate with maximum individual and unit effectiveness under conditions produced by either friendly or enemy employment of CBR weapons. Readiness is a battalion and company command responsibility. These commanders 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 battalion must be trained in how to carry out CBR defense instructions and in what steps to take in the absence of specific instructions about any unusual CBR activity.

d. Army Medical Service. The battalion obtains medical treatment from Army medical service personnel, who also identify biological agents. The commander obtains from then advice on immunization procedures, field sanitation, first aid, capabilities of medical facilities, fitness of food, and the effects of CBR agents on personnel.

3-19. Signal Battalion Communications System

In addition to providing corps with a signal communications system, the corps signal battalion installs, operates, and maintains its own internal battalion communications system. This system primarily consists of wire networks for telephone communications and FM radio networks for voice radio communications. Just as other corps major subordinate commands may use the corps signal communications system to supplement their own organic communications capabilities, so does the corps signal battalion depend on the corps system for supplementation of the battalion internal communications system, as required.

3-20. Battalion Telephone Communications

The battalion telephone communications system (fig. 3-2) is centered in the telephone switchboard situated in the vicinity of the corps signal battalion headquarters. This switchboard is installed, operated, and maintained by battalion headquarters company (ch 4). Trunks from switchboards at subordinate companies of the battalion (ch 5-7) terminate on this board. This board also terminates trunks from a corps switchboard (normally the corps main signal center board). When a subordinate company switchboard is within practical wire-laying distance of the battalion board, field wire provides the trunk from battalion to company. When it is impractical to lay field wire from battalion to

company, the company requires a trunk to a corps central office switchboard for completion of calls between battalion and company over corps common-user trunks. When an element of the company supports a corps element at a separate location and requires telephone communications, this requirement is satisfied by the supported corps element or by an army area signal center, according to the situation. Local telephone service afforded by the battalion headquarters switchboard and the telephone systems in subordinate companies are discussed in chapters 4–7.

3–21. Battalion Radio Communications

The battalion radio net provides FM-voice radio communications among the battalion commander, certain battalion staff members, specific elements of headquarters company, and the company commanders (fig. 3–3). Stations

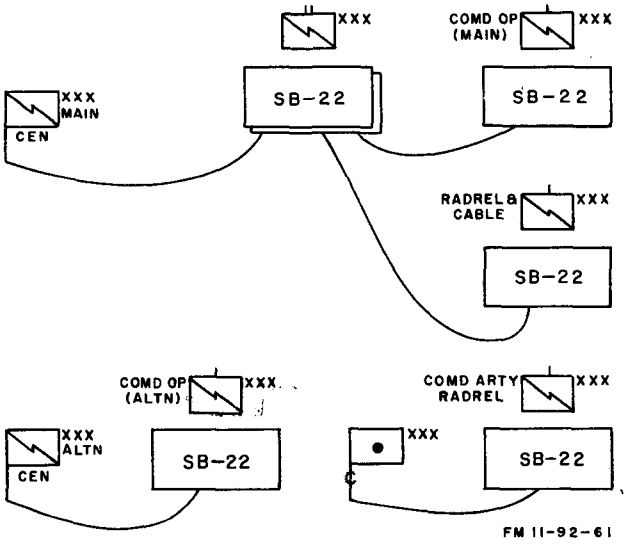

Figure 3–2. Typical corps signal battalion telephone trunks.

in this net can switch to company radio nets (ch 5–7) as required. To operate in their own company nets and in the battalion net, company commanders must switch from one net to the other.

3–22. Battalion Systems Control Communications

SYSCON supervision exercised by the battalion S3 concerns the corps signal communications system. The principal communications facilities provided for this function are those of the corps system. These facilities include telephone and teletypewriter circuits in the corps system provided for the telephone and teletypewriter equipment components of the SYSCON centers (ch 4, 5). In addition, the principal SYSCON facilities have telephone service from their parent company switchboards (ch 4, 5) and a SYSCON FM-voice radio net (fig. 3–3).

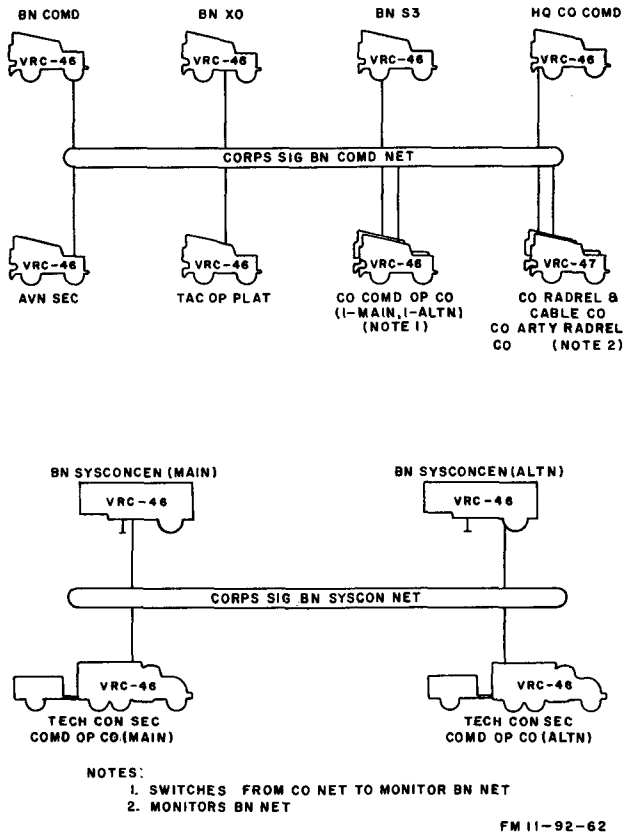

Figure 3–3. Typical corps signal battalion radio nets.

CHAPTER 4

BATTALION HEADQUARTERS AND HEADQUARTERS COMPANY

4-1. Headquarters and Headquarters Company

The corps signal battalion headquarters and headquarters company (HHC) provides the direction and support that is normal for a separate battalion. In addition, it has certain unique functions that are parts of the battalion combat support mission. This chapter describes the organization of headquarters and headquarters company and discusses how it operates to support and participate in the battalion mission.

4-2. Assignment and Control

One HHC is organic to a corps signal battalion under TOE 11-15. Command channels between the company and battalion headquarters are normal for a separate battalion.

4-3. Mission

The mission of the battalion headquarters and headquarters company is to provide—

a. Direction, planning, and coordination of operations, training, and administration for the corps signal battalion.

b. Aviation support for battalion operations.

c. Photographic support for the corps (except aerial photography).

d. Command signal communications facilities for a corps tactical command post or rear echelon.

4-4. Full Strength Capabilities

When headquarters and headquarters company is organized at full TOE strength, it is approximately 75 percent mobile and can perform its mission (para 4-3) within specified capabilities (*a*–*h* below).

a. Command. Headquarters and headquarters company provides command and control for the battalion. This includes staff planning and supervision of all battalion activities. One of the means used for this function is the battalion communications system control center (*f* below).

b. Battalion Administration. The HHC provides administration, personnel, and supply support for the battalion. It furnishes religious services for members of the battalion.

c. Organizational Maintenance. HHC performs battalion organizational maintenance on vehicles and power generators organic to the other companies of the battalion. This is in addition to the organizational maintenance it performs on headquarters company motor vehicles, aircraft, power generators, weapons, and avionics equipment.

d. Company Administration. HHC provides its own company administration. This company also furnishes its own mess and supply.

e. Electronics Maintenance. The HHC provides direct support level maintenance for electronics equipment (except avionics) organic to all companies of the battalion.

f. Corps Signal Communications. HHC operates a battalion systems control center (*a* above) to plan and direct the detailed engineering and operation of the corps command signal communications system. This company can install, operate, and maintain signal communications facilities for a corps tactical command post or rear echelon, including—

(1) A manual telephone central office, including installation and maintenance of local telephone distribution circuits and local telephones.

(2) A secure teletypewriter terminal facility for three full-duplex teletypewriter circuits.

(3) A message center facility that provides message-handling, messenger, and off-line cryptography (for use when required) facilities.

(4) A radio wire integration facility for establishing signal communications between mobile FM radio stations and the telephone operation facility.

(5) A radio teletypewriter facility for entry into one of the corps RATT command nets.

(6) Two mobile FM voice radio communications facilities for use by the corps commander and his staff, as required. One of these facilities provides FM voice radio communications with a transmission security capability.

(7) A PATCENT for patching, testing, and monitoring terminal communications facilities.

g. Aviation. The HHC has army aviation facilities for support of the battalion mission. These facilities can provide for corps air messenger and courier service. They also can furnish aerial resupply to isolated battalion multichannel radio stations, rapid resupply for distant corps signal installations of the battalion, and aerial wire-laying operations.

h. Photography. HHC provides photographic support (except aerial photography) for the corps. This includes—

(1) Ground still and motion picture coverage.

(2) Operation of two mobile photographic laboratories for processing still photograph film (except color film).

4–5. Reduced Strength Capabilities

Headquarters and headquarters company may be organized at TOE strength and equipment authorization level 2 or 3 (para 3–6). In such instances the operational capabilities of this company are reduced to approximately 90 or 80 percent of those at full strength.

4–6. Defense Capability

Individuals of headquarters and headquarters company (except the chaplain) can engage in effective, coordinated defense of its area and its signal installations (para 2–19). Such activity, however, may cause a corresponding curtailment of the unit mission capabilities.

4–7. Capability Limitations

Certain functions necessary for satisfaction of corps communications requirements, and certain required service support functions, are outside the capabilities given this headquarters and headquarters company by its TOE. For these functions, the company depends on supplementation provided from outside sources. It depends on:

a. Designated combat service support units for medical and dental services, supplemental transportation, direct support maintenance of avionics and nonelectronics equipments, and supplemental direct support maintenance on electronics (less avionics) equipment.

b. The battalion's command radio relay and cable company (ch 6) for communications trunk facilities and long local cable and wire circuits to support the mission of the tactical operations platoon that is organic to the company.

c. Theater army pictorial units for processing motion picture and color film.

d. Aviation teams organized under TOE 29–500 and authorized to augment the battalion for corps signal operations in environments similar to that of Southeast Asia (para 4–18).

4–8. Organization

Headquarters and headquarters company is organized as a category II unit (AR 320–5—unit categories). The organization (TOE 11–16) has two major elements (fig. 4–1).

a. Battalion Headquarters.

(1) Battalion commander.
(2) Executive officer.
(3) S3.
(4) Adjutant.
(5) Chaplain.
(6) Motor officer.
(7) S4.
(8) Sergeant major.

b. Headquarters Company.

(1) Company headquarters.
(2) Administration and personnel section.
(3) Battalion Supply section.
(4) Operations and intelligence section.
(5) Battalion motor maintenance section.
(6) Pictorial section.
(7) Aviation section.
(8) Battalion signal maintenance section.
(9) Tactical operations platoon.

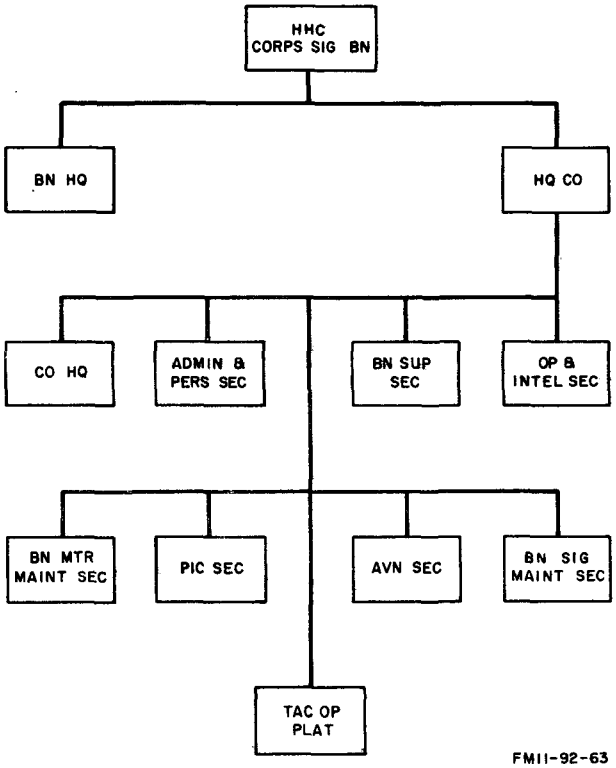

Figure 4–1. Battalion headquarters and headquarters company organization.

4–9. Operation

a. Function. Headquarters and headquarters company provides the direction and logistics necessary for the battalion to function as a coordinated organization in the accomplishment of its mission. It provides the means by which the battalion commander exercises command and control of the battalion and satisfies the needs of the battalion, including supplementation of certain facilities that make up portions of the corps signal communications system.

b. Employment. The company normally is employed in one echelon. It usually operates from a location near the corps main command post. However, the tactical operations platoon and specific members of the battalion staff sections may operate at the corps alternate command post or elsewhere in the corps rear area as directed. Paragraphs 4–12 to 4–24 gives details about operations, performed by elements of the company, that may differ from functions considered common among similar elements in headquarters and headquarters companies of other separate battalions.

4–10. Battalion Headquarters

The battalion commander and his principal staff members are assigned to the battalion headquarters. Operation of this headquarters follows normal staff procedures for a separate battalion (para 3–11). Local modifications may be necessary, however, because elements of the battalion perform their functions at extended distances from the battalion headquarters and one another. More detailed discussions of staff functions are presented in the following paragraphs on staff sections of headquarters company.

4–11. Headquarters Company

The functional organization of headquarters company is the same as the authorized organization shown in figure 4–1. The company provides staff section personnel and equipment to assist the principal staff officers of battalion headquarters, and gives normal separate battalion organizational support to battalion headquarters and to other companies of the battalion. In addition, the company performs the specialized functions discussed in paragraphs 4–12 through 4–24.

4–12. Company Headquarters

The company headquarters provides the normal command and support for elements of the company. In addition, this headquarters provides for supervision and accomplishment of the organizational maintenance required for power generator equipment authorized the company. The two drivers authorized the company headquarters are assigned special additional duties as wiremen. These duties include installation and maintenance of the headquarters and headquarters company telephone distribution system and installation, operation, and maintenance of the battalion switchboard. Because the headquarters and headquarters company conducts 24-hour-per-day operations, the unit mess operates continuously on this same basis.

4–13. Administration and Personnel Section

The battalion administration and personnel section provides the personnel and equipment required to fulfill the functions for which the battalion adjutant is responsible. The adjutant has staff supervision over all battalion administrative activities, including personnel administration. The section chief is the battalion personnel management officer. He also acts as assistant battalion adjutant. The section functions as a consolidated personnel management activity for units of the battalion and provides specialized assistance in the areas of the battallion chaplain and Army information officer (additional staff duty) activities. Other functions are general clerical support for battalion headquarters administrative activities and specialized clerical support, in the areas of mail delivery, legal functions, and pay activities.

4–14. Battalion Supply Section

The battalion supply section operates under the direct supervision of the section chief, who acts as assistant to the battalion S4. This section provides supply support (ch 9) for all companies of the battalion. In addition, the section has heavy responsibilities in the specialized area of electronics supply for the mission activities of the battalion. In this connection, the supply section takes action not only on electronics equipments used for the corps communications system, but also handles the large volume of electronics repair parts required in the daily operation of battalion elements.

4–15. Operations and Intelligence Section

a. Functions. The battalion operations and intelligence section provides the personnel and equipment required to discharge the responsibilities of the battalion S3 in the areas of operations, training (ch 10), intelligence, CBR defense (para 3–18), and communications security (ch 8). The section operates the corps communications SYSCONCEN. The assistant S3, who is a member of this section, also is the battalion S2. The section assists the S3 in planning, engineering, controlling, and exercising staff supervision over the corps signal communications system provided by the battalion. This same function is applied to the internal battalion signal communications system. Members of this section may function as indicated in *c* through *f* below.

b. Communications Systems Control. The communications SYSCONCEN operates principally at the corps main signal center. It can operate, however, at the corps alternate signal center. Normally a SYSCONCEN facility (one communications operations center, AN/MSC–25) is kept operational at each of these signal centers. All signal orders and communications data, records, and reports required to operate the SYSCONCEN at the main signal center are kept available also in the SYSCONCEN at the alternate signal center. This provides for continuation of SYSCON when the facility at corps main suspends operation. A team of key SYSCON personnel normally operates at the alternate facility for this purpose. Each SYSCONCEN provides for technical supervision of a collocated technical control center (TECHCONCEN) that is operated by a command operations company (ch 5) of the battalion.

c. Assistant Operations Officer. The assistant operations officer assists the battalion S3 in staff supervision and coordination of the operational activities of the battalion. His office normally is in the SYSCONCEN at the corps main signal center. He supervises the preparation and distribution of training charts, reports, line route maps, circuit and traffic diagrams, intelligence data, and other technical operational matter such as signal operation instructions, standing signal instructions, and standing operating procedures. He coordinates battalion activities pertaining to operations, training, and intelligence as directed by the battalion S3, and maintains current information on the status of battalion signal communications capabilities. He also supervises the preparation and implementation of battalion physical security and communications security plans.

d. Other Officers. Two area communications officers, two radio relay officers, and a wire operations officer provide technical assistance to the S3 in planning, engineering, and exercising staff supervision of the corps signal

communications system and the signal battalion communications system. This includes coordination for the interconnection of corps signal system and the division and field army communications systems. These officers perform SYSCON duties at the corps main or alternate signal center as directed by the battalion S3.

e. Noncommissioned Officers. Five noncommissioned officers assist in the operational functions of the section. Their duties include those common to S3 sections of any separate battalion; however, they have certain technical functions required by the signal communications mission of this battalion ((1)–(4) below).

(1) *Operations sergeant.* The operations sergeant provides technical assistance to officers of this section engaged in planning, engineering, and supervising signal communications provided by the battalion. He is also the battalion training NCO.

(2) *Intelligence sergeant.* The intelligence sergeant works on signal intelligence procedures and on cryptographic and communications security practices for the battalion. He monitors the personnel security-clearance files and the battalion classified files.

(3) *Systems control sergeant.* The SYSCON sergeant is the principal assistant to the officers in their SYSCON functions. His place of duty normally is in the corps main SYSCONCEN.

(4) *Other noncommissioned officers.* The other noncommissioned officers authorized this section are the circuit control sergeant and the radio relay sergeant. These NCO's give technical assistance to the wire operations and radio relay officers of the section. Their duties primarily are in the battalion SYSCON function.

f. Other Enlisted Men. The other enlisted men of this section are the chemical staff specialist, two general draftsmen, an operations clerk, two SOI clerks, a SYSCON clerk, and four teletypewriter operators. The chemical staff specialist performs the common functions normally indicated by his position title (para 3–18). Each of the general draftsmen works at one of the SYSCON centers. These men prepare telephone and teletypewriter diagrams, multichannel radio system diagrams, SYSCON data charts, line route map overlays, and other graphic records, reports, or aids required for the battalion S3 section functions. The four clerks work on the preparation and publication of SOI, SOP, and SSI, as well as other records and reports involved in the SYSCON operations of the section. (SOI and SSI are staff section responsibilities of the corps signal officer.) The teletypewriter operators furnish 24-hour operation of the machines installed in the corps main and alternate SYSCON centers.

4–16. Battalion Motor Maintenance Section

The battalion motor maintenance section operates under the supervision of the staff motor officer. This section supervises the organizational maintenance of motor vehicles and power generating equipment used throughout the battalion, and supplements, at battalion level, the organizational maintenance capabilities of the companies of the battalion as required. When feasible, equipments requiring repair by this section are brought to the section's battalion organizational motor maintenance facility to take advantage of the centralized shop capability. Nevertheless, it is often required that repairmen of the section perform onsite maintenance of vehicular and generator equipments. This section provides for distribution of petroleum supplies within the battalion; however, each company of the battalion has its own tank truck for fuel distribution.

4–17. Pictorial Section

a. Responsibilities. The pictorial section is responsible for part of the operational mission of the battalion. It provides still and motion picture photographers and equipment for photography required by the corps standing operating procedures, corps operation orders, and fragmentary orders received from the corps signal officer. Coverage excludes aerial photography, but may include ground reconnaissance, other intelligence, psychological warfare and operational record photography to satisfy corps tactical, operational, and historical requirements. The section operates two photographic laboratories to process black-and-white still

photographs for photographers of the section and for other corps units. Although the mission of the section excludes aerial photography, aerial still photographs made by photographers of other corps units may be processed in these photographic laboratories.

b. Operations. The functional organization of this section for operations is flexible. Photographers may operate individually or as members of provisional teams, according to the nature of specific task assignments. Their duties may take them anywhere in the corps zone of responsibility. The photographic laboratories are mobile and may locate where they can best serve photographic requirements. The criterion for their location is their accessibility to the sources of their workload and to sources of photographic and other supplies used in the laboratory processing of photographs. These laboratories usually are located at the headquarters company area in the vicinity of the corps main signal center. The section has a camera repairman to perform signal maintenance on its own camera equipments.

4–18. Aviation Section

The aviation section performs part of the battalion operational mission. In this connection, the aviators of the section perform air messenger duties as required for the corps signal centers. They also may perform air courier tasks, when special arrangements for such duties are made by the corps adjutant general through the corps signal officer. This section also has tasks that support other elements of the battalion in their operational missions. Under appropriate circumstances, for example, the section may make low-level aerial reconnaissance for cable and multichannel radio routes, or it may use its aircraft to install wire lines that otherwise would be impractical. Also when resupply of isolated battalion multichannel radio stations by motor vehicles is impractical because of site inaccessibility or time limitations, such resupply may be accomplished by this section. The section chief may also act as the battalion aviation staff officer (S3 air). Within the section, specialists perform all authorized organizational maintenance on the air vehicles and avionics equipment. Aircraft fueling and parts supply operations also are performed for the section by its own specialists. When the battalion provides signal communications for a corps operating in environments similar to that of Southeast Asia, the HHC TOE authorizes a greater number of aircraft than that otherwise required for the purposes indicated in this paragraph. This authorization is for augmentation of the aviation section, as required, with up to two *IE* and nine *IF* teams organized under TOE 29–500 (para 4–7*d*).

4–19. Battalion Signal Maintenance Section

The battalion signal maintenance section provides direct support maintenance for organic battalion electronics equipment. It operates under the staff supervision of the battalion S4. This section supervises the organizational maintenance performed by companies of the battalion on their authorized signal equipment. The section operates in mobile electronics maintenance shops. These shops are based in the headquarters and headquarters company area. To perform maintenance on equipment that must remain in its operating site, a repairman or repair team with the necessary maintenance equipment or an entire maintenance shop may move to the operating site.

4–20. Tactical Operations Platoon

a. Functions. The tactical operations platoon accomplishes part of the battalion operation mission. This platoon may perform any one of a variety of tasks. It may establish a small signal center for either a corps tactical command post or a corps rear echelon (fig. 2–5). It may provide terminal communications facilities to supplement corps communications facilities provided by the command operations companies of the battalion. It may provide facilities required in the displacement of a corps signal center.

b. Organization. The tactical operations platoon is organized with four major elements (fig. 4–2).

(1) Platoon headquarters.
(2) Telephone section.
(3) Communications center section.
(4) Radio section.

c. Operation. When the tactical operations

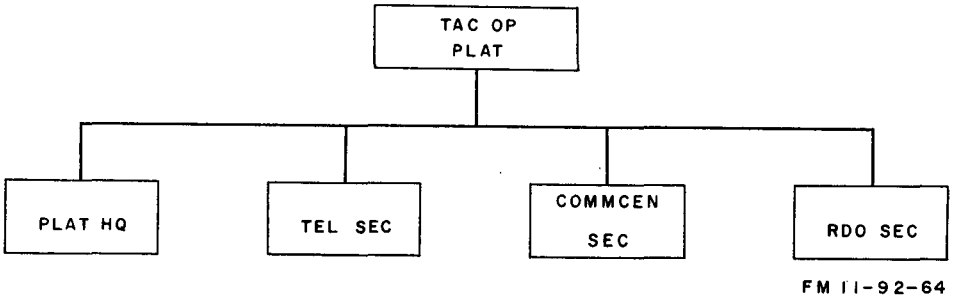

Figure 4–2. Tactical operations platoon organization.

platoon establishes a signal center for a corps tactical command post separated from the corps main or alternate signal centers, the platoon operates as a unit to provide the necessary communications facilities (fig. 4–3). The same applies when the platoon provides communications facilities for a corps rear echelon. In either instance, the platoon depends on outside sources for provision of multichannel radio terminal facilities. When the platoon supplements the facilities provided by other companies, the platoon may operate as teams formed provisionally according to the specific facilities required at particular sites. When the platoon is employed in any of these operations and must be used for other tasks, sufficient time must be allotted for disengagement of the facilities before the platoon can be employed in the other tasks. Operations of the elements of this platoon are discussed in paragraphs 4–21 through 4–24.

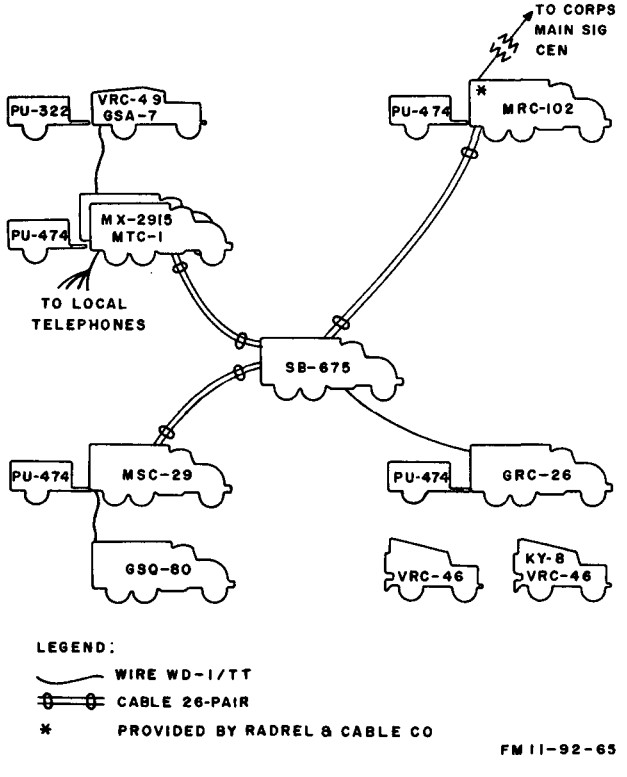

Figure 4–3. Facilities provided at corps tactical command post signal center by tactical operations platoon.

4–21. Tactical Operations Platoon Headquarters

Platoon headquarters of the tactical operations platoon provides normal command supervision of the platoon activities. When elements of the platoon are employed to supplement the communications facilities of other companies, however, such elements usually are under the operational control of the supplemented company. When such elements operate at sites away from the corps main signal center (for example, at the corps alternate signal center), the elements usually are attached to the unit they supplement. The platoon headquarters provides organizational maintenance for the power generators authorized its subordinate sections.

4–22. Telephone Section

The telephone section of the tactical operations platoon installs, operates, and maintains the manual telephone central office and communications patching panel (fig. 4–3) provided by the platoon. Telephone switchboard operators and manual central office repairmen are organized in shifts to provide for installation and

24-hour operation and maintenance of the manual central office. Circuit control personnel similarly operate and maintain the communications PATCENT as a TECHCON facility, on a 24-hour basis. A wire team in this section installs and maintains the wire and cable circuits and local telephones provided by the platoon.

4–23. Communications Center Section

The communications center section of the tactical operations platoon provides message center, cryptographic, and teletypewriter terminal facilities (fig. 4–3) required to accomplish the platoon tasks. Members are organized in shifts to operate their facilities 24 hours per day. Messenger operations are limited to the capabilities of the two men and one motor vehicle authorized the section for this purpose. Normally they operate as a special motor messenger team.

4–24. Radio Section

The radio section of the tactical operations platoon provides the radio teletypewriter and radio wire integration facilities (fig. 4–3) for which the platoon is responsible. Teams operate their facilities on a 24-hour basis. The section also provides two vehicular FM voice radio stations for use by the corps commander and authorized members of his staff when the platoon establishes the signal center for a corps tactical command post. One of these vehicular stations has transmission security equipment. Two radio operators of the section have additional duties as drivers of these two vehicles.

4–25. Internal Signal Communications

a. Radio Communications. The battalion headquarters and headquarters company has no internal radio communications net as such. The FM voice radio stations of this organization enter the corps signal battalion command net and the battalion SYSCON net (fig. 3–3).

b. Telephone Communications. Headquarters and headquarters company uses the battalion switchboard (fig. 3–2) for internal telephone communications. Telephone trunks terminating on this switchboard may go directly to other companies of the battalion, or they may go through telephone central office facilities at the corps signal centers (para 3–20). Local telephone wire lines terminate on this switchboard for both battalion headquarters and the elements of headquarters company (fig. 4–4).

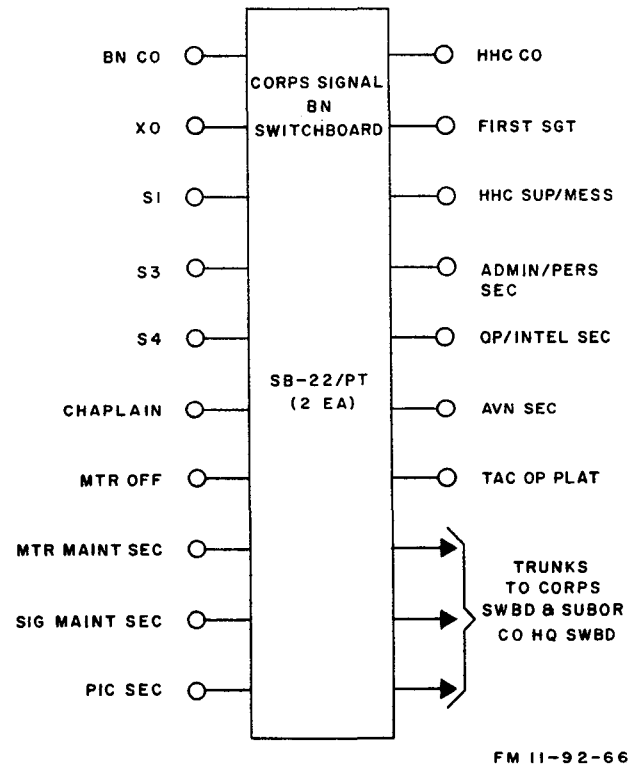

Figure 4–4. Typical internal telephone network of headquarters and headquarters company.

CHAPTER 5

COMMAND OPERATIONS COMPANY

Section I. THE COMPANY

5-1. General

This chapter describes the authorized organization of a command operations company. It presents a method of employing the company to accomplish its mission at a corps main or alternate command post. The specific circumstances of a corps operation may require modification of the represented method to satisfy the requirements generated by the particular tactical situation. When operations of the company at corps alternate differ from those at corps main, this chapter gives a method for each, using the notations *main* and *alternate* to indicate where the operation takes place.

5-2. Assignment and Control

Two command operations companies, one main and one alternate, are organic to a corps signal battalion, under TOE 11-15. Command channels between the companies and battalion headquarters are normal for a separate battalion (para 3-14*b*).

5-3. Mission

The command operations company provides signal communications facilities for an echelon of corps headquarters at either the corps main or alternate command post. Part of this mission is to furnish radio communications between the command post and headquarters of major subordinate corps units.

5-4. Full Strength Capabilities

When the command operations company is organized at full TOE strength, it is approximately 80 percent mobile and can perform its mission (para 5-3) within specified capabilities (*a-g* below).

a. Communications Center. The command operations company installs, operates, and maintains communications center facilities at a corps main or alternate command post. These facilities include—

(1) Teletypewriter terminal facilities.

(2) Tape relay facilities.

(3) A message center facility that provides—

(*a*) Message processing, off-line encryption of messages (for use when required), and facsimile service.

(*b*) Motor messengers for use between the corps signal centers and from corps to adjacent and subordinate unit headquarters as required.

b. Radio Teletypewriter. This company can provide 10 radio teletypewriter stations ((1) and (2) below).

(1) When the company is employed at the corps main signal center, it provides—

(*a*) Four stations to operate as net control stations (one for each of the four corps command nets).

(*b*) One station to operate in the army air request net.

(*c*) Five stations, located at designated corps subordinate unit headquarters, to operate in the corps command nets.

(2) When the company is employed at the corps alternate signal center it provides—

(*a*) Four stations to operate as alternate net control stations (one for each of the four corps command nets).

(*b*) Six stations, located at designated corps subordinate unit headquarters, to operate in the corps command nets.

c. Radio Wire Integration. The company furnishes a radio wire integration station at the signal center.

d. Telephone Central Office. The command

operations company provides a manual telephone central office for local and trunk switching at a corps command post.

e. Tactical Operations Center Communications. The company can furnish certain signal communications facilities specifically for termination of high-priority and sole-user circuits at a corps tactical operations center (CTOC). These facilities include—

(1) A teletypewriter terminal facility.

(2) A manual telephone central office.

(3) A message processing facility, with off-line encryption and decryption capabilities for use when required.

f. Organizational Maintenance. The company can perform organizational maintenance on its own weapons, motor vehicles, power generating equipments, and electronics equipment.

g. Mess. The command operations company operates its own mess on a 24-hour basis.

5–5. Reduced Strength Capabilities

The command operations company may be organized at TOE strength and equipment authorization level 2 or 3 (para 3–6). In such instances, the operational capabilities of this company are reduced to approximately 90 or 80 percent of those at full strength.

5–6. Defense Capability

Individuals of the command operations company can engage in effective, coordinated defense of its area and its signal installations (para 2–19). Such activity, however, may cause a corresponding curtailment of the unit mission capabilities.

5–7. Capability Limitations

Certain functions necessary for satisfaction of corps communications requirements, and certain required service support functions, are outside the capabilities given the command operations company by its TOE. For these functions, the company must depend on supplementation provided from outside sources. It depends on—

a. Designated combat service support units for medical and dental services, supplemental transportation, and direct support maintenance of motor vehicles, power generators, and other nonelectronics items of equipment.

b. Field army signal units for entry into the army area and army command signal communications systems.

c. Team TE, TOE 11–500, for installation, operations, and maintenance of data transceiver devices as required.

d. TOE 11–500 teams and TOE 29–500 teams for additional communications and administration capabilities as required.

e. Battalion headquarters and headquarters company for battalion-level administrative, personnel, and supply services; for battalion-level organizational maintenance of motor vehicles and power generators; for direct support maintenance of organic electronics equipment; and for religious services.

f. Battalion command radio relay and cable company for communications trunk facilities and long cable and wire circuits.

5–8. Organization

The command operations company is organized as a category II unit. The organization (TOE 11–17) has six major elements (fig. 5–1).

a. Company headquarters.

b. Technical control section.

c. Radio platoon.

d. Telephone platoon.

e. Corps tactical operations center platoon.

f. Communications center platoon.

5–9. Operation

a. Function. Elements of the command operations company (main) install, operate, and maintain a variety of signal communications facilities at the corps main signal center (fig. 5–2). Elements of the command operations company (alternate) provide similar facilities at the corps alternate signal center. In addition, each of these companies provides radio teletypewriter facilities at the command posts of a number of units normally assigned or attached to the corps (para 5–17*b*).

b. Employment. The command operations company normally is employed in one echelon, at corps main or alternate. When the corps command post displaces, however, certain elements of the company may continue operation temporarily while others displace. The method of displacement depends on standing operating procedures established by each corps command-

er and each corps signal battalion. Usually, corps alternate command post (and signal center) assumes the functions of the corps main command post (and signal center) while main displaces. The company carries out all its operations on the basis of a 24-hour day. Therefore, the task organization within elements of the company must provide teams for sustained operation.

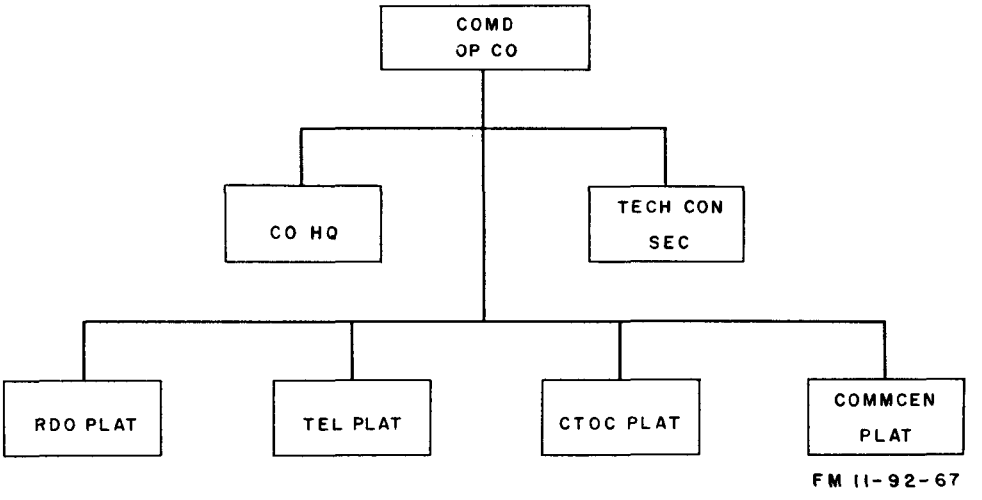

Figure 5–1. Command operations company organization.

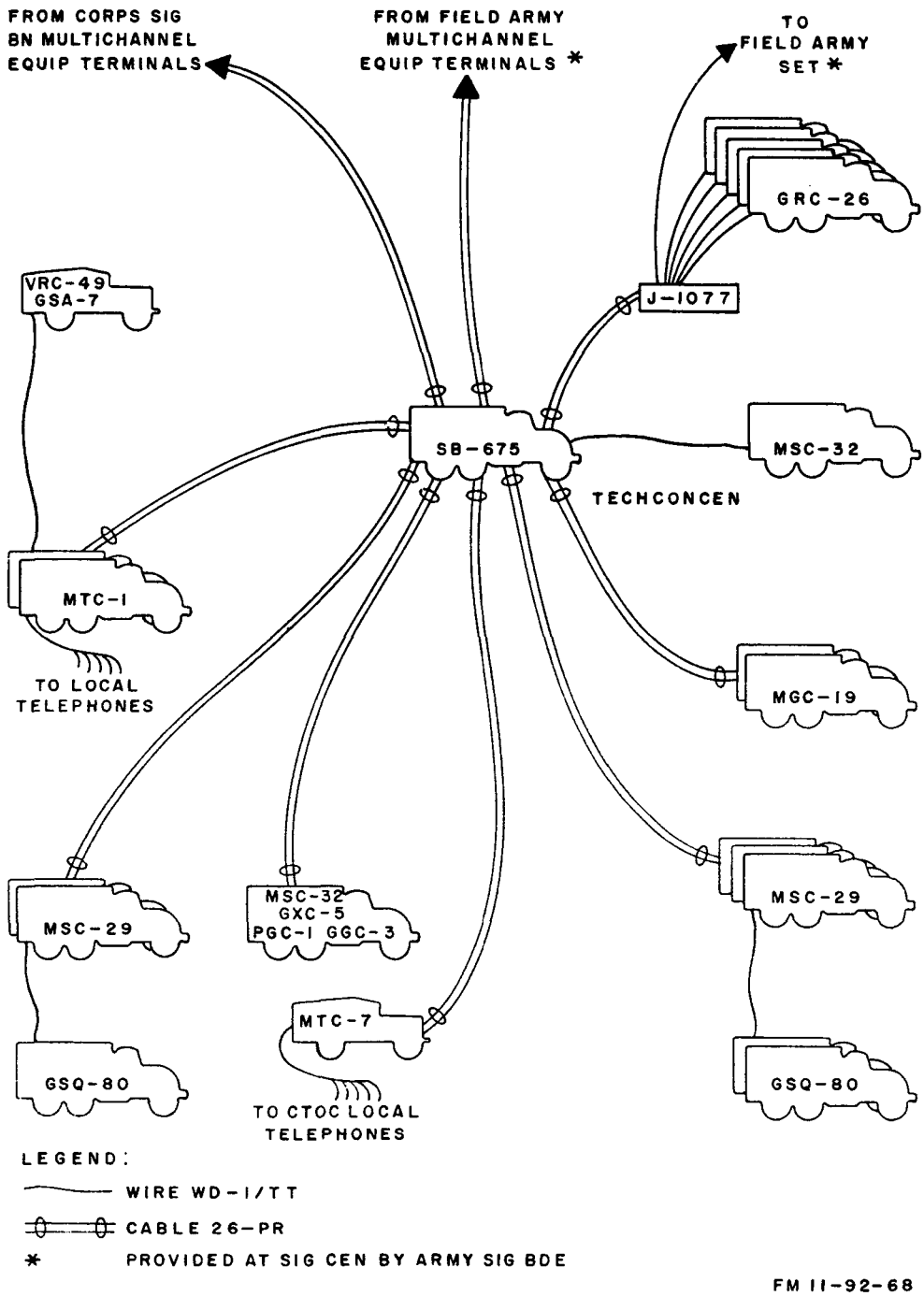

Figure 5-2. Facilities provided at corps main (or alternate) signal center by command operation company.

Section II. COMPANY HEADQUARTERS OPERATIONS

5-10. Command Operations Company Headquarters

The company headquarters provides command and administrative control and support that is normal (para 3-11) for an organic company of a separate battalion. Company headquarters (main company) normally is located adjacent to battalion headquarters and headquarters company in the vicinity of the corps main signal center. When the company supports the corps alternate command post, its company headquarters occupies a site readily accessible to the corps alternate signal center.

5-11. Administration and Logistics

The company administrative and logistical operations progress with normal support (para 3-11) from comparable activities at battalion level. In these operations, special provision is made in view of the company operations conducted at all hours of the day and night. Supply operations place emphasis on the heavy volume of electronics and tactical vehicle repair parts required for the communications and motor vehicle equipments in continuous use during normal mission operations. Special consideration also must be given for support of the radio teletypewriter teams operating at distant locations.

5-12. Command

The company commander receives his orders through normal battalion command channels (para 3-14). He extends his control through the commissioned and noncommissioned officers of the company, making maximum practical use of company and platoon standing operating procedures for all signal communications activities of the company.

5-13. Coordination

The diverse nature of signal communications operations, control by the corps signal officer as well as command and staff supervision at battalion headquarters level, and interdependence of the companies of the battalion for complementary signal communications facilities, all combine to present the requirement for close coordination to keep all concerned aware of the signal communications situation. Much of the required coordination takes place in the SYSCON centers operated by the battalion S3 staff section. The company commander, however, constantly coordinates with the commander of the command radio relay and cable company. The bulk of the communications channels interconnecting the communications facilities, provided by the command operations company at the echelons of corps headquarters, with those at major subordinate headquarters pass through the multichannel radio facilities provided by the command radio relay and cable company (ch 6). (See also para 3-14*d* for additional discussion of intra-battalion coordination.)

5-14. Technical Control Section

The technical control section operates under the staff supervision of battalion S3. Direction of the TECHCON activities of this section comes from the S3 section SYSCONCEN (para 4-15*b*). Members of the technical control section carry out their functions from the TECHCONCEN (an operations central and a communications patching panel, fig. 5-2). They coordinate the employment of the signal communications facilities furnished in the signal center by the command operations company. They establish and reroute circuits through the communications patching panel, following the instructions and priorities received from the battalion SYSCONCEN. This section prepares signal communications plans and standing operating procedures affecting company operations. It maintains liaison with command radio relay and cable company elements located at the same corps signal center. This is to coordinate the priority installation of circuits, such as those for the CTOC, and to assure circuit quality and orderly routing and rerouting of circuits. The section maintains accurate and timely information on the equipments and circuits for which the command operations company is responsible. This includes obtaining equipment and status reports from

the operating elements of the company and posting the reported information on a signal facilities status chart maintained by the section. Functions of the members of this section are as follows:

a. Technical Control Officer. The technical control officer assists the company commander in supervising the signal communications operations of the company. He and the company commander direct the section activities, which are carried out on a 24-hour basis.

b. Technical Control Sergeant. The technical control sergeant assists the technical control officer in supervising the performance of duties by the enlisted members of the section. He insures that the technical control facilities are properly manned at all times, that details of work are done properly and on time, and that the signal facilities status chart is kept current.

c. Circuit Control Sergeant. The circuit control sergeant is in charge of a team of three tactical circuit controllers. He supervises the installation, operation, and maintenance of the communications PATCENT, maintaining circuit outage records and implementing directives to place additional circuits into srrvice. His team operates the PATCENT on a 24-hour schedule to interconnect local signal communications terminal facilities and to connect these facilities with trunk circuits brought in by the command radio relay and cable company from the multichannel terminal facilities. The team coordinates technical adjustments in circuits between command post facilities, multichannel facilities, and distant terminal facilities. The controllers periodically test circuits to see that the necessary quality is maintained.

d. Teletypewriter Operators. Two operators constitute the teletypewriter operation team for this section. They provide the 24-hour operation of the teletypewriter stations in the TECHCONCEN.

e. General Draftsman. The technical control section has one general draftsman. This man does all the drafting required for preparation of diagrams, charts, and other aids relating to the technical control of company communications operations.

Section III. RADIO PLATOON OPERATIONS

5–15. Radio Platoon

a. Mission. The radio platoon installs, operates, and maintains radio teletypewriter facilities for the corps signal communications system (fig. 2–9, 5–2). The platoon also provides a radio wire integration station for the echelon of corps headquarters at which its parent command operations company establishes a signal center.

b. Organization. The radio platoon is organized with three major elements (fig. 5–3). One platoon is organic to each command operations company (fig. 5–1).

(1) Radio platoon headquarters.
(2) Radio section.
(3) Radio wire integration section.

c. Operation. The platoon operates simultaneously at the corps main or alternate signal center and at the headquarters of specified subordinate units (fig. 2–9, para 5–17). The platoon sections are organized as functional teams, each of which operates one station. The largest groupments of teams are at the corps main and alternate signal centers. At other locations, individual teams operate in coordination with the signal communications element of the supported headquarters.

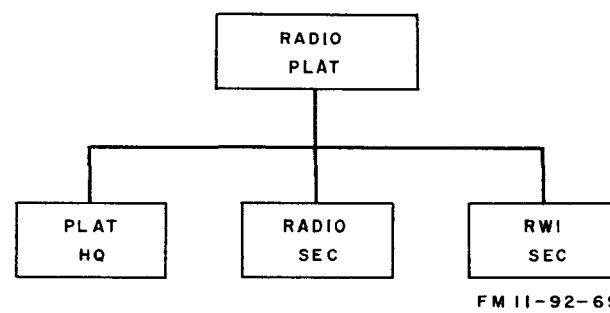

Figure 5–3. Organization of radio platoon, command operations company.

5-16. Radio Platoon Headquarters

The radio platoon headquarters provides supervision of the platoon activities. This includes planning and directing the location of the platoon's radio stations as required. It also includes coordination of the requirements for keying lines when the stations engage in remote operation. Powermen assigned to this platoon headquarters perform organizational maintenance on the power generating equipment of the platoon.

5-17. Radio Section

The radio section installs, operates, and maintains 10 radio teletypewriter stations, as directed by the section chief, under the supervision of the radio platoon commander. In its functional organization, this section has a headquarters and 10 radio teletypewriter teams.

a. Radio Section Headquarters. The section chief and two repairmen make up the radio section headquarters. The repairmen are specialists in cryptographic and field radio repair. They perform onsite organizational maintenance of the section cryptographic, radio, and teletypewriter equipments.

b. Radio Teletypewriter Teams. The radio teletypewriter teams of this section operate as four-man teams. Each team installs, operates, and maintains one complete radio teletypewriter station on the basis of a 24-hour day. All teams, except one ((1)(*a*) below), operate their stations in the corps command nets (fig. 2-9). Assignments of stations to net duties follow the patterns indicated in (1) and (2) below.

(1) *Corps main radio platoon.* When the radio platoon supports the corps main signal center, its radio teletypewriter teams operate in the radio park of this signal center (fig. 5-2) and elsewhere as follows:

(*a*) *Corps main signal center.* Five stations operate for the corps main signal center. Four of these stations, one in each corps command net, are designated net control station. The fifth station is the corps station in the field army air request net.

(*b*) *Division main signal centers.* Two stations, one for each of two divisions, operate in support of division main signal centers. These stations are in corps command net No. 1.

(*c*) *Corps artillery headquarters.* One station operates in support of the corps artillery headquarters. This station has the duties of subordinate station in corps command net No. 3.

(*d*) *Separate brigade.* One station operates near the corps separate brigade headquarters. It is assigned the duties of subordinate station in corps command net No. 3.

(*e*) *Aviation group.* One station operates in the vicinity of the corps aviation group headquarters. This station is in corps command net No. 4.

(2) *Corps alternate radio platoon.* When the radio platoon supports the corps alternate signal center, its radio teletypewriter teams operate in the radio park of this signal center (fig. 5-2) and elsewhere as follows:

(*a*) *Corps alternate signal center.* Four stations operate for the corps alternate signal center. These stations, one in each corps command net, are designated alternate net control station.

(*b*) *Division main signal centers.* Two stations, one for each of the remaining two divisions ((1)(*b*) above), operate in support of division main signal centers. These stations are in corps command net No. 2.

(*c*) *Engineer brigade.* One station operates near the corps engineer brigade headquarters. This station has the duties of subordinate station in corps command net No. 3.

(*d*) *Air defense artillery group.* One station operates in support of the ADA group headquarters. This station is in corps command net No. 3.

(*e*) *Corps artillery headquarters.* One station operates in the vicinity of the corps artillery headquarters. This is a station in corps command net No. 4.

(*f*) *Armored cavalry regiment.* One station operates with the armored cavalry regiment headquarters. This is a station in corps command net No. 4.

5-18. Radio Wire Integration Section

The radio wire integration section installs, operates, and maintains a radio wire integra-

tion facility at the corps main or alternate signal center (fig. 5–2). This section operates 24 hours per day as a single three-man team, under the supervision of the platoon commander. The team works in very close coordination with the telephone operation section of the telephone platoon (para 5–21). Its equipment is interconnected with the telephone central office and is partially controlled by the telephone switchboard operators on duty.

Section IV. TELEPHONE PLATOON OPERATIONS

5–19. Telephone Platoon

a. Mission. In performing its mission, the telephone platoon installs, operates, and maintains the corps main or alternate telephone central office. The platoon also installs and maintains the local telephone distribution system associated with this central office and with that of the CTOC platoon (para 5–23*a*, 5–25). In addition, this platoon installs and maintains wire lines and cable to bring trunk circuits from the technical control section PATCENT (para 5–14) to the telephone central office, and to interconnect the PATCENT and circuit terminating equipments provided in the corps main or alternate signal center by all elements of the command operations company.

b. Organization. One telephone platoon is organic to each command operations company (fig. 5–1). The platoon is organized with three major elements (fig. 5–4).

(1) Telephone platoon headquarters.
(2) Telephone operation section.
(3) Telephone installation section.

c. Operation. The telephone platoon operates at the corps main or alternate command post, according to which command operations company is the platoon's parent company. The sections of the platoon are organized as functional teams for 24-hour per day operation. The principal activities of the platoon take place within the signal center and the corps command post.

5–20. Telephone Platoon Headquarters

The telephone platoon headquarters provides normal command and control of the platoon activities. Close coordination with the technical control section is necessary for the required installation and maintenance of wire and cable circuits. The driver assigned to the platoon headquarters engages in the wire installation activities of the telephone installation section (para 5–22), as required, when he is so directed by the platoon leader or the platoon sergeant.

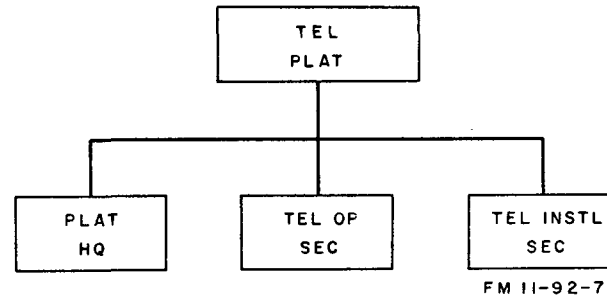

Figure 5–4. Organization of telephone platoon, command operations company.

5–21. Telephone Operation Section

The telephone operation section installs, operates, and maintains the telephone central office at the corps main or alternate signal center (fig. 5–2). The section is organized for 24-hour operation with a section headquarters and three telephone switchboard operation teams.

a. Telephone Operation Section Headquarters. The section chief and two manual central office repairmen make up the telephone operation section headquarters. The section chief directs all activities concerning the telephone central office, under supervision from the platoon headquarters. He prepares traffic diagrams and compiles information required for the telephone directory service. The manual central office repairmen perform their duties under the direct supervision of the section chief. They install and maintain this section's manual central office and perform organizational maintenance on this equipment and on associated telephone equipment. They also perform organizational maintenance on the CTOC platoon telephone central office (para 5–25).

b. Telephone Switchboard Operation Teams.

The telephone switchboard operation teams of this section may operate as four-man teams. Each team mans the switchboard for an entire shift. A senior operator is the team chief. He mans the information operator position on the switchboard, giving directory information as required to authorized recipients. He supervises the operators on duty, providing them with current traffic diagrams. He assists them in complicated routing or rerouting of calls and handles difficulties with subscribers, thus releasing the operators for handling the greater bulk of routine traffic. Team chiefs make peg counts and record other data as directed.

5–22. Telephone Installation Section

The telephone installation section installs and maintains the local telephones and telephone distribution circuits required at the corps main or alternate command post, tactical operation center, and signal center. The section also installs and maintains the wire and cable circuits coming from the corps main or alternate technical control section PATCENT and going to the command operations company circuit-terminating facilities. The section is organized for 24-hour operation with a section chief and five wire teams.

a. Section Chief. Under the supervision of the platoon commander and platoon sergeant, the section chief directs all installation and maintenance activities of the section. He coordinates the wire and telephone installation requirements. He assigns teams to tasks according to priorities established by standing operating procedures (such as the precedence normally given to CTOC circuits) and by special instructions coming from the platoon headquarters.

b. Wire Teams. Each of the five wire teams has a team chief and four wiremen. One of the wiremen on each team functions as installer-repairman. These wire teams discharge all of the command operation company's wire and telephone installation responsibilities.

Section V. CORPS TACTICAL OPERATION CENTER PLATOON OPERATIONS

5–23. Corps Tactical Operation Center Platoon

a. Mission. The corps tactical operation center platoon installs, operates, and maintains a communications center facility for the corps main or alternate CTOC (fig. 5–2). This platoon also provides a telephone central office for the same CTOC.

b. Organization. One CTOC platoon is a major organizational element of a command operations company (fig. 5–1). Although the company TOE shows this platoon without specifying its internal organization, the platoon has three major functional elements (fig. 5–5).

(1) CTOC platoon headquarters (non-TOE provisional organization).

(2) Telephone operation section (non-TOE, provisional organization).

(3) Communications center section (non-TOE, provisional organization).

c. Operation. The platoon operates in the CTOC at the corps main or alternate command post, according to which of the command operations companies is the platoon's parent company. The requirement for control of corps tactical operations in progress generates the communications requirements of the CTOC. As a result, they normally receive high precedence in the assignment of priorities for the establishment and maintenance of facilities in the corps communications system. Although this platoon provides signal communications facilities specifically for the elements of the CTOC, these facilities terminate circuits that pass through facilities established by other elements of the command operations company. For these reasons, particular emphasis is placed on coordination between this platoon and the other company elements with which the platoon has direct dealings for communications purposes.

5–24. CTOC Platoon Headquarters

The CTOC platoon headquarters (non-TOE, provisional organization) provides normal command and control of the platoon activities.

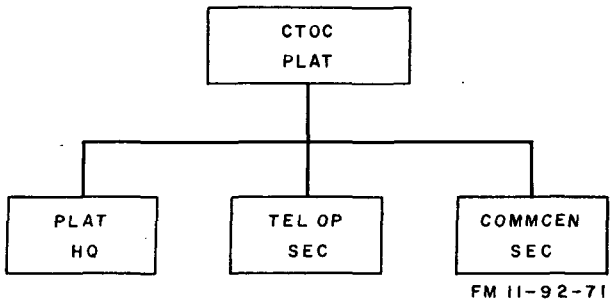

Figure 5–5. Provisional organization of CTOC platoon, command operations company.

The platoon leader and platoon sergeant coordinate with the technical control section and with the telephone platoon to insure priority installation and maintenance of CTOC local telephones and other wire and cable circuits. This headquarters has a powerman who performs the organizational maintenance on the platoon's power generating equipment. The truckdriver assigned to platoon headquarters is a qualified wireman and may be directed by the platoon leader or platoon sergeant to assist in telephone operation section duties (para 5–25) when this section requires augmentation.

5–25. CTOC Telephone Operation Section

The telephone operation section (non-TOE, provisional organization) of the CTOC communications platoon has a section chief and three telephone switchboard operators for 24-hour operation. This section installs and operates the CTOC telephone central office at corps main or alternate. The principal telephone traffic handled on this switchboard consists of high-priority calls affecting current corps tactical operations. Trunks between the CTOC and the tactical operation centers at field army and division terminate on this switchboard to expedite such telephone calls. The required number of these trunks and sole-user telephone circuits from the CTOC are as determined by the field army and corps signal officers and directed through the field army signal brigade and corps signal battalion communications SYSCONCEN. Usually the orders to satisfy such requirements appear in standing signal instructions and standing operating procedures. Special requirements of this nature that are preplanned for a specific operation may be directed in the signal annex of the applicable operation order. Once the operation is in progress, however, orders to establish or discontinue such circuits are disseminated by the SYSCONCEN through the TECHCON sections that implement the orders. The telephone installation section (para 25–22) of the telephone platoon installs and maintains the local telephone distribution system of the CTOC telephone central office. It also installs and maintains field wire and cable that carry trunk circuits from, and sole-user circuits through, this telephone central office to the PATCENT operated by the company technical control section. The manual central office repairmen from the telephone operation section (para 5–21*a*) of the telephone platoon take care of the organizational maintenance required by the CTOC telephone central office.

5–26. CTOC Communications Center Section

The communications center section (non-TOE, provisional organization) of the CTOC communications platoon installs, operates, and maintains communications center facilities (fig. 5–2) to handle message traffic specifically for the CTOC. These facilities are separated from the facilities provided by the communications center platoon (para 5–27). This section also provides th equipment of a weather operations central to be operated by Air Weather Service (AWS) men of the U.S. Air Force. The section is organized with a section headquarters and functional teams for operation on a 24-hour basis.

a. Communications Center Supervisor. A communications center supervisor is the section chief. He is in charge of all CTOC communications center operations. Part of this responsibility is to insure that the weather operations central equipment is operational at all times. He also insures that United States Air Force (USAF) personnel operating this central know the principles of cryptographic security and have the security clearances required for access to the equipment and materials they use.

b. Communications Center Operation Teams. Two communications center shift supervisors share the 24-hour-per day responsibility for operation of the message center and

teletypewriter terminals in the CTOC communications center. Two teams, each having a cryptographer and either a communications center specialist or a communications clerk, operate the message center facility in shifts. Ten teletypewriter operators make up the teams that operate the teletypewriter terminal facilities of the section. Usually the team that operates during the shift when a peak volume of traffic occurs has six operators, while the other team has four. Shift schedules and the number of operators on duty at one time are flexible, however, and may vary according to requirements as determined by the section chief.

Section VI. COMMUNICATIONS CENTER PLATOON OPERATIONS

5-27. Communications Center Platoon

a. Mission. The communications center platoon installs, operates, and maintains the common-user facilities of the corps main or alternate signal communications center (fig. 5-2). The facilities provided by this platoon exclude those furnished by the CTOC communications center section (para 5-26).

b. Organization. One communications center platoon is a major organizational element of a command operations company (fig. 5-1). The platoon is organized with five major elements (fig. 5-6).

(1) Communications center platoon headquarters.

(2) Message center section.

(3) Teletypewriter terminal section.

(4) Tape relay section.

(5) Crypto-teletypewriter maintenance section.

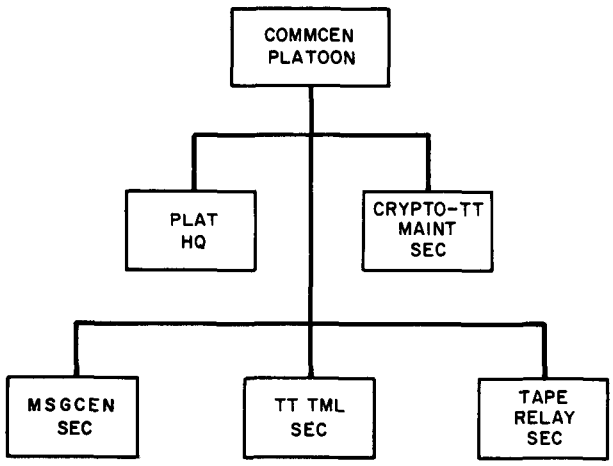

Figure 5-6. Organization of communications center platoon, command operations company.

c. Operation. The communications center platoon operates at the corps main or alternate signal center, depending on which of the command operations companies is the platoon's parent company. The sections of this platoon organize as functional teams to operate on the basis of a 24-hour day.

5-28. Communications Center Platoon Headquarters

The communications center platoon headquarters provides normal command and control of the platoon activities. Close coordination is required between this platoon headquarters and the company technical control section to insure continuous provision of circuits for the platoon's facilities, and for prompt establishment of discontinuance of circuits to meet changing communications traffic requirements. Coordination with the corps headquarters staff message distribution agency also is necessary to insure prompt exchange of information and to preclude delay of message traffic passing between the message center and the corps headquarters. The platoon headquarters is made up of a platoon leader, a platoon sergeant, and two powermen. These powermen perform organizational maintenance on the platoon electrical power generators.

5-29. Message Center Section

The message center section installs and operates the message center facilities of the corps main or alternate signal center. These facilities provide the processing of incoming messages for delivery to the corps headquarters staff message distribution agency. They also provide the processing of outgoing messages for transmission by messenger or by electrical

means. This processing includes off-line cryptography, for use when required. Operation of facsimile and motor messenger facilities are functions of this section. The motor messenger facility also supports the CTOC communications platoon operations. This section has a section headquarters, message center teams, and motor messenger teams organized for continuous operation.

a. Message Center Section Headquarters. A section leader, a cryptographic technician, and a message center supervisor make up the message center section headquarters. The section leader has normal responsibility for planning and supervising all activities of the section. He also is responsible for the command operations company crypto account. He discharges this latter responsibility by establishing local security procedures for handling the cryptographic items issued to the company in addition to insuring implementation of Army regulations governing the storage, issue, receipt, and control of cryptomatter. The cryptographic technician, who is a warrant officer, supervises the procurement, receipt, storage, issue, and control of cryptomatter used in the signal center, in the CTOC, and in the radio teletypewriter stations. He supervises the implementation of security procedures established by the section leader and by governing Army regulations. The message center supervisor exercises direct control over operation of the message center activities. These activities include the off-line crypto, facsimile, and motor messenger operations conducted by the section.

These men operate the facsimile set as part of their duties.

(2) *Cryptographers.* Three cryptographers form a team. At least one of these men is on duty with each message center shift. Two may be required during periods of peak traffic volume.

b. Message Center Teams. The message center teams operate in shifts. Two shift supervisors alternate to direct the teams for sustained operation.

(1) *Communications center specialists.* Each of two teams has a communications center specialist and two communications clerks.

(3) *Cryptomateriel specialists.* One cryptomateriel specialist annd one cryptomateriel clerk form a team to assist the cryptographic technician (*a* above). One of these men is on duty with each message center shift.

c. Motor Messenger Teams. There are seven teams of motor messengers. Each team has two men, one of whom has the additional duty of driving the motor vehicle assigned to the team. These teams are scheduled for operation, according to the numbers of motor messenger runs necessary to handle the volume of message traffic existing at particular times during each 24-hour period.

5-30. Teletypewriter Terminal Section

The teletypewriter terminal section of the communications center platoon installs, operates, and maintains the communications center teletypewriter terminal facilities at the corps main or alternate signal center. At each of these signal centers, the facilities consist of three communications-secure telegraph terminals (fig. 5-2). This section has a headquarters and three teletypewriter terminal teams for sustained operation of the section facilities.

a. Teletypewriter Terminal Section Headquarters. The teletypewriter terminal section headquarters has a section leader and a teletypewriter supervisor. The section leader has normal supervisory responsibility for the section. The section supervisor implements the section leader's plans and orders and maintains security standards by directing the operation of the teletypewriter terminal teams.

b. Teletypewriter Terminal Teams. The teletypewriter terminal teams are seven-man teams. Each team operates one of the three teletypewriter terminals on the basis of a 24-hour day. A team has two shift supervisors and five teletypewriter operators. The two shift supervisors alternate on duty to supervise the three-man and two-man shifts of operators. During periods having peak volume of message traffic, three teletypewriter operators per team are on one shift.

5-31. Tape Relay Section

The tape relay section of the communications center platoon installs, operates, and maintains the teletypewriter tape relay facilities at

the corps main or alternate signal center. At each of these signal centers, these tape relay facilities are two communications-secure teletypewriter operations centrals (fig. 5–2). This section has a section chief and two tape relay teams to keep the facilities in continuous operation. The section chief directs all activities involved in the operation of the section's facilities. Each team operates one of the teletypewriter operations centrals on a 24-hour basis. A team has two shift supervisors to alternate for continuous supervision of shifts on duty, and two shifts of three operators each.

5–32. Crypto-Teletypewriter Maintenance Section

The crypto-teletypewriter maintenance section of the communications center platoon provides onsite organizational maintenance for all cryptographic, teletypewriter, and ancillary equipments of its parent command operations company. This section has a section chief, three cryptographic equipment repairmen, and three teletypewriter equipment repairmen. The section conducts its maintenance operations from two mobile electronics maintenance shops, with its facilities available for emergency onsite maintenance 24-hours per day.

Section VII. COMMAND OPERATIONS COMPANY

INTERNAL COMMUNICATIONS

5–33. Internal Radio Communications

The command operations company has an FM-voice radio command net (fig. 5–7). Company headquarters operate all the stations in this net. Purposes for which this net exists include control of activities pertaining to petroleum, oil, and lubricant (POL) resupply; disabled vehicle recovery; area security; and convoy control. The company commander may operate his vehicular radio set either in this net or, as required, in the battalion command net (fig. 3–3) by switching the set from one frequency to the other. Radio equipment for operation in this company command net is authorized the company headquarters. Other radio equipment that is used in the battalion SYSCON net (fig. 3–3) is authorized the company technical control section.

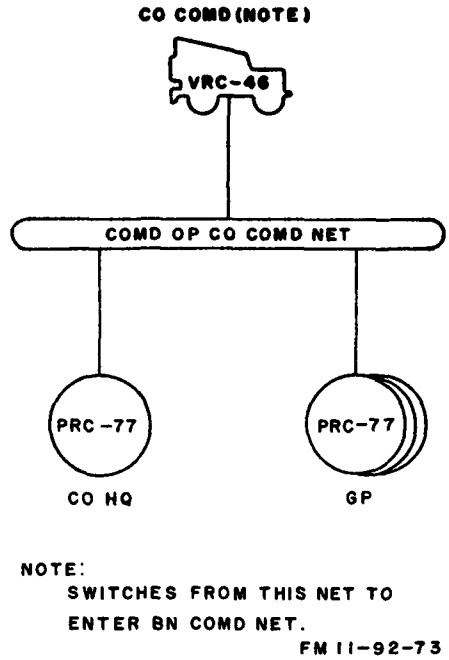

Figure 5–7. Typical command operations company internal radio net.

5–34. Internal Telephone Communications

The command operations company telephone communications system (fig. 5–8) is provided by the company headquarters section. When the company operates at the corps main signal center in the vicinity of the signal battalion headquarters, trunks connect the company switchboard directly with the battalion switchboard (fig. 3–2). When the company operates at the other signal center, its telephone trunk lines are installed to the telephone central office facilities of the corps alternate signal center (para 3–20, 4–25*b*). The system provides local telephone service for each of the major elements of the company, including the technical control section, and for certain company headquarters activities that require it for support of the company's operating elements.

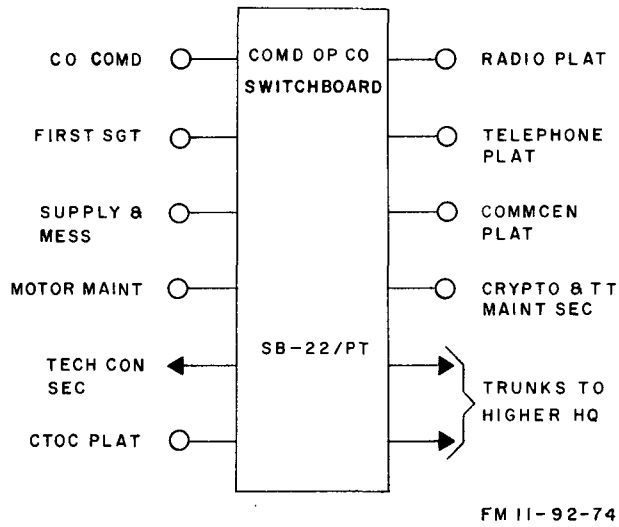

Figure 5–8. Typical command operations company internal telephone system.

CHAPTER 6

COMMAND RADIO RELAY AND CABLE COMPANY

Section I. THE COMPANY

6-1. General

This chapter describes the authorized organization of a command radio relay and cable company. It presents a method of employing the company to accomplish its mission at the echelons of a corps headquarters and between these echelons and the headquarters of major subordinate units assigned or attached to the corps. The specific circumstances of a corps operation may require modification of the represented method to satisfy the requirements generated by the particular tactical situation.

6-2. Assignment and Control

Under TOE 11-15, one command radio relay and cable company is organic to a corps signal battalion. Command channels between the company and battalion headquarters are normal for a separate battalion (para 3-14).

6-3. Mission

The mission of a command radio relay and cable company is to provide multichannel communications systems between the echelons of a corps headquarters and from these echelons to the headquarters of major subordinate units. The field army signal brigade establishes lateral trunks to other corps headquarters through field army multichannel facilities (para 2-6*d*; fig 2-3, 2-4).

6-4. Full Strength Capabilities

a. TOE Variations. The TOE for the command radio relay and cable company is published with two sets (variations) or personnel and equipment allowances. These variations are indicated by *Standard Requirements Code 11018G610* (SRC-18G610) and *Standard Requirements Code 11018G620* (SRC-18G620). The SRC-18G620 variation authorizes presently available multichannel communications equipments, together with the men required to install, operate, and maintain them. In this manual, the command radio relay and cable company is described as organized under the SRC-18G620 variation. This variation authorizes greater numbers of multichannel equipments and operating teams than are needed under the SRC-18G610 variation. At the same time it provides normally for only 12 channels of multichannel radio between the corps alternate and division alternate signal centers (para 2-4*b*, 2-6*b*, *c* below, and fig 2-3), rather than the 24 channels provided by the SRC-18G610 variation. When the tropospheric scatter and medium channel-capacity equipments authorized under the SRC-18G610 variation become commonly available to existing corps signal battalions, it is expected that this manual will be modified to reflect the SRC-18G610 variation.

b. Capabilities. When the command radio relay and cable company is organized at full TOE strength, it is approximately 80 percent mobile and can perform its mission (para 6-3) within specified capabilities (*c-e* below).

c. Multichannel Systems. The company installs, operates, and maintains command-oriented multichannel systems, including—

(1) Seven 24-channel systems (each consisting of two 12-channel systems) deployed throughout the corps zone and designated as follows:

(*a*) Corps main—corps alternate system.

(*b*) Corps main—corps artillery system (corps main terminal only).

(*c*) Corps alternate—corps artillery system (corps alternate terminal only).

(*d*) Corps main—division main system (four systems—one for each division).

(2) Eight 12-channel systems deployed throughout the corps zone and designated as follows:

(*a*) Corps main—corps TAC CP system.

(*b*) Corps main—armored cavalry regiment system.

(*c*) Corps main—aviation group system.

(*d*) Corps main—separate brigade system.

(*e*) Corps alternate—division alternate system (four systems—one for each division) (*a* above).

(3) Twelve repeater facilities used to extend the multichannel systems ((1), (2) above) as required.

d. Field Wire and Cable. The company installs and maintains field wire and field cable, including—

(1) Spiral-4 and 26-pair cable at corps command posts as required.

(2) Cable trunks between echelons of corps headquarters when practical.

(3) Cable from multichannel terminals to the supported field installations.

e. Internal Support. The company provides mess facilities and organizational maintenance of electronics equipment, weapons, vehicles, and power generators.

6–5. Reduced Strength Capabilities

The command radio relay and cable company may be organized at TOE strength and equipment authorization level 2 or 3 (para 3–6). In such instances, the operational capabilities of this company are reduced to approximately 90 or 80 percent of those at full strength.

6–6. Defense Capability

Individuals of the command radio relay and cable company can engage in effective, coordinated defense of its area and its signal installations (para 2–19). Such activity, however, may cause a corresponding curtailment of the unit mission capabilities.

6–7. Capability Limitations

Certain functions necessary for satisfaction of corps communications requirements, and certain required service support functions, are outside the capabilities given the command radio relay and cable company by its TOE. For these functions, the company depends on supplementation provided from outside sources. It depends on—

a. The battalion headquarters and headquarters company for—

(1) Battalion level administrative, personnel, and supply support.

(2) Religious services.

(3) Battalion organizational maintenance of motor vehicles and power generators.

(4) Battalion organizational and direct support maintenance of organic electronics equipment.

b. Designated combat service support units for medical and dental services, supplemental transportation, and direct support maintenance of motor vehicles, power generators, and other nonelectronics items of equipment.

6–8. Organization

The command radio relay and cable company is organized as a category II unit. The organization (TOE 11–18) has seven major elements (fig. 6–1).

a. Company headquarters.

b. Two cable and wire platoons.

c. Two command radio relay platoons.

d. Two forward radio relay platoons.

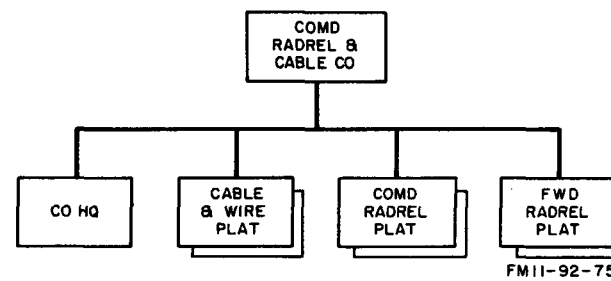

Figure 6–1. Command radio relay and cable company organization.

6–9. Operation

a. Function. The command radio relay and cable company has the function of providing multichannel communications systems and

cable circuits, except those for the internal use of the corps artillery organization. These facilities (fig. 4–3 and 6–2—6–6) satisfy the long-distance communications requirements of the corps headquarters.

b. Employment. The company is employed at and between the corps headquarters echelons and designated major units assigned or attached to the corps. The company organizes functionally in teams according to the facilities each provides. Team sizes vary. A team may be as large as a reinforced platoon, as required at a major corps signal center, or it may be as small as is required to install, operate, and maintain one multichannel radio terminal with its associated wire and cable facilities.

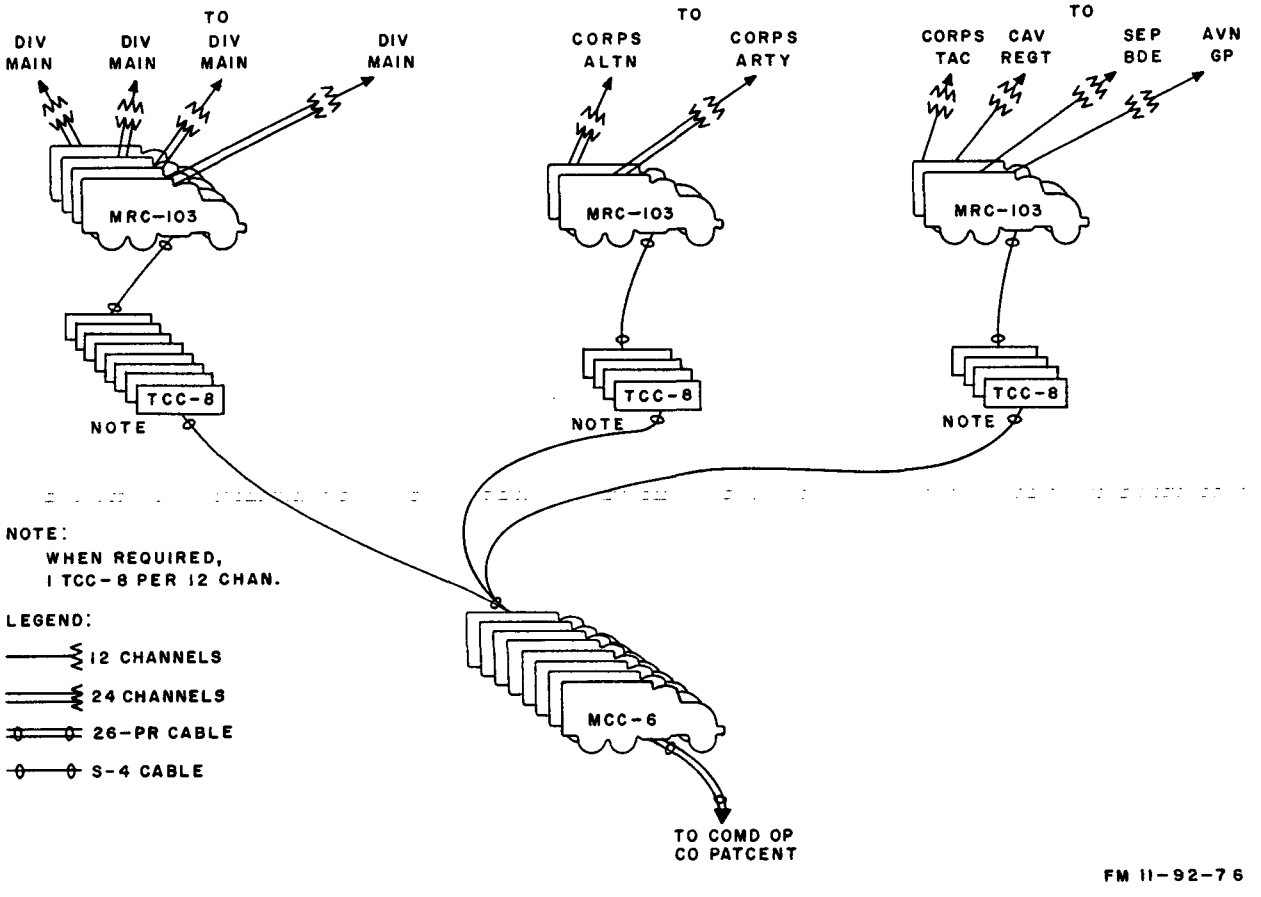

Figure 6–2. Facilities provided at corps main signal center by command radio relay and cable company.

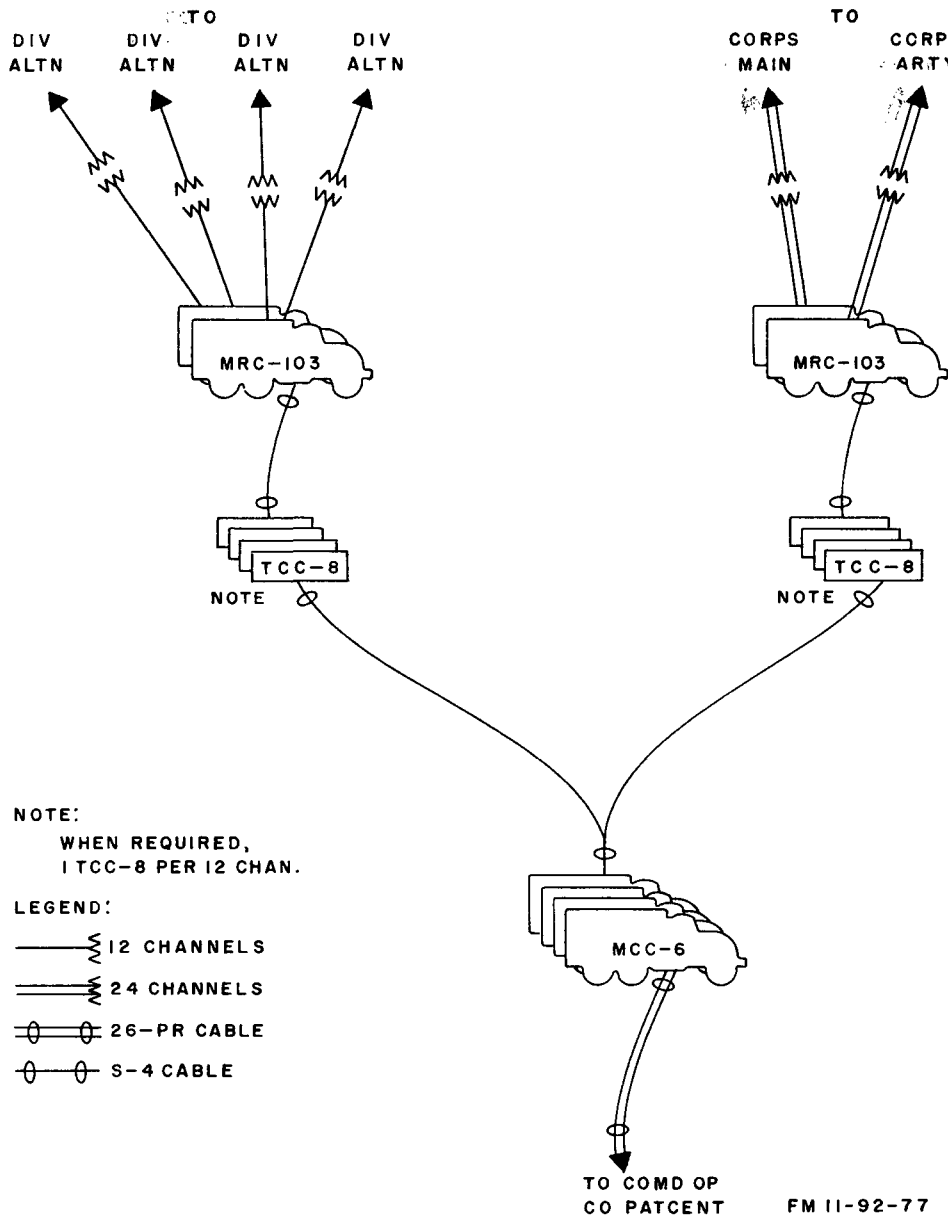

Figure 6-3. Facilities provided at corps alternate signal center by command radio relay and cable company.

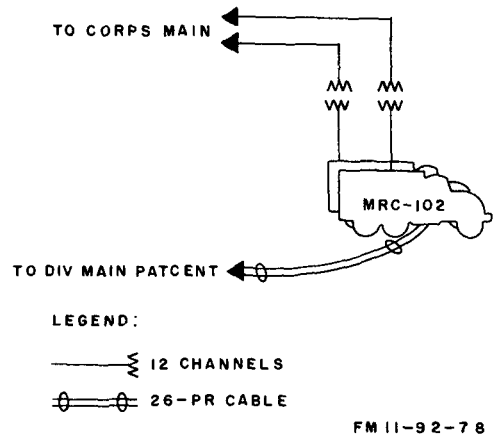

Figure 6–4. Facilities provided at division main signal center by command radio relay and cable company.

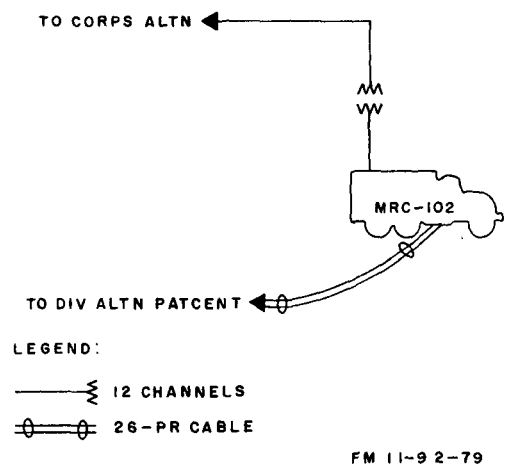

Figure 6–5. Facilities provided at division alternate signal center by command radio relay and cable company.

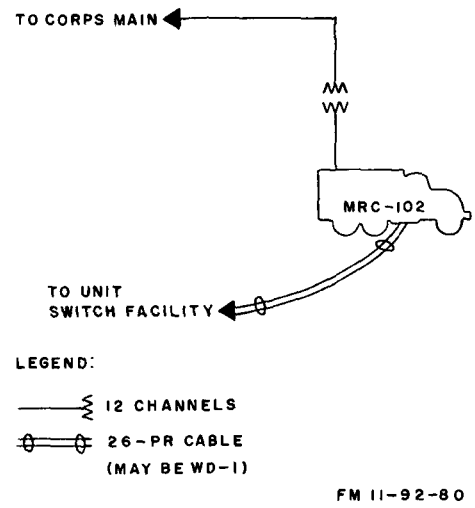

Figure 6–6. Facilities provided at headquarters of separate brigade, cavalry regiment, and aviation group by command radio relay and cable company.

Section II. COMPANY HEADQUARTERS OPERATIONS

6–10. Command Radio Relay and Cable Company Headquarters

The company headquarters provides command and administrative control and support that is normal (para 3–11) for an organic company of a separate battalion. Company headquarters normally is located adjacent to battalion headquarters and headquarters company in the vicinity of the corps main signal center.

6–11. Administration and Logistics

The company headquarters conducts its administrative and logistical operations with normal support (para 3–11) from comparable activities at battalion level. In these operations, provision is made to accommodate the 24-hour-per-day operation of all elements of the company. For example, the company operates mess facilities on a 24-hours-per-day basis at

both corps main and corps alternate areas. Supply operations are geared to the heavy volume of electronics and tactical vehicle repair parts required for continuous operation of the company's communications equipments and motor vehicles. An additional factor involved in these operations is the dispersion of men and equipment throughout the corps rear area and at the division command posts (para 3–15).

6–12. Command

The company commander receives his orders through normal battalion command channels (para 3–14). He must extend his control through the commissioned and noncommissioned officers of the company, making maximum practical use of company and platoon standing operating procedures for the mission and support activities of the company. This is particularly important in the command radio relay and cable company, because of the dispersed company elements. The company commander spends a considerable portion of his time in personal observation of the company operations, but he cannot visit all of his outlying communications facilities very frequently. A radio relay sergeant is authorized the company headquarters to assist the company commander in the direction and coordination of the company multichannel radio operations. Preparation of company SSI and SOP is part of this sergeant's function.

6–13. Coordination

The multichannel radio facilities provided by this company interconnect with the facilities provided by all other companies of the corps signal battalion, as well as with communications facilities of other headquarters subordinate to the corps. This company commander, therefore, coordinates not only with the battalion staff and SYSCON, but with all units connected with the company's multichannel radio facilities. (See also para 3–14, 4–18, 5–13, and 5–14, for additional discussion of this coordination.)

Section III. CABLE AND WIRE PLATOON OPERATIONS

6–14. Cable and Wire Platoon

There are two cable and wire platoons in the command radio relay and cable company (*b* below). This discussion applies equally to each platoon, or to an element of each platoon, except where it is indicated that particular statements apply collectively to both platoons.

a. Mission. In performing their collective mission, the two cable and wire platoons install and maintain spiral-four and 26-pair cable and field wire, as required, at corps signal centers. This includes cable and wire between the communications patching panel of the command operations company and multichannel terminal facilities provided by other platoons of this company (fig. 6–2, 6–3). It also includes cable and wire between multichannel terminal facilities provided by this company and communications facilities at supported headquarters of major subordinate corps units, except artillery (fig. 6–4, 6–5, 6–6). When practical, these platoons may install and maintain spiral-four cable for multichannel wire systems between corps signal centers. Also, when practical, the platoons may perform this function between corps signal centers and major subordinate corps units.

b. Organization. Two cable and wire platoons are organic to the command radio relay and cable company (fig. 6–1). Each platoon is organized with three major elements (fig. 6–7).

(1) Cable and wire platoon headquarters.
(2) Command cable section.
(3) Forward cable section.

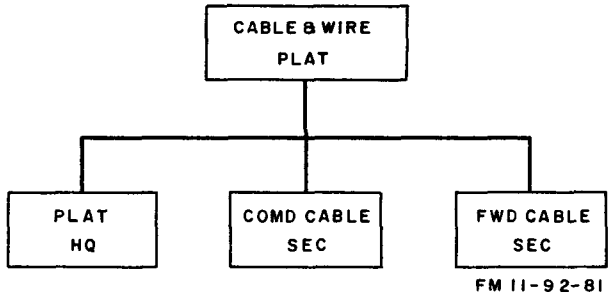

Figure 6–7. Organization of cable and wire platoon, command radio relay and cable company.

c. Operation. Elements of the platoon operate simultaneously, as required, at and between the installations as explained in *a* above. The sections of the platoon are organized as functional cable teams and wire teams. The largest groupments of teams are at corps main and corps alternate signal centers. For this reason, one platoon normally bases at corps main signal center and the other at corps alternate. The number of teams at any installation depends on the amount of work required, together with the priority assigned the construction activity.

6–15. Cable and Wire Platoon Headquarters

The cable and wire platoon headquarters provides normal command and control for the platoon activities. In addition, it provides a vehicular earth auger, with operator, and an underground cable layer for use by teams as required for their construction activities. The platoon leader coordinates all cable and wire requirements for the company commander. He reconnoiters cable and wire routes, assigning teams as required for the installation. The platoon sergeant assists the platoon leader in these functions and records cable and wire installations and terminations. The platoon headquarters vehicle driver is a qualified wireman. He may be required to perform duties as such by the platoon leader under exceptional circumstances or to maintain his skill. Deployment of the teams in this platoon over extended distances requires the platoon leader and his assistant to expend much of their supervisory effort in coordination and inspection of team activities.

6–16. Command Cable Section

The command cable section of the cable and wire platoon installs and maintains spiral-four cable and repeaters, when so directed, to complete multichannel wire systems between corps signal centers and from corps signal centers to major subordinate corps units. When corps headquarters moves frequently, this part of the section's function may require so great an effort as to be impractical. Instructions to do without these facilities, however, must come through command channels from the battalion commander or be directed in SOP. The section installs and maintains spiral-four cable at corps signal centers between multichannel radio terminal sites (radio repeaters used as terminals) and associated telephone repeaters (when installed) and multiplex terminals. It also installs and maintains 26-pair cable from these terminals to the command operations company communications PATCENT. This section has a section chief and four command cable teams, each having a team chief and five wiremen. In addition to directing the cable teams in his section, the section chief assists the platoon leader and platoon sergeant in reconnoitering cable routes.

6–17. Forward Cable Section

The forward cable section of the cable and wire platoon installs and maintains field wire or 26-pair cable at supported subordinate corps units. These installations are from multichannel radio terminals to the communications PATCENT or switchboard that serves the supported headquarters. This section has a section chief and four forward cable teams, each having a team chief and four wiremen. In addition to directing the wire teams in his section, the section chief assists the platoon leader and platoon sergeant in reconnoitering wire and cable routes as required. Normally, the wire teams of this section are deployed with one team at each of four division main or alternate signal centers. Members of these teams may be used for the same purposes at other supported headquarters of subordinate corps units. These teams also may be used to augment the command cable teams when this is necessary and they can be relieved of their primary functions.

Section IV. COMMAND RADIO RELAY PLATOON OPERATIONS

6–18. Command Radio Relay Platoon

There are two command radio relay platoons in the command radio relay and cable company (*b* below). This discussion applies equally to each platoon, or to an element of each platoon, except where it is indicated that particular statements apply collectively to both platoons.

a. Mission. In performing their collective mission, the two command radio relay platoons install, operate, and maintain the multichannel radio terminal equipment, including the associated multiplexers, at the corps main and alternate signal centers (fig. 6–2, 6–3).

b. Organization. Two command radio relay platoons are organic to the command radio relay and cable company (fig. 6–1). Each platoon is organized with three major elements (fig. 6–8).

(1) Command radio relay platoon headquarters.

(2) Multiplex terminal section.

(3) Command radio relay terminal section.

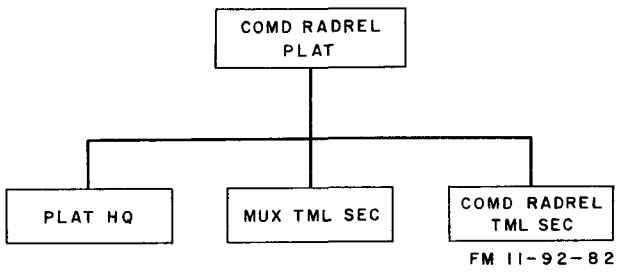

Figure 6–8. Organization of command radio relay platoon, command radio relay and cable company.

c. Operation. The command radio relay platoon operates on the basis of a 24-hour day. Its sections have functional teams that perform half of the collective mission stated in *a* above. One entire platoon normally operates at the corps main signal center. The other platoon is based at the corps alternate signal center, where the majority of its teams operate their terminals, and has some of its teams deployed at the corps main signal center. Together the two platoons are responsible for 12 multichannel radio terminals (multichannel radio repeaters used as terminals) including 12 associated multiplexers and 24 associated telephone repeaters (as required for extended distances in the interconnection of these associated equipments). Cable teams (para 6–16) of the cable and wire platoons install and maintain the spiral-four cable required for these interconnections.

6–19. Command Radio Relay Headquarters

The command radio relay platoon headquarters provides normal command and control for the platoon activities. The platoon leader coordinates with the platoon leaders of all other platoons of the company to assure effective interoperation of multichannel communications equipments and the proper interconnection of terminal equipments. The platoon sergeant assists the platoon leader by directing activities in accordance with established SOP and the policies and procedures laid down by the platoon leader. Each platoon headquarters has power generator specialists and powermen to attend and perform onsite organizational maintenance on the platoon power generating equipments. The platoon leader may direct his motor vehicle driver to attend a multichannel terminal station when necessary.

6–20. Multiplex Terminal Section

The multiplex terminal section of the command radio relay platoon installs, operates, and maintains six multiplex terminals used in conjunction with six radio repeater sets (para 6–21) to terminate the multichannel radio systems. The section also installs, operates, and maintains 12 telephone carrier repeaters, as required, between the radio repeater sets and the multiplexers. This section has a section chief and six multiplex terminal teams. Each team has a multiplex terminal chief and two multiplex equipment attendants for 24-hour operation of one terminal. In addition, the section has two multiplex equipment attendants to operate the carrier repeater equipments.

6–21. Command Radio Relay Terminal Section

The command radio relay terminal section of the command radio relay platoon installs, operates, and maintains 6 of the 12 radio equipments employed at corps main and alternate signal centers in conjunction with multiplex terminals to terminate the corps command multichannel radio systems. This section has a section chief and six multichannel radio teams. Each team has a multichannel radio team chief and two radio relay attendants for sustained operation of one radio set.

Section V. FORWARD RADIO RELAY PLATOON OPERATIONS

6-22. Forward Radio Relay Platoon

There are two forward radio relay platoons in the command radio relay and cable company (*b* below). This discussion applies equally to each platoon, or to an element of each platoon, except where it is indicated that particular statements apply collectively to both platoons. There are two division radio relay support sections in each platoon. Keep this in mind while reading about these sections (*b* below and para 6-24).

a. Mission. The two forward radio relay platoons install, operate, and maintain the multichannel radio terminal equipments provided to terminate corps command multichannel radio systems at a corps tactical signal center and at headquarters of units (except artillery) subordinate to the corps (fig. 4-3, 6-4, 6-5, 6-6). These platoons also install, operate, and maintain multichannel radio repeaters as required in these systems.

b. Organization. Two forward radio relay platoons are organic to the command radio relay and cable company (fig. 6-1). Each platoon is organized with five major elements (fig. 6-9).

(1) Forward radio relay platoon headquarters.

(2) Two division radio relay support sections.

(3) Radio relay repeater section.

(4) Radio relay support section.

c. Operation. The forward radio relay platoon conducts its operations on a continuous basis. Elements of the platoon operate simultaneously at division signal centers, in the vicinity of other corps units, and at intermediate repeater sites of the corps command multichannel radio systems. Each platoon can install, operate, and maintain two multichannel radio terminals at each of two division main signal centers, one at each of two division alternate signal centers, and one for each of two other headquarters. Each platoon also can install, operate, and maintain six multichannel radio repeaters at intermediate sites as required. Together the two platoons are responsible for 16 multichannel radio terminals and 12 multichannel radio repeaters. Wire teams (para 6-17) of the cable and wire platoons install and maintain the field cable or wire required for interconnecting the multichannel radio terminals and the supported headquarters switchboard or signal center PATCENT.

6-23. Forward Radio Relay Platoon Headquarters

The forward radio relay platoon headquarters provides normal command and control for the platoon activities. The platoon leader coordinates with the platoon leaders of the cable and wire platoons and the command radio relay platoons to assure necessary installation of cable or wire from terminals to supported units, and to assure effective interoperation of his terminal and repeater equipments with those at the corps signal centers. The platoon sergeant assists the platoon leader by directing platoon activities in accordance with established SOP and the platoon leader's policies and procedures. Each platoon headquarters has four powermen to perform onsite organizational maintenance on the platoon power generators. The platoon leader may require his motor vehicle driver to assist, when necessary, in attending the operation of multichannel radio terminals. Deployment of the teams in this platoon over extended distances requires the platoon leader and his assistant to expend much of their supervisory effort in coordination and inspection of team activities.

6-24. Division Radio Relay Support Section

There are two division radio relay support sections in each of the two forward radio relay platoons (para 6-22*b*). Each section has a section chief, a powerman, and three multichannel radio teams. Each team has a team chief, two radio relay attendants, and one multichannel radio terminal. One section provides the three terminals required to terminate the corps command multichannel radio systems at signal centers of one division. Two teams of one section install, operate, and maintain two terminals at a division main signal center to terminate two 12-channel systems from the corps main signal center. The third team of the same

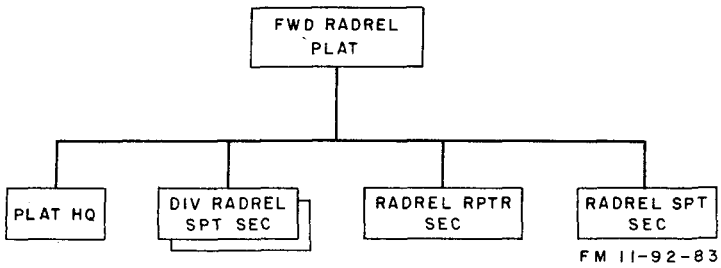

Figure 6–9. Organization of forward radio relay platoon, command radio relay and cable company.

section installs, operates, and maintains one terminal at the division alternate signal center to terminate the 12-channel system from the corps alternate signal center. Thus, the 2 forward radio relay platoons collectively have 4 of these sections with 12 teams that provide 12 multichannel radio terminals for the 4 divisions (3 terminals for each) attached to a corps. The powerman authorized each section performs onsite organizational maintenance on the power generating equipments of the terminal stations.

6–25. Radio Relay Repeater Section

The radio relay repeater section of the forward radio relay platoon installs, operates, and maintains six multichannel radio repeaters as required. Requirements for these repeaters may occur most frequently in the command communications multichannel systems between the corps and division signal centers. Collectively, the two radio relay repeater sections (one in each forward radio relay platoon) are responsible for 12 multichannel radio repeaters for use in these systems, or elsewhere in the corps multichannel radio systems as required. Each section has a section chief and six multichannel radio repeater teams. Each team has a team chief and two radio relay attendants for continuous operation of one multichannel radio repeater. These teams usually operate at isolated sites. For this reason, the section has a motor vehicle for resupply of stations that are accessible to vehicles. When these sites are inaccessible to motor vehicles, the battalion aircraft may satisfy resupply and relief requirements. In emergencies the vehicle driver may be directed to attend a multichannel radio repeater.

6–26. Radio Relay Support Section

The radio relay support section of the forward radio relay platoon installs, operates, and maintains two multichannel radio terminals. The section has a section chief, a driver qualified as a radio relay attendant, and two teams. Each team has a team chief and two radio relay attendants for continuous operation of one multichannel terminal. Collectively, the two forward radio relay platoons have four of these teams. With these teams, the two platoons provide one terminal to terminate a 12-channel corps command system at each of 4 sites (*a–d* below).

a. Corps tactical signal center.
b. Aviation group headquarters.
c. Separate brigade headquarters.
d. Armored cavalry regiment.

Section VI. COMMAND RADIO RELAY AND CABLE COMPANY INTERNAL COMMUNICATIONS

6–27. Internal Radio Communications

The command radio relay and cable company has seven FM-VOICE radio nets (*a–d* below). The company commander may transmit either in his company command net or, as required, in the battalion command net (fig. 3–3) by switching his transmitter from one frequency to the other. He monitors the battalion command net with the second receiver of his set. Platoon leaders of all six platoons monitor the company command net with their second receivers and switch transmitter frequency from their platoon nets when required to transmit in the company command net.

a. Command radio relay and cable company command net (fig. 6–10).

b. Cable and wire platoon command net (two nets, fig. 6–11).

c. Command radio relay platoon command net (two nets, fig. 6–12).

d. Forward radio relay platoon command net (two nets, fig. 6–13).

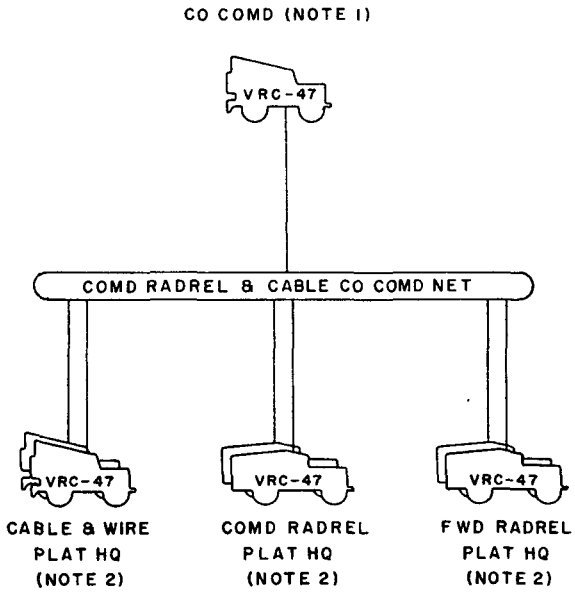

Figure 6–10. Typical command radio relay and cable company command radio net.

6–28. Internal Telephone Communications

The command radio relay and cable company telephone communications system (fig. 6–14) is provided by the company headquarters section. When sections operating at division signal centers or other headquarters require local telephone service, it is obtained through coordination with the supported headquarters. The illustrated trunk to higher headquarters normally comes from the corps signal battalion switchboard (fig. 3–2).

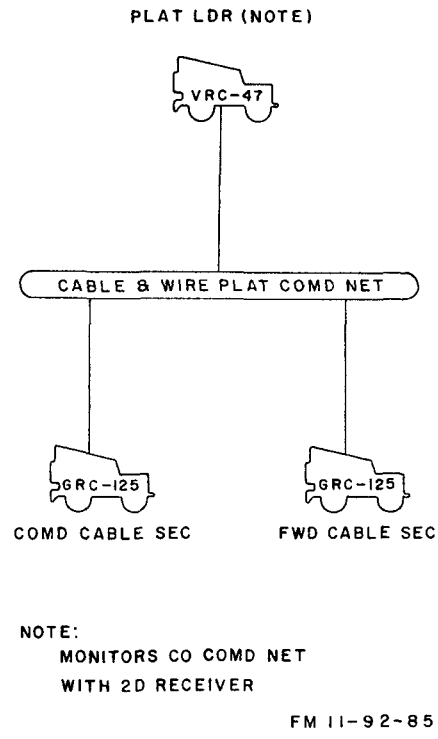

Figure 6–11. Typical cable and wire platoon command radio net.

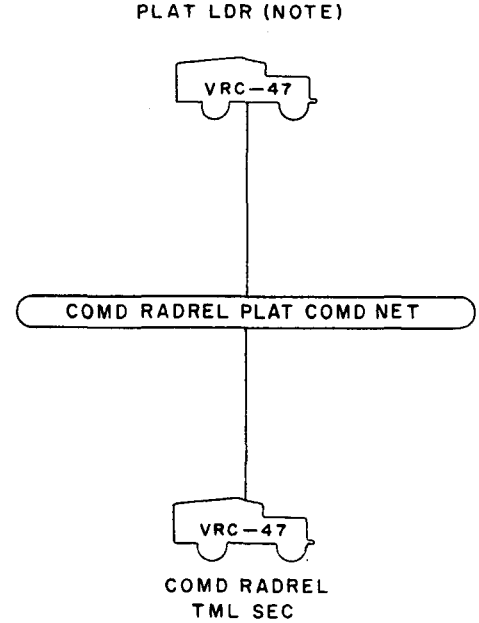

Figure 6–12. Typical command radio relay platoon command radio net.

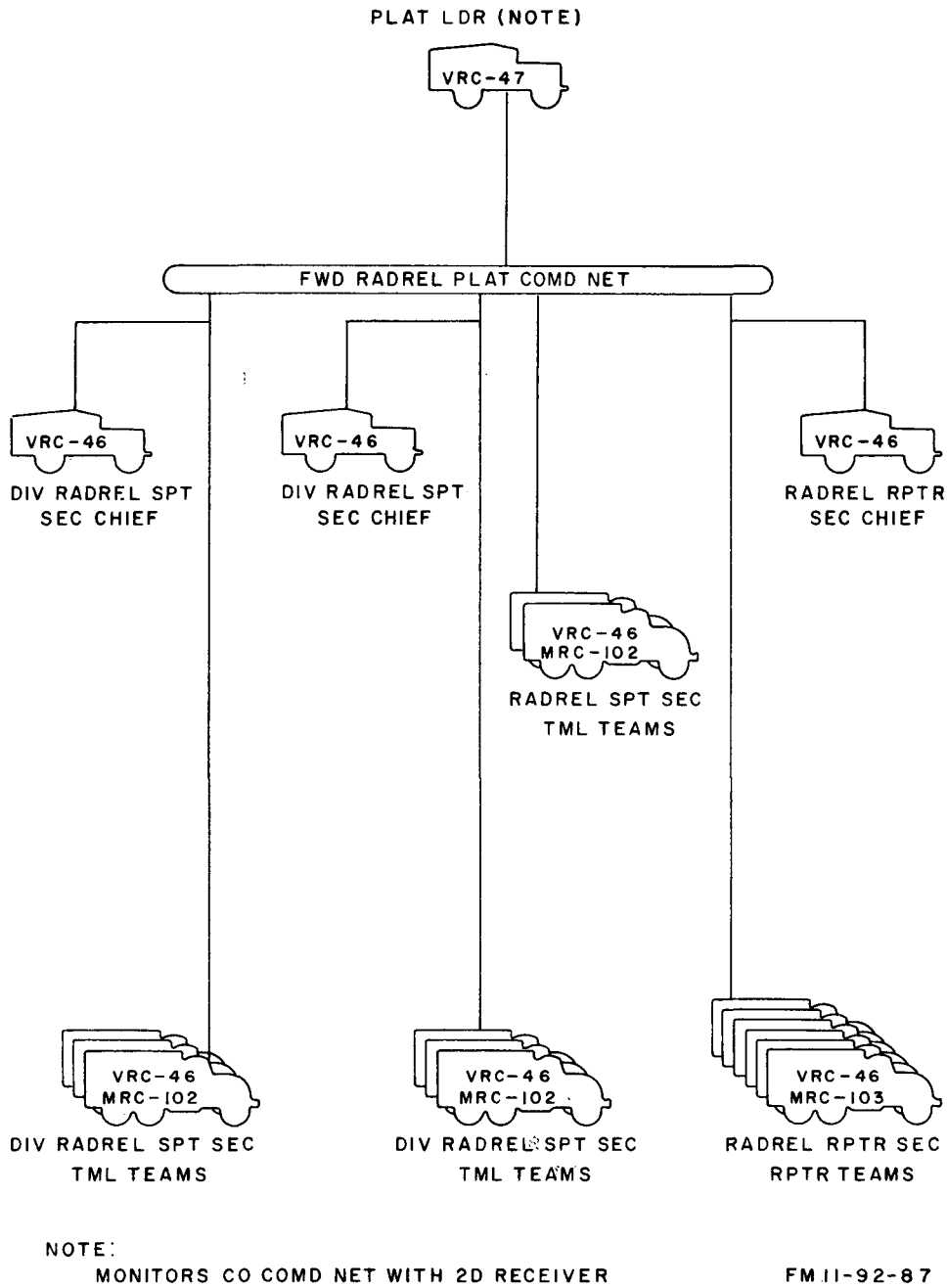

Figure 6–13. Typical forward radio relay platoon command radio net.

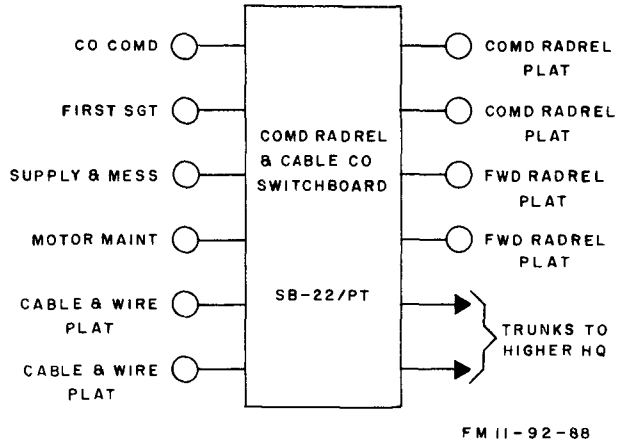

Figure 6-14. Typical command radio relay and cable company internal telephone system.

CHAPTER 7

COMMAND ARTILLERY RADIO RELAY COMPANY

Section I. THE COMPANY

7-1. General

This chapter describes the authorized organization of a command artillery radio relay company. It presents a method of employing the company to provide multichannel radio communications trunks between corps artillery headquarters and the headquarters of major corps artillery organizations. The specific circumstances of a corps operation may require modification of the represented method to satisfy the requirements generated by the particular tactical situation.

7-2. Assignment and Control

Under TOE 11-15, one command artillery radio relay company is organic to a corps signal battalion. Command channels between the company and battalion headquarters are normal for a separate battalion (para 3-14).

7-3. Mission

The mission of a command artillery radio relay company is to provide multichannel communications systems from corps artillery headquarters to the headquarters of major subordinate corps artillery units.

7-4. Full Strength Capabilities

a. TOE Variations. The TOE for the command artillery radio relay company is published with two variations (para 6-4*a*)—SRC-19G610 (medium channel-capacity equipments) and SRC-19G620. In this chapter, the company is described as organized under the SRC-19G620.

b. Capabilities. When the command artillery radio relay company is organized at full TOE strength, it is approximately 80 percent mobile and can perform its mission (para 7-3) within specified capabilities (*c*—*f* below).

c. Multichannel Systems. The company installs, operates, and maintains command multichannel radio systems, including—

(1) Six 12-channel systems established throughout the corps artillery organization as follows:

(*a*) Four systems between corps artillery headquarters and headquarters of corps artillery groups (one system for each group).

(*b*) One system between corps artillery headquarters and the corps artillery missile battalion.

(*c*) One system between corps artillery headquarters and the corps field artillery target acquisition battalion.

(2) Three multichannel radio repeater facilities to use as required in extending the ranges of systems between corps artillery headquarters and headquarters of corps artillery groups.

d. Multichannel Terminals. The company installs, operates, and maintains terminals for the corps command multichannel communications system. These terminate the systems at corps artillery headquarters as follows:

(1) Twenty-four channels (two 12-channel systems) from the corps main signal center.

(2) Twenty-four channels (two 12-channel systems) from the corps alternate signal center.

e. Communications Patching Central. The company installs, operates, and maintains a communications PATCENT. This central provides circuit patching and control of terminal facilities and communications facilities between the echelons of corps headquarters and

corps artillery headquarters, and for the corps artillery command multichannel radio systems.

f. Field Wire and Cable. The company installs and maintains field wire and cable to support the corps artillery multichannel radio systems, as follows:

(1) Spiral-four cable from the multichannel radio terminal site to multiplexer equipment and to the PATCENT at corps artillery headquarters.

(2) Field wire and 26-pair cable from the multichannel radio terminal stations to the telephone switchboards at headquarters of major subordinate corps artillery units.

g. Internal Support. Internal support provided by the company includes mess facilities and organizational maintenance of organic arms, motor vehicles, electronics equipment, and power generators.

7–5. Reduced Strength Capabilities

The command artillery radio relay company may be organized at TOE strength and equipment authorization level 2 or 3 (para 3–6). In such instances, the operational capabilities of this company are reduced to approximately 90 or 80 percent of those at full strength.

7–6. Defense Capability

Individuals of the command artillery radio relay company can engage in effective, coordinated defense of its area and its signal installations (para 2–19). Such activity, however, may cause a corresponding curtailment of the unit mission capabilities.

7–7. Capability Limitations

Certain functions necessary for satisfaction of corps communications requirements, and certain required service support functions, are outside the capabilities given the command artillery radio relay company by its TOE. For these functions, the company depends on supplementation provided from outside sources. It depends on—

a. The command radio relay and cable company for the corps terminals of the multichannel radio links to the corps main and alternate signal centers.

b. The corps and field army communications systems for trunks through the division communications systems to division artillery headquarters. Principally these are the—

(1) Corps command multichannel communications system.

(2) Field army area communications system, reached through the corps multichannel communications system.

c. The battalion headquarters and headquarters company for—

(1) Battalion administrative, personnel, and supply support.

(2) Religious services.

(3) Battalion organizational maintenance of motor vehicles and power generators.

(4) Battalion organizational and direct support maintenance of organic electronics equipment.

d. Designated combat service support units for medical and dental services, supplemental transportation, and direct support maintenance of motor vehicles, power generators, and other nonelectronics items of equipment.

7–8. Organization

The command artillery radio relay company is organized as a category II unit. The organization (TOE 11–19) has three major elements (fig. 7–1).

a. Company headquarters.

b. Cable and wire platoon.

c. Radio relay platoon.

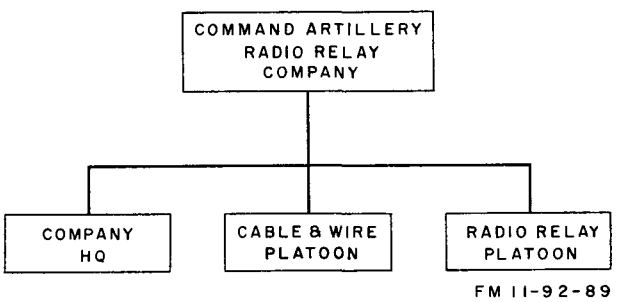

Figure 7–1. Command artillery radio relay company organization.

7–9. Operation

a. Function. In fulfilling its function, the command artillery radio relay company extends the corps multichannel radio communications network throughout the corps artillery organization (fig. 2–6, 2–8, 7–2, 7–3). This provides multichannel radio communications

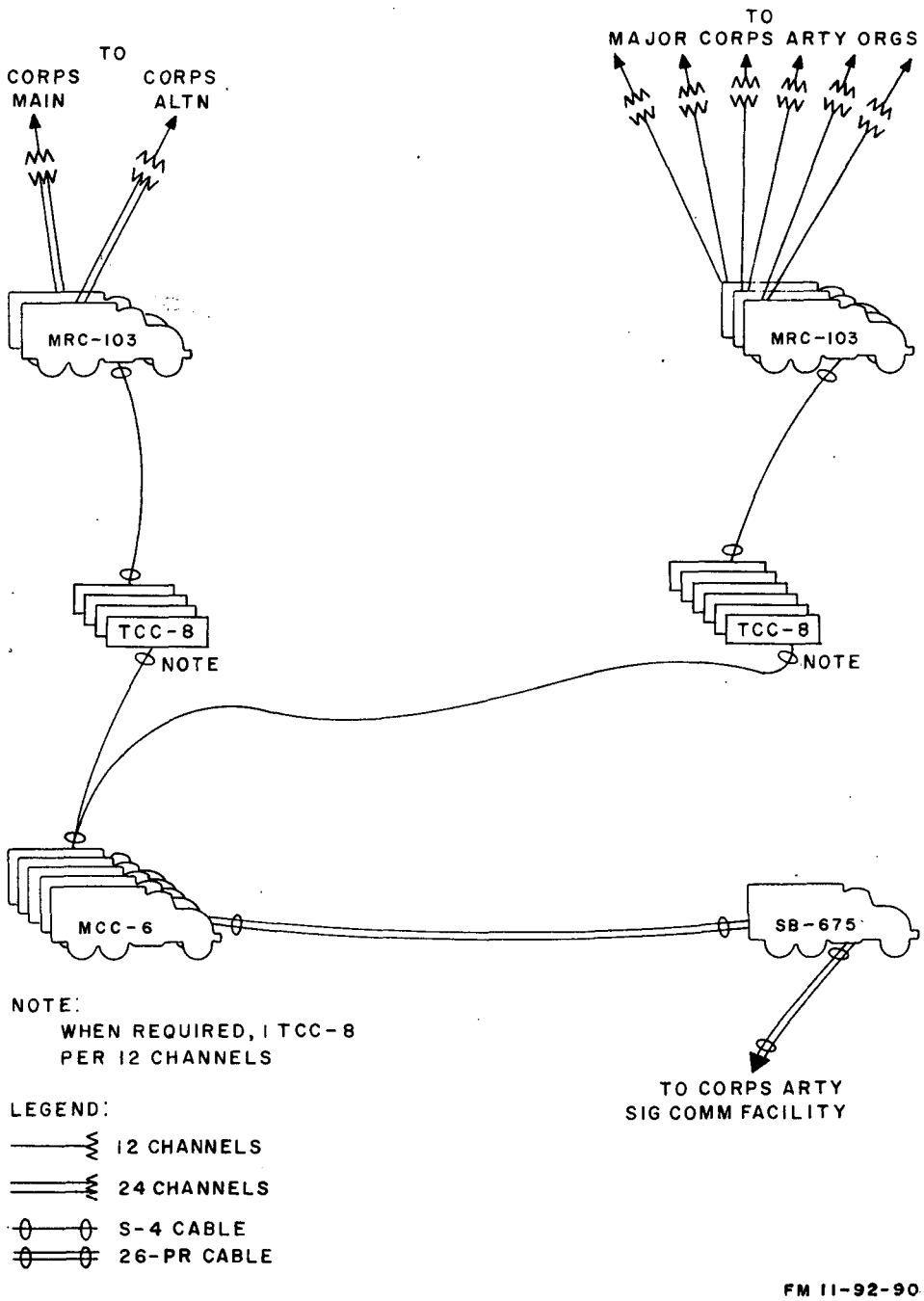

Figure 7-2. Facilities provided at corps artillery headquarters by command artillery radio relay company.

for the corps artillery commander to exercise his command and control of the major corps artillery units.

b. Employment. This company is employed at and between the corps artillery headquarters and the headquarters of six major corps artillery units. The company organizes functionally in teams according to the facilities each provides. In general, one multichannel radio terminal team operates at each of the six major corps artillery units, while the remainder of the company operates in the vicinity of corps artillery headquarters. When any multichannel radio system of this company needs extension through one or more repeater stations, the necessary number of multichannel radio repeater teams (up to the three that are organic to the company) are deployed as required to satisfy the need. Teams at corps artillery headquarters provide the communications PATCENT through which they bring trunks from corps artillery units and corps signal centers into the corps artillery headquarters communications center.

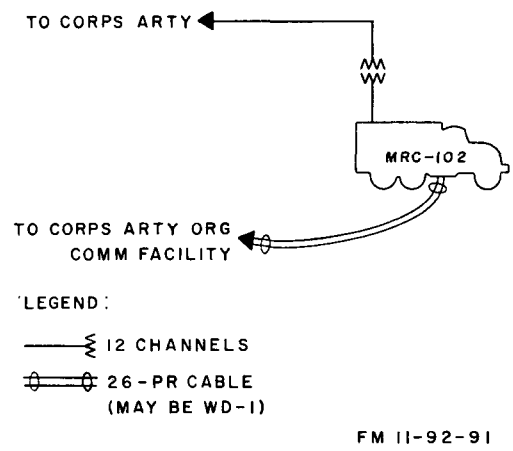

Figure 7–3. Facilities provided at headquarters of corps artillery units by command artillery radio relay company.

Section II. COMPANY HEADQUARTERS OPERATIONS

7–10. Command Artillery Radio Relay Company Headquarters

The company headquarters provides command and administrative control and support that is normal (para 3–11) for an organic company of a separate battalion. Company headquarters normally is located in the vicinity of the corps artillery headquarters.

7–11. Administration and Logistics

The company headquarters conducts its administrative and logistical operations with normal support from comparable activities at battalion level (para 3–11). In these operations, the physical separation of the company headquarters from the battalion supply activity is a factor. Another factor is the physical separation of six multichannel radio terminal teams and as many as three multichannel radio repeater teams operating away from the company headquarters. Further, company headquarters activities are adapted to the 24-hour-per-day operations of the other elements of the company. Supply operations involve handling a heavy volume of electronics and tactical vehicle repair parts to accommodate the requirements generated by sustained operation of the company communications equipments and motor vehicles.

7–12. Command

The company commander receives his orders through normal command channels for a separate battalion. He extends his control through the commissioned and noncommissioned officers of the company, making the maximum practical use of company and platoon standing operating procedures for the company mission and support activities. (See also para 3–14*a* and *b*).

7–13. Coordination

The communications facilities provided by this company interconnect with facilities provided by the command operations company and the command radio relay and cable company. They also interconnect with the communications facilities of the corps artillery headquarters and

the headquarters of major corps artillery units. These interconnections all require coordination with the units involved. (See also para 3–14*c*, *d*, and 6–13.)

Section III. CABLE AND WIRE PLATOON OPERATIONS

7–14. Cable and Wire Platoon

a. Mission. The cable and wire platoon of the command artillery radio relay company installs and maintains all multipair cable and field wire required in the operational mission of the company (*c* below).

b. Organization. One cable and wire platoon is organic to the command artillery radio relay company (fig. 7–1). The platoon organization has three major elemtnts (fig. 7–4).

(1) Cable and wire platoon headquarters.
(2) Command cable section.
(3) Forward cable section.

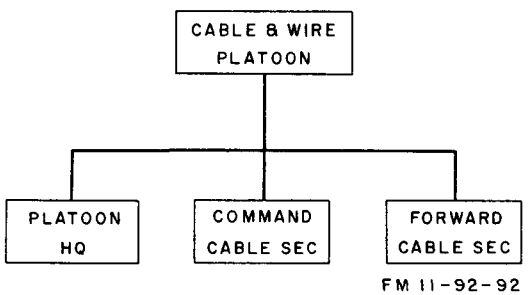

Figure 7–4. Organization of cable and wire platoon, command artillery radio relay company.

c. Operation. Platoon operations take place in the vicinity of corps artillery headquarters and the headquarters of the six major corps artillery organizations. These operations include the interconnection of all multiplex terminal equipment at the corps artillery headquarters with the communications PATCENT provided by the other platoon of this company. They also include the interconnection of multichannel radio equipments, telephone carrier repeaters, and multiplex terminals provided by this company at corps artillery headquarters. They further include the connection of multichannel radio terminals provided by this company at subordinate corps artillery unit headquarters to the unit switchboards at those headquarters. Sections of the platoon are organized with functional teams for sustained operation.

7–15. Cable and Wire Platoon Headquarters

The cable and wire platoon headquarters provides normal command and control for the platoon activities. The platoon leader coordinates all cable and wire requirements for the company commander. He reconnoiters cable and wire routes, assigning appropriate teams for the required installations. The platoon sergeant assists the platoon leader in these functions and records cable and wire installations and terminations. The platoon headquarters vehicle driver is a qualified wireman. He may be directed by the platoon leader to perform wireman duties when necessary of when desirable to maintain his skill as a wireman. Deployment of the teams in this platoon at numerous locations requires the platoon leader and platoon sergeant to expend much of their supervisory effort in coordination and inspection of team activities.

7–16. Command Cable Section

The command cable section of the cable and wire platoon installs and maintains spiral-four and 26-pair field cable and field wire principally at the corps artillery headquarters area (fig. 7–2). However, the platoon leader may direct the section to perform these functions at corps artillery unit headquarters when necessary. At corps artillery headquarters, the section establishes 26-pair cable circuits between the radio relay platoon multiplex terminals and PATCENT and from this PATCENT to the corps artillery headquarters communications facilities. Installations and maintenance of spiral-four cables from the radio relay platoon multichannel radio equipments to telephone carrier repeaters (when installed) and multiplex terminals are functions of this section. The sec-

tion has a section chief and two cable teams. Each team has a team chief and five wiremen.

7-17. Forward Cable Section

The forward cable section of the cable and wire platoon installs and maintains field wire and 26-pair cable from multichannel radio terminals at headquarters of the six major corps artillery units (fig. 7-3) to the supported headquarters switchboards. This section has a section chief and four three-man wire teams. Each team has a chief and two other wiremen.

Section IV. RADIO RELAY PLATOON OPERATIONS

7-18. Radio Relay Platoon

a. Mission. The radio relay platoon of the command artillery radio relay company installs, operates, and maintains the corps artillery command multichannel communications system terminal and repeater equipments (fig. 7-2, 7-3). The platoon mission also includes installation, operation, and maintenance, at the corps artillery headquarters, of terminals for the corps command multichannel communications systems.

b. Organization. One radio relay platoon is organic to the command artillery radio relay company (fig. 7-1). The platoon has four major organizational elements (fig. 7-5).

(1) Radio relay platoon headquarters.

(2) Multiplex terminal section.

(3) Command radio relay terminal and repeater section.

(4) Forward radio relay terminal section.

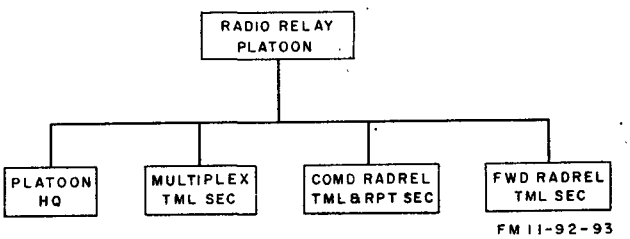

Figure 7-5. Organization of radio relay platoon, command artillery radio relay company.

c. Operation. The radio relay platoon operates on the basis of a 24-hour day. Platoon operations converge at the corps artillery headquarters, but teams of the platoon perform their duties at the command posts of six major subordinate corps artillery units. The platoon installs, operates, and maintains six multichannel radio systems between corps artillery headquarters and these six subordinate command posts (fig. 2-8). In addition, the platoon performs a technical control function for the corps signal battalion at the corps artillery headquarters. Corps command circuits terminated by this platoon at corps artillery, as well as the corps artillery command circuits, are within the scope of this function. The platoon depends upon the cable and wire platoon of its parent company for interconnection of its facilities by spiral-4 and 26-pair cable. Also, this platoon depends upon the cable and wire platoon for interconnection of its terminal facilities with the supported headquarters signal communications facilities. At the corps artillery headquarters, the platoon uses multichannel radio repeater sets, in conjunction with multiplex terminals, to terminate the multichannel systems (fig. 7-2). At subordinate corps artillery units, the platoon uses multichannel radio terminals having component multiplex terminal equipment for this purpose (fig. 7-3).

7-19. Radio Relay Platoon Headquarters

a. Command and Control. The radio relay platoon headquarters provides normal command and control for platoon activities. The platoon leader coordinates his platoon activities with the cable and wire platoon. He also coordinates with the corps artillery signal officer and with signal communications elements of the supported subordinate corps artillery headquarters. He supervises siting and operation of the multichannel communications equipments and technical control facilities to assure effective trunk circuits for corps artillery signal requirements. The platoon sergeant assists the platoon leader by directing the activities of the platoon headquarters teams and the teams that install, operate, and maintain multichannel radio and multiplexer equipments.

b. Technical Control Team. The platoon headquarters has a technical control team. This team has a circuit control sergeant, who is the team chief, and three tactical circuit controllers for 24-hour operation of the communications PATCENT provided by this platoon at the corps artillery command post (fig. 7–2).

c. Multichannel Communications Equipment Maintenance Team. Two radio relay equipment repairmen make up the multichannel communications equipment maintenance team. These men perform onsite organizational maintenance on all the multichannel radio and multiplexer equipments of the platoon (fig. 7–2, 7–3). They also perform organizational maintenance on the platoon radio sets used for the platoon internal signal communications (para 7–23).

d. Power Generator Maintenance Team. The platoon headquarters also has a power generator maintenance team of six powermen. These men perform onsite organizational maintenance required by the platoon power generators located at all platoon operation sites. These locations are at corps artillery headquarters and major subordinate artillery unit command posts, and at a maximum of three multichannel radio repeater sites.

7–20. Multiplex Terminal Section

The multiplex terminal section of the radio relay platoon installs, operates, and maintains the three multiplex terminals and six associated telephone carrier repeaters that terminate the corps artillery command multichannel radio systems at the corps artillery headquarters (fig. 7–2). The section performs the same functions for the two multiplex terminals and four telephone carrier repeaters that terminate the corps command multichannel systems at corps artillery. This section has a section chief and five multiplex terminal teams. Each team has a team chief and two carrier equipment attendants for 24-hour operation of one of the multiplex terminals. The section has 2 additional carrier equipment attendants to maintain operation of the 10 associated carrier repeaters.

7–21. Command Radio Relay Terminal and Repeater Section

The command radio relay terminal and repeater section of the radio relay platoon installs, operates, and maintains the platoon multichannel radio terminals (5 radio repeater sets employed as ten 12-channel terminals) at the corps artillery headquarters (fig. 7–2). This section also installs, operates, and maintains three multichannel radio repeater stations, as required between terminals in the six artillery command systems established by the platoon. The section has a section chief and eight teams. Each team has a team chief and two radio relay attendants for 24–hour operation of one of the multichannel radio terminal or repeater stations.

7–22. Forward Radio Relay Terminal Section

The forward radio relay terminal section of the radio relay platoon installs, operates, and maintains six multichannel radio terminal stations. Each of these stations (fig. 7–3) is at one of the major subordinate corps artillery units (para 7–4*c*), and each terminates one of the 12–channel systems from corps artillery headquarters (fig. 2–8). This section has a section chief who directs the activities of six teams. Each team has a team chief and two radio relay attendants for 24–hour operation of one of the six multichannel terminals.

Section V. COMMAND ARTILLERY RADIO RELAY COMPANY INTERNAL COMMUNICATIONS

7–23. Internal Radio Communications

The command artillery radio relay company has two FM–VOICE radio nets. The company commander has two vehicular radio sets. One of these sets has two receivers, one for monitoring the corps signal battalion command net (fig. 3–3) and one for monitoring the corps artillery command net. The company commander switches the transmitter frequency of this set to transmit in either of these nets as required. The company commander has another set, in the same vehicle, to operate in his own

company command net. The cable and wire platoon has no internal radio net. This platoon's forward cable teams operate at the same sites as the forward radio relay terminal teams of the radio relay platoon. Each of these forward radio relay terminal teams has a radio station and can pass messages to and from the teams of the cable and wire platoon as required. The two radio nets of this company are the command artillery radio relay company command net and the radio relay platoon command net (fig. 7–6 and 7–7).

7–24. Internal Telephone Communications

The command artillery radio relay company telephone communications system (fig. 7–8) is provided by the company headquarters section. When teams operating at subordinate corps artillery units require local telephone service, it is obtained through coordination with the supported headquarters. The illustrated trunk to higher headquarters normally goes to the corps artillery headquarters switchboard (fig. 3–2), through which the company obtains trunk service into the corps telephone system.

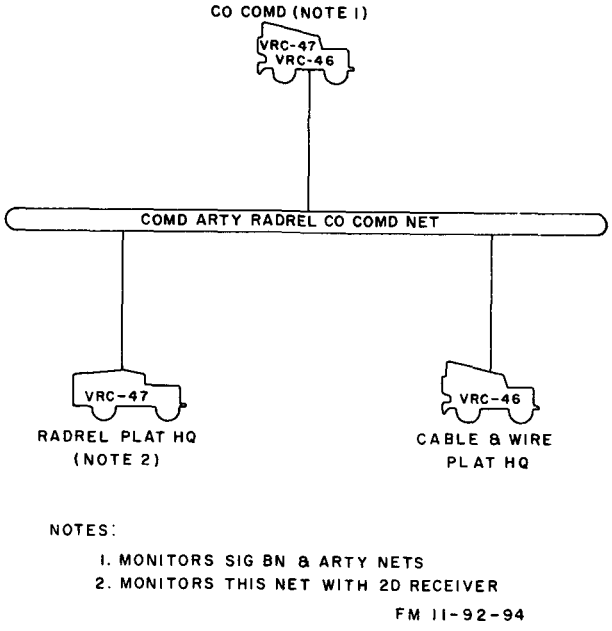

Figure 7–6. Typical command artillery radio relay company command net.

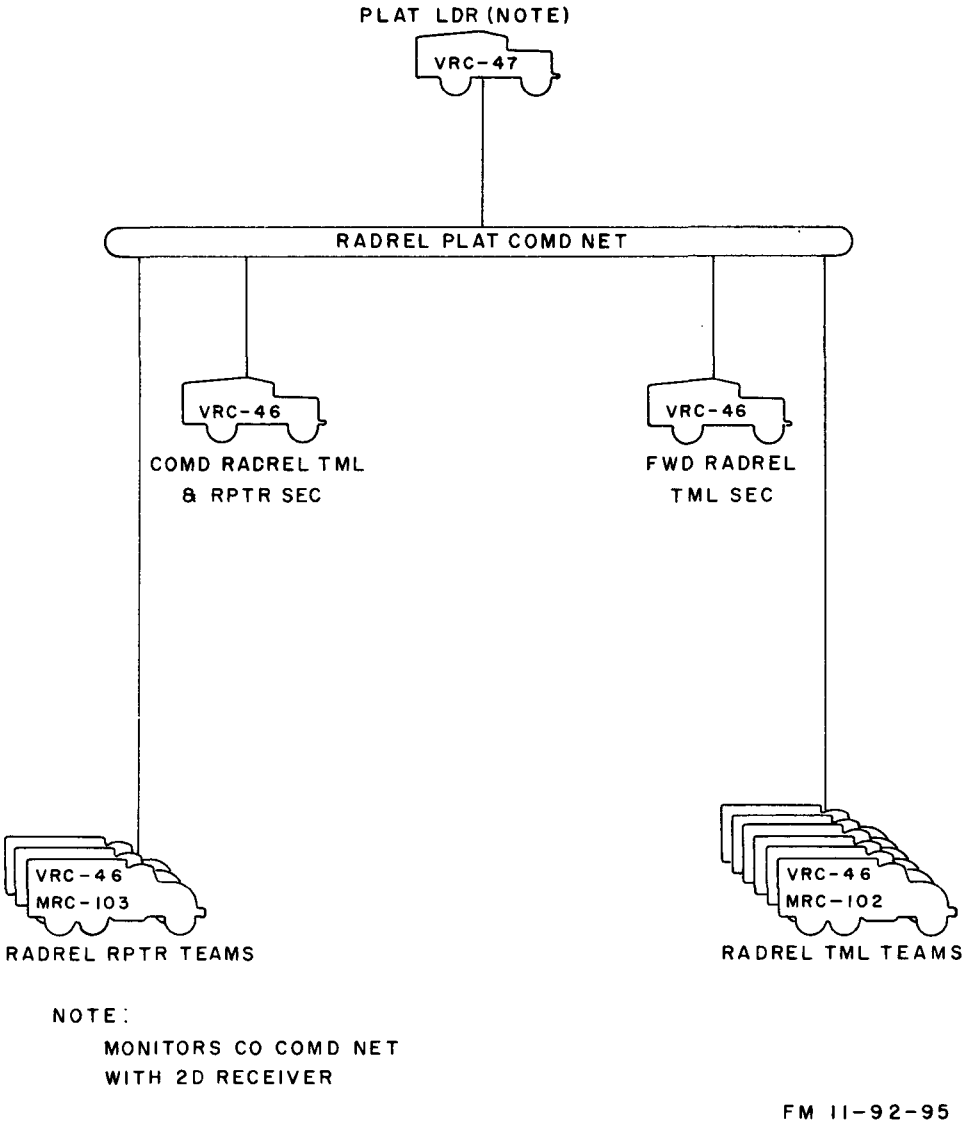

Figure 7-7. Typical command radio net of radio relay platoon, command artillery radio relay company.

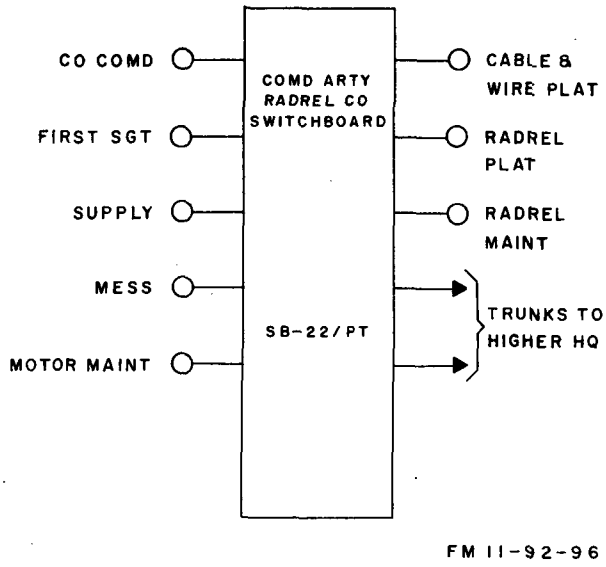

Figure 7-8. Typical command artillery radio relay company internal telephone system.

CHAPTER 8
COMMUNICATIONS SECURITY

Section I. REQUIREMENT FOR COMMUNICATIONS SECURITY

8–1. Definition of Communications Security
Communications security is the protection that results from all measures designed to deny unauthorized persons valuable information which might be derived from the possession and study of telecommunications, or to mislead unauthorized persons in their interpretations of the results of such study. Communications security includes transmission security, cryptographic security, and physical security.

8–2. Electronic Warfare
a. Basis for Electronic Warfare. Since intensive use of tactical communications and electronic devices by the Army and all potential and real enemy forces has made tactical military forces dependent upon such devices, signal communications has become a critical facet of command and control. Surveillance and weapons systems depend largely upon electronic devices such as radar and infrared. Electronic warfare tactics and techniques include actions to degrade or destroy the effective use of enemy communications-electronics systems and at the same time to insure the effective use of friendly communications-electronics equipments and systems.

b. The Threat. Electronic warfare consists of electronic countermeasures (ECM) and electronic counter-countermeasures (ECCM). Appreciation of electronic warfare also requires an understanding of communications intelligence (COMINT) and communications security (COMSEC). Electronic warfare is a potent weapon that can assist a commander in the accomplishment of his mission; however, it also is a potent weapon that can help the enemy to defeat this commander. The importance of ECM and ECCM and of the related COMINT and COMSEC therefore is evident. Electronic warfare will continue to be used to some degree in all wars. For a detailed discussion of electronic warfare, see FM 32–20.

c. Electronic Countermeasures and Counter-Countermeasures. The field commander uses radio communications to control his forces during an assault. The enemy may recognize the importance of radio communications to this operation and use his own transmitter to introduce interference on the assaulting commander's radio net frequency. In such an instance, radio communications is the electronic measure, and the enemy interference is the electronic countermeasure. If the operators of the radio net being jammed make adjustments and continue to pass radio traffic despite the jamming (or if they shift to another frequency to avoid the jamming), they are using electronic counter-countermeasures.

d. Communications Intelligence. Enemy action taken to determine when the radio communications is essential to accomplish the assault mission falls within the scope of enemy communications intelligence. Determining the communications structure of an assault force, finding the electronic-signal nature of the assault force's communications equipment and systems, and obtaining other technical information to support enemy ECM activity, constitute a portion of the enemy's communications intelligence activity. Thus enemy COMINT activities support enemy electronic countermeasures actions.

e. Communications Security Training. Action taken to counteract enemy communications intelligence efforts is communications security. COMSEC is necessary in all signal communications to keep at a minimum the in-

telligence the enemy can produce through his COMINT activity, and thus limit the technical information that can support his ECM and other operations. *All* personnel involved in communications either full time or intermittently must be thoroughly indoctrinated by training in approved COMSEC and ECCM procedures.

8–3. Communications Security Support of Electronic Counter-Countermeasures

Communications security practices provide an effective means of limiting the amount of information available to the enemy for his ECM operations. Nevertheless the enemy may use ECM even when such operations are not supported by sufficient technical information. In such an instance, COMSEC is important because it reduces the enemy's ability to use his COMINT for measuring the effectiveness of his ECM. For example, while the enemy jams a radio net, he also uses his COMINT facilities to determine the reaction of the radio operators to this jamming. Under this condition, the degree of confusion evidenced by unusual radio operator reactions tells the enemy COMINT or jammer operator about the effectiveness of his ECM. Without such information, the enemy has much difficulty in determining the effectiveness of his jamming. Consequently, radio operators must avoid using any unusual operating practices that can reveal when their net is being jammed.

Section II. COMMUNICATIONS SECURITY RESPONSIBILITIES

8–4. Responsibility for Communications Security

a. Command Responsibility. Communications security is a command responsibility. However, every individual engaged in the preparation of material for transmission or in the actual transmission of material is responsible for his own compliance with procedures governing preparation, transmission, and safeguarding of communications. For a detailed discussion of communications responsibilities, see FM 32–5.

b. Staff Assistance. In carrying out his communications security responsibilities, the commander normally is assisted by the signal officer and by his intelligence officer who plans, coordinates, and exercises staff supervision over security matters within the command. To fulfill his responsibility for communications security, the commander must perform the following functions ((1)–(5) below) or designate someone to perform them for him.

(1) Maintain a continuous control system to account for classified information, equipment, and materials.

(2) Conduct periodic and thorough inspections to determine the adequacy of physical security measures for the protection of classified information and cryptographic equipment and material and to insure that cryptosystems are properly used.

(3) Develop adequate emergency plans, including emergency destruction plans.

(4) Consider communications security requirements in all operation planning.

(5) Take remedial action to eliminate causes of communications security violations.

c. Individual Responsibility. Responsibility rests with each person of the command to assist the commander in fulfilling his responsibilities. The security consciousness of the individual is an important factor, because communications systems cannot overcome the effects of carelessness. Discussion of classified information with unauthorized persons or in inappropriate places where unauthorized persons may overhear constitutes a great hazard to security. Therefore, it is the responsibility of the individual to report any apparent violation of, or weakness in, communications security to his superior.

8–5. Security Classification

Security classification is based on the degree of danger to national security which would result from unauthorized disclosure of military or other official information. The classification system establishes a standard for protection during handling, storage, and dissemination of information belonging to each classification. Refer to AR 380–5 and AR 380–6 for detailed discussion of security classifications.

8–6. Security Measures

Security measures for the protection of military information, equipment, and material include defense against capture, salvage, theft, espionage, observation, photography, interception, direction finding, traffic analysis, cryptonalysis, and imitative deception. All personnel must be alert at all times to provide adequate protection of defense information, equipment, and material. This is provided for by the establishment of high training standards to prevent carelessness and laxity.

8–7. Surveillance

Surveillance is accomplished through the detection, reporting, and evaluation of certain insecurities which may adversely affect the security of COMSEC material. Prompt reporting of insecurities is essential, for if a cryptosystem is compromised, it must be withdrawn immediately, and the information encrypted therein must be reviewed for necessary security action. Declaration of compromises of cryptomaterial is the responsibility of the commanding general, U.S. Army Security Agency. A compromise may result from one of two types of insecurities—physical or cryptographic. Specific insecurities and means of reporting are enumerated in AR 380–40.

Section III. CRYTOGRAPHIC SECURITY

8–8. Definition

Cryptographic security is the portion of communications security that deals with the proper use of authorized cryptosystems, cipher devices, and machines used for encrypting and decrypting messages. For detailed information on the handling of cryptographic material, see AR 380–40 and AR 380–41. AR 380–52 prescribes rules for the acquisition and use of approved codes, non-machine ciphers, and authentication systems. Some of the cryptographic systems available to corps units are indicated in *a* through *c* below.

a. Numeral Codes. Numeral codes are used to encrypt map references and other numerical information which must be encrypted, when for operational necessity, the remainder of the message is transmitted in plain language.

b. Operations Codes. Operations codes may be used for general or limited purpose communications, but may not be used when a more secure system is available. Operations codes may not be used in conjunction with any other security code.

c. Cipher Machines and Devices. On-line and off-line cipher equipment is authorized most units that require it. Speech security equipment needed by units normally is authorized in their TOE.

8–9. Transmission of Clear-Text Messages

a. Requirements. Army regulations require encryption of all classified messages to be transmitted electrically, except when transmitted over approved circuits (AR 380–51). These regulations also provide the exception that, during actual hostilities, electrical transmission of a classified message over a nonapproved circuit may be authorized when two specified conditions are met when speed of delivery is so essential that time cannot be spared for encryption, *and* when the enemy cannot act on the transmitted information in time to influence current operations. Additional restrictions apply to TOP SECRET messages, which are *never* transmitted in clear text over electrical means. To authorize transmission of a classified message in clear text, the commander or his specifically designated representative writes the authorization on the message above his signature.

b. Exceptions. The general rule given in *a* above does not apply to messages that normally are not encrypted such as enemy contact reports and nonnuclear fire missions. The speed required and the number of persons involved in delivering fire on given targets in time precludes encrypting such messages. In such instances, however, speech security equipment is used whenever possible (para 8–8*c*).

c. Encryption of Unclassified Messages. When it is necessary to conceal the contents of an unclassified message that is to be transmitted by electrical means, the message is encrypted before transmission. The commander or his designated representative authorizes the use of this technique. He does so by inserting the abbreviation *UNCLAS E F T O* (unclassified—encrypted for transmission only) on the message form in the space provided for specifying the message security classification. Conditions under which the E F T O procedure is mandatory appear in AR 380–26.

8–10. Security Clearance

a. Access to Classified Material. A person whose official duties require access to classified material may receive classified information, provided he has been properly cleared to receive it. The level of the individual's grade or position, in itself, neither qualifies nor disqualifies him for this purpose.

b. Access to Cryptographic Information. When official duties of personnel require access to cryptographic information, formal authorization must be granted by the commander in accordance with AR 604–5 and subject to the conditions imposed by local regulations. Before granting this access, the commander must review the individual's official personnel records to verify that the necessary forms ((1)–(3) below) have been executed.

(1) DA Form 873, Certificate of Clearance and/or Security Determination under EO 10450.

(2) DD Form 98, Armed Forces Security Questionnaire, or DA Form 1111, Statement of Nonaffiliation with Certain Organizations.

(3) DA Form 2545, Cryptographic Access Authorization and Briefiing Certificate.

Section IV. PHYSICAL SECURITY

8–11. Definition

Physical security is that portion of communications security pertaining to the physical measures necessary to safeguard classified communications equipment and material against access by unauthorized persons. For details on safeguarding, distributing, and accounting for cryptomaterial, see AR 380–40, AR 380–41, and AR 380–46.

8–12. Need for Physical Security

Effective physical security insures the maximum protection of classified material from the time of its production to the time of its destruction. Unsuspected physical compromise can have far more serious consequences than known loss. For example, if an undiscovered compromise occurs and the cryptosystem continues in use, an enemy may be able to decrypt all message traffic transmitted thereafter in this system. Protection against physical compromise can be accomplished by observing the following precautions:

a. Proper handling by all personnel concerned.

b. Adequate storage when not being used.

c. Complete destruction when required.

8–13. Destruction of Classified Material

a. Routine Destruction. Certain nonregistered, classified material is destroyed by burning when directed by competent authority. Registered material (noncryptographic) is destroyed in accordance with AR 380–5. Registered cryptographic material is destroyed in accordance with AR 380–40.

b. Emergency Destruction. Emergency destruction of classified material is accomplished when imminent enemy action makes probable the compromise of this material. When such a condition arises, this destruction usually is directed by the commander or his authorized representative. In the absence of such direction, the senior person present directs the destruction according to the SOP, SOI, or SSI that specifies the conditions under which individuals must destroy classified materials on their own initiative (FM 24–17). Emergency destruction of classified material is always carried out in accordance with AR 380–5, AR 380–40, and AR 380–41.

Section V. TRANSMISSION SECURITY

8–14. Definition

Transmission security is the part of communications security that includes all measures designed to protect transmissions from interception, traffic analysis, and imitative deception.

8–15. Means of Transmission

The precedence and security requirements of a classified message provide the basis for selecting the means by which to transmit the message. The writer of a message keeps this in mind as he decides whether or not to prepare a message for transmission by electrical means.

8–16. Message Preparation

a. Responsible Individuals. Communications personnel are concerned with transmission security as part of their primary duties. Transmission security in a command, however, is directly affected by others, who are more closely associated with the preparation of messages. These others (FM 24–17) include—

(1) *Originator.* The originator is the commander by whose direction a message is sent. His responsibility includes the functions of the writer and the releaser ((2) and (3) below).

(2) *Releaser.* The individual designated to authorize the release of messages from a headquarters for transmission is the releaser. He acts solely for, and in the name of, the originator. One of the releaser's functions is to see that each message meets security (including transmission security) and format requirements. His responsibility to the originator includes staff message control over the functions of the writer.

(3) *Writer.* The individual who composes a message is the writer. Basically, he follows the regulations and procedures for preparing messages (AR 105–31), thereby assuring that transmission security may be achieved when the messages pass through communications channels.

b. Writer Responsibilities. Although all messages are sent in the name of the commander (originator), few are likely to be written by him. He carries out his responsibility in this respect by insuring that those in his command who write messages know and follow the principles of communications security. Detailed instructions for preparation of messages appear in AR 105–31 and FM 24–17. In general, the writer considers the factors in (1) through (4) below when preparing a message.

(1) *Requirement.* A message is prepared for transmission by electrical means only when this is necessary to meet one requirement *that the attainment of a military objective depends on rapid transmission of the information or instruction* that is to be written in the message text.

(2) *Brevity.* Messages prepared for electrical transmission are concise.

(3) *Precedence.* The precedence assigned to a message depends *solely* upon the urgency (time interval permitted before the addressee must act) of the message. The relative importance of the message text is disregarded for the purpose of determining proper precedence.

(4) *Classification.* A message must be appropriately classified (para 8–5).

8–17. Radio Intelligence

Radio intelligence is produced through radio interception and direction-finding techniques. Complete radio silence is the only sure defense against radio intelligence. Certain measures, however, may be taken to lower the effectiveness of radio interception and direction finding (*a–f* below).

a. Reduced Transmission Time. Reduce the amount of time *on the air* by making only authorized transmissions and testing only when necessary. This reduces the opportunities for direction finding.

b. Minimum Power Output. Use an appropriate combination of transmitter-antenna-power facilities to produce the minimum required signal output.

c. Receipt System. When practical and authorized, transmit radio traffic without requiring the receiving station to transmit a receipt.

d. Changes in Frequency. Use prearranged plans for changes in radio frequency. Use encrypted instructions to direct changes in frequency under circumstances not covered by prearranged plans.

e. Transmitter Adjustment. Use proper procedure for accurately adjusting transmitters to authorized frequencies.

f. Net Control. Follow established radio operating procedures, thereby achieving the required net discipline.

8–18. Radio Procedure Training

Every individual who transmits by radio, whether regularly or intermittently, either for communicating or for testing during maintenance, needs training in radio operating procedures. During this training the radio user learns to recognize and avoid using practices (*a–k* below) that can endanger communications security.

a. Violation of radio silence.

b. Unofficial conversation between operators.

c. Transmission in a directed net, without first having obtained permission from the net control station.

d. Unnecessary repetition of call signs, prosigns, or other transmissions.

e. Use of conversational language instead of authorized prosigns and operating signals.

f. Use of incorrect or unauthorized operating procedures.

g. Unauthorized identification of a unit or unit location, and identification of a member of a unit.

h. Failure to maintain radio watch on designated frequencies at designated times.

i. Use of excessive transmitting power.

j. Operation at transmission speed higher than the receiving operator can copy.

k. Use of longer transmission time than necessary for tuning or testing equipment or for transmitting message traffic.

8–19. Security Against Jamming

a. Jamming. The intended effect of jamming (para 8–2*c*, 8–3) is to disrupt a radio system and deny its use for communications. All radio frequencies are vulnerable to jamming. However, the enemy does not expend his jamming capability when he does not expect to obtain an advantage thereby. For this reason radio operators learn, through training, to remain calm under jamming attack and to persistently apply appropriate antijamming techniques and procedures as directed in SOP. Antijamming operations are discussed in FM 32–20.

b. Report of Jamming. One antijamming procedure carried out by radio operators is the prompt, accurate, complete reporting of jamming. Jamming usually is part of the general plan for an important tactical operation. Therefore, individual jamming reports may be correlated with other jamming reports to produce intelligence concerning enemy capabilities and impending enemy combat operations.

8–20. Telephone Transmission Security

Users of a telephone system must observe transmission security discipline. This requires consideration of the relative security of the various types of circuits in use. Many circuits pass through combinations of wire and radio means, while the user has no way of knowing what this combination may be. Portions of one of these circuits may be equipped with security devices without the circuit necessarily being secure from calling party to called party. Both radio and wire systems are susceptible to enemy interception and monitoring. Also, most telephone circuits pass through one or more telephone switchboards, the operating personnel of which are not necessarily cleared for access to information that bears certain security classifications. For these reasons, the principle that radio circuits are less secure than wire circuits cannot be used as a basis for passing classified information over the telephone.

8–21. Security Monitoring Stations

Radio monitor stations, set up by central control agencies under area or higher commands, help to improve overall circuit discipline and operator efficiency. Violations of transmission security and cryptosecurity, and other deviations from prescribed procedures, discovered by monitoring are reported to the responsible headquarters. These reports may include appropriate references, instructional materials, excerpts made from logs of the violating transmissions, and recommendations for improving communications security.

Section VI. AUTHENTICATION

8-22. Authentication Security

One communications security measure that provides protection against imitative deception is authentication. The commander, with the advice of his signal officer, specifies the authentication system to be used within his command. If he requires locally prepared authentication systems, preparation of these systems must follow the detailed instructions contained in AR 380-52.

8-23. Procedures

Users of authentication systems must be thoroughly familiar with the operating instructions, as well as the capabilities and limitations of the specific system. Failure to use correct operating procedures is the major cause of errors in authentication. In radiotelegraph operation, when the authenticator consists of a single character, this character is transmitted twice as though it were a two-character authenticator. In radiotelephone operation, the transmitting operator uses the phonetic alphabet for sending the characters of the authenticator. Specific operating instructions accompany many authentication systems, or they are published in local procedural instructions such as SOI.

8-24. Transmission Authentication

When using transmission authentication, a calling station may establish its validity without requiring a transmission from the receiving station. For this procedure, the method of using the authentication system must be prearranged in complete detail. Normal radio procedure governs the use of procedure signals to indicate the use of authenticators. As in the case of all standing procedures, temporary exceptions must be the subject of new directives applying to specific operations.

8-25. Challenge and Reply Authentication

When using the procedure of challenge and reply authentication, a transmitting station challenges and requires the receiving station to authenticate before he transmits any messages. The receiving station may also include a challenge in his reply to the first station's challenge.

CHAPTER 9
SUPPLY AND MAINTENANCE

Section I. COMBAT SERVICE SUPPORT

9–1. 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.

9–2. FASCOM Army-Wide Service Organizations
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.

9–3. FASCOM Support Brigades
Each support brigade of the FASCOM provides supply, maintenance, and certain other 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.

9–4. Support for Corps Signal Battalion
Because of the extensive area over which the corps signal battalion operates, the deployment of the battalion determines how it obtains logistical support. The battalion S4 prepares plans and coordinates them with the corps support brigade. These plans and coordination insure that battalion elements, wherever located, can get combat service support from the nearest element of the corps support brigade. A team leader, upon arriving at the site where his team is to operate, establishes liaison with the corps support brigade element that has been designated to support the team. This permits establishment of detailed procedures for provision of necessary support. The battalion S4 also makes special arrangements to get combat service support for signal battalion teams that are located with divisions or other major corps subordinate headquarters. Such arrangements may provide for a team to place requirements on local combat service support elements through the headquarters at which this team is located. Under such circumstances, the team leader establishes liaison through this headquarters for detailed combat service support procedures.

Section II. SUPPLY

9–5. Battalion Supply
The acquisition and timely distribution of adequate supplies are necessary for the accomplishment of the battalion's mission. The battalion commander must be familiar with the status of supplies and equipment within his organization and must consider the logistical support required for contemplated operations. He must insure that proper planning, directive guidance, and record-keeping are provided to produce a steady flow of required supplies. Continuous coordination among S3, S4, and the battalion commander is necessary to insure an adequate supply and resupply of material.

9-6. Battalion Supply System

Supply is the responsibility of the battalion S4 and the function of the battalion supply section. All echelons, however, are responsible for assuring that the flow of supplies throughout the battalion is continuous and operates without delays. Internal battalion supply procedures must be designed to implement and facilitate responsiveness in the supply system. The battalion operates under a centralized supply procedure in accordance with published directives. The method used to consolidate requisitions and to distribute supplies is influenced by the following factors (*a*–*e* below).

a. Current supply directives.
b. Dispersion of organic units.
c. Transportation.
d. Supply sources provided by field army.
e. Battalion and corps mission.

9-7. Supply Requirements

The emphasis on supply is from front to rear, with the using unit placing its demand upon the next higher echelon of supply. Because the present Department of the Army supply system is based upon demand experience, all requirements generated within a unit must be documented and passed through the system. Overstockage, hoarding, and trading for necessary replacement parts are likely to show unrealistically low demands for the battalion in the system. Consequently, the battalion experience factors may be revised downward to a point so low that they cause shortages of supplies at a time when the need for them is most critical.

9-8. Supply Economy

Supply economy is a matter of continuous practice. Commanders at every level require all personnel within their commands to practice the conservation of supplies. By enforcement of specific supply economy instructions and by frequent inspections, the commander insures that his units actually have on hand their authorized supplies and equipment. Every individual, in addition to his regularly assigned responsibilities, is responsible for the care, preservation, and conservation of equipment or material he uses, whether or not he has personally signed a receipt.

9-9. Inspections

Command inspections are made periodically as directed by the corps or higher commanders. These inspections include a check of the accuracy of records, the serviceability and storage of supplies and equipment on hand, and the existence of overages and shortages. In addition to these command inspections, the battalion commander conducts local inspections, as do his staff members and subordinate company commanders, in accordance with procedures established by the battalion commander.

Section III. MAINTENANCE

9-10. Categories of Maintenance

Maintenance of equipment includes all actions taken to retain materiel in a serviceable condition or to restore it to serviceability. This includes the routine recurring care exercised by operators and users, as well as the repair, rebuilding, and overhaul performed by trained technicians. The Army materiel maintenance system is divided into four categories—organizational maintenance, direct support (DS) maintenance, general support (GS) maintenance, and depot maintenance (AR 320-5 and AR 750-1). These categories, which are based upon the extent of capabilities, facilities, and skills required to perform authorized maintenance operations, are used as the means of designating the scope of maintenance to be performed at the various command levels. The specific maintenance functions and responsibilities of the corps signal battalion, under these categories, are as discussed in paragraphs 9-11 and 9-12 below.

9-11. Organizational Maintenance

Organizational maintenance includes preventive maintenance services and those repairs authorized in appropriate technical publications. Since the companies of the corps signal battalion are capable of performing organizational maintenance on organic weapons, motor vehicles, power generators, and signal communications equipment, the company com-

manders are responsible for maintaining the operational readiness of such equipment assigned or under his control. The organizational maintenance capability of the companies is augmented by battalion level maintenance personnel assigned to battalion HHC. The battalion S4 makes arrangements with company commanders for the timely scheduling and performance of battalion-level organizational maintenance support on vehicles and power generators organic to the companies of the battalion (para 4–4c).

9–12. Maintenance Support Beyond Organizational Level

In addition to the supplemental organizational maintenance support capability mentioned above, the HHC has the capability of performing direct support level maintenance on all electronics equipment (excluding avionics items) organic to the entire battalion. Direct support maintenance for most nonelectronics items of materiel is provided by the supporting DS maintenance unit of the corps or field army support brigade of FASCOM. When the maintenance requirements exceed the capability and capacity of the companies and the battalion signal maintenance section, arrangements are made by the battalion S4 for necessary additional maintenance support from the supporting direct support maintenance unit. In addition, the battalion S4 makes necessary arrangements for the continuous maintenance support of deployed units or elements of the battalion. When an item requires maintenance repairs at the general support level or beyond, it is evacuated to the supporting direct support unit, which then assumes responsibility for further evacuation of the item to general support maintenance level. For further details on maintenance operations in the field, see FM 29–22.

9–13. Preventive Maintenance

Preventive maintenance is in the organizational maintenance category. Commanders at all levels are responsible for compliance with procedures governing preventive maintenance operations, for the training of their command in preventive maintenance of equipment, and for allocation of time during which their units perform preventive maintenance. The battalion commander also is responsible for battalion preventive maintenance training, which is equal in importance to any other functional military training. In this regard, preventive maintenance schools for commanders, staff officers, and key noncommissioned officers should be established within the local command. It is the responsibility of the commander to prevent the abuse of equipment under his control. Evidence of abuse (*a–g* below) is investigated and corrective action taken. For further general information on preventive maintenance, see DA Pam 750–1. Information concerning preventive maintenance for specific items of equipment is in the technical manual (TM) pertaining to the individual item. TM 38–750 contains further details on the preparation, maintenance, and processing of records associated with maintenance performance. Indications of abuse in the use of equipments are—

a. Improper, careless, or negligent use of equipment.

b. Lack of lubrication, overlubrication, or use of unauthorized lubricants.

c. Lack of adequate inspections.

d. Deferred maintenance, including lack of proper servicing.

e. Attempted repairs by unqualified personnel.

f. Improper tools.

g. Failure to assign specific maintenance responsibility.

9–14. Command Interest

The battalion commander must know his equipment and must demonstrate his interest through personal attention to maintenance operations and frequent personal inspections. There is no substitute for this personal command action.

9–15. Maintenance Inspections

The battalion commander is responsible for insuring that the company commanders have established, and are implementing effective programs of maintenance inspections. These company inspections should ascertain proper utilization of equipment, adequacy of maintenance and maintenance support, and the operational readiness of all assigned equipment. In addition, the Command Maintenance Manage-

ment Inspection (CMMI), prescribed by AR 750–8, provides another and more formal means of determining the equipment status and maintenance effectiveness of the corps signal battalion. In essence, it is the responsibility of every officer and noncommissioned officer to continually observe and take necessary on-the-spot corrective action to eliminate deficiencies in the condition, handling, or operation of equipment.

CHAPTER 10
TRAINING

10-1. Training Objectives

In the corps signal battalion, the ultimate objective of all training is the accomplishment of the battalion mission. The initial and intermediate objectives include training individual members to become proficient in their assigned tasks, cross-training them to become capable in performing related tasks, and training them to achieve the coordination of balanced skills necessary for effective individual, team, unit, and organization operations.

10-2. Training Responsibility

a. General Responsibility. As in all other matters pertaining to the corps signal battalion, the battalion commander is generally responsible for all training in his organization. Similarly, the company commanders are responsible for implementing the principles and policies established by the battalion commander for training within their companies. The broad training principles and policies to be used by all commanders are published in AR 350-1. Signal communications training considerations are discussed also in FM 24-1.

b. Training Plans and Instruction. Company commanders use their officers and key noncommissioned officers to assist in planning for training in their companies. Platoon leaders and section chiefs supervise and take part in the training, determine detailed training requirements, and conduct on-the-job training. Special attention is given to selecting men who have the unique characteristics and knowledge that qualify them for use as instructors.

10-3. Training Operations

a. Training Program. The battalion operations and training officer (S3) assists the battalion commander in training matters by preparing the battalion training program and by exercising staff supervision over its implementation. Company commanders and their subordinates use this battalion training program as the basis for the training they conduct within their own units. The training program must provide for refresher training to keep individuals and units informed about new procedures, techniques, and equipments. Also subject to periodic review are certain common subjects that are essential to general military proficiency; for example, military justice, chemical, biological, and radiological warfare, qualification in arms, and the *code of conduct.* The training program is designed so that training time may be conserved by the maximum use of the concurrent training procedure. Some of the common subjects are particularly adaptable to this procedure.

b. Training Facilities. Training facilities are employed according to their availability and to the nature of the specific kinds of training involved. Training is accomplished on individual, team, section, platoon, company, and battalion bases. It may be conducted at Army service school facilities and at local unit schools. It usually requires on-the-job and field-exercise training facilities.

c. Training Phases. Training is generally divided into the basic combat training (BCT) phase, the advanced individual training (AIT) phase, the basic unit training (BUT) phase, the advanced unit training (AUT) phase, and the field exercise training phase. These phases are used simply as convenient designations to indicate definite stages of progress. However, training in the battalion progresses smoothly through the overlapping phases so that there are no apparent starting and stopping points. In this way, training is a continuous function, and all leaders in the battalion are continuously involved in some training activity.

10-4. Individual Training

a. Types of Individual Training. Individual training is conducted in basic combat training centers, advanced individual training centers, Army service schools, and Army units. It develops the knowledge and skills needed by a soldier to be an effective member of his unit.

b. Army Service Schools. An extensive system of Army service schools operates to train officers and enlisted men in the skills they require. Full advantage should be taken of the quotas authorized the battalion for these schools. In this way, the desirable situation of having the greatest possible number of school-trained members may be achieved. Prospective students must be screened carefully to insure that they can successfully complete the courses of instruction they attend. Individuals should be encouraged to take extension correspondence courses that are available through the various service schools.

c. On-the-Job Training. On-the-job training is given during the actual performance of duty, where the untrained or partially trained man is apprenticed to one or more experienced specialists, while his skill develops progressively to the state where he can perform the most complex operations expected of him with a minimum of supervision. The individual training given at unit operational facilities usually follows on-the-job training procedures. On-the-job training for the purpose of awarding an initial military occupational specialty (MOS) is used only as a last resort, when formal training at training centers and service schools is not available. Primarily this training procedure is used to develop and expand MOS skills already attained at training centers and service schools.

10-5. Unit Training

a. Unit Training Objective. Unit training has the objective of consolidating individual skills to produce units, from team to battalion size, that can accomplish the missions assigned by tables of organization and equipment (TOE). This training demonstrates the importance of the contribution made by each individual to the effectiveness of the unit. Unit training encompasses the basic unit and advanced unit training phases. It is conducted in the field under conditions approximating as nearly as possible those of combat. Unit training may be required because new types of equipment are received, because of changes in doctrine, because of new methods of operation, or because of any number of other similar operational changes.

b. Basic Unit Training. Basic unit training is largely confined to company and smaller unit operations. This training further develops all individual skills and adapts these skills to the requirements of teams, sections, platoons, and companies. During this training, the companies are prepared for and given company level proficiency tests.

c. Advanced Unit Training. The corps signal battalion conducts advanced unit training at battalion level. In basic unit training, company-size teams have become fully capable of accomplishing their TOE missions. Advanced unit training integrates these companies into a coordinated signal battalion capable of undertaking combat support operations. As much as possible, the battalion conducts this training in conjunction with other corps units that it is designed to support during corps combat operations. Emphasis is placed on the development of technical and tactical proficiency, operating procedures, and proper utilization of manpower, weapons, and equipment under field conditions. Particular attention also is given to common subjects such as dispersion, concealment, local security, CBR operations and protective measures, and individual and unit protective measures against the effects of nuclear weapons.

10-6. Field Exercise Training and Maneuvers

Field exercises make up the last formal phase of the Army training program (FM 105-5). This phase gives the corps signal battalion opportunities to practice providing signal communications for the corps during corps field exercises and maneuvers. Field exercises take place under simulated war conditions in which corps forces and armament are actually present, but opposing forces may be imaginary. Field exercises should follow preparatory command post exercises. Maneuvers are conducted with troops and armament of both the corps and its

adversary present in whole or in part. Field exercises and maneuvers should represent the logical culmination of previous training, and should require the battalion to perform all its mission functions with maximum coordination and teamwork. They should be so designed that all elements, from battalion down to the smallest team, obtain maximum training benefit. During this training, the corps signal battalion with all its elements is employed with the various other types of units, just as it would be employed during an actual war operation. Refer to ATP 20–5 for the Army training program covering field exercises and maneuvers.

10–7. Training with Other Units

One of the more important aspects of training corps signal battalion is that of training with other units. Since elements of the battalion normally operate in support of other units distant from the battalion command post, this type of training is necessary preparation of the battalion for its combat support role. During its training with other units (para 10–5*c* and 10–6), not only do the battalion and its elements practice providing signal communications for the units they support, but also the supported units exercise to gain experience in using and adapting to signal communications. Not the least important factor involved is the building of personal acquaintances between members of the supporting and supported units.

10–8. Operational Readiness Training

When the battalion has completed the formal phases of training and is assigned responsibility for maintaining the highest possible state of combat proficiency prerequisite to accomplishing its operational missions, it engages in operational readiness training (AR 320–5). This training is based on a simulated plan of operation, of the same or greater complexity than an actual operation plan, to provide exercises in unit response to operation orders. The objectives of operational readiness training are listed in *a* through *c* below.

a. Correction of deficiencies discovered during previous training.

b. Development and maintenance, by all available means, of a satisfactory state of readiness for operational missions, including special operations in various environments.

c. Preparation to deploy on short notice for extended combat operations.

10–9. Training Publications

The broad training principles and policies governing all commanders are published in AR 350–1. Various sources of official training literature contain the detailed Department of the Army policies, doctrine, and procedures used for training. Some of the more important of these sources are identified and explained in paragraphs 10–10 through 10–22. Refer to the appendix for Department of the Army pamphlets that index training publications.

10–10. Army Subject Schedules

Army subject schedules (ASubjScd) provide detailed guidance for preparation of lesson plans and practical exercises and for scheduling periods of instruction. The two basic types of subject schedules are—*unit subject schedules* for unit training, and *MOS subject schedules* for individual training in specific skills. Refer to DA Pam 310–3.

10–11. Army Training Programs

Army training programs (ATP) prescribe a general subject outline of training to be conducted by operational units and outline the minimum essential training for units and individuals. They provide guidance for preparation of training programs and training schedules for specific types of troop units of the active Army and Reserve components. An ATP prescribes the subjects, number of hours for each subject, and study references and training aids that apply in the training of specific units. Smaller units for which an ATP is *not* published may adapt for their use the applicable portions of an ATP intended for comparable larger units. Refer to DA Pam 310–3.

10–12. Army Training Tests

Army training tests (ATT) are means of evaluating a unit's tactical and technical readiness to engage in the kind of operations for which the unit is designed. Test scores indicate the state of training of both the unit and its members. From these indications, it is evident whether or not the unit can accomplish

its assigned mission. These indications also show whether individual members meet the minimum qualifications of their MOS and are properly employed in the unit. Each army training test is directly related to and is administered following an army training program (para 10–11); it indicates the effectiveness of the program. Training deficiencies are brought to light for elimination by subsequent training. Refer to DA Pam 310–3.

10–13. Department of the Army Pamphlets

Department of the Army Pamphlet 310–1 indexes many other pamphlets that can serve as supplementary training references. These pamphlets cover a wide range of subjects and are useful in conducting training in military justice, discipline, conduct as prisoners of war, management, and other subjects common to all military training programs. Department of the Army Pamphlet 350–10 is of particular interest because it lists courses of instruction offered at service schools. Others of importance are DA Pam 20–301, DA Pam 21–52, DA Pam 360–522, and DA Pam 750–1. Refer also to DA Pam 310–3.

10–14. Field Manuals

Field Manuals are in the category of Army training literature. They are textbooks and reference books dealing principally with military operations in the field. These manuals cover general operating principles, procedures, and techniques, including military organizations. FM 21–5 and FM 21–6 contain basic guidance for planning and conducting military training.

10–15. Graphic Training Aids

Graphic training aids (GTA) are instructional charts or posters and simple training devices reproduced and distributed as standard Department of the Army visual aids. The charts may be used as individual aids or in some instances, groups of them may be used as series. Refer to DA Pam 108–1.

10–16. Lubrication Orders

Lubrication orders (LO) are illustrated, waterproofed, numbered, and dated cards or decalcomania labels that prescribe approved organizational maintenance lubrication instructions for mechanical equipment issued to an organization. These LOs are kept with or attached to the equipments to which they pertain. They set forth mandatory instructions. The company commander is responsible for obtaining, installing, and complying with all current LOs that apply to the equipments in his company. Refer to DA Pam 310–4.

10–17. Modification Work Orders

Modification work orders (MWO) prescribe modifications that must be made on materiel to improve its operating efficiency and the safety of its operators. An MWO indicates the procedure to be followed in performing the required modification and is sufficient authorization for requisitioning the necessary parts. Alterations required by an MWO range from the very simple that may be accomplished at the using organization to the very complex that may have to be done at a general support or depot maintenance facility. Refer to DA Pam 310–4. Several kinds of information are provided in an MWO (*a–d* below).

a. Type of materiel to be modified.

b. Category of maintenance (AR 750–5) permitted to make the modification.

c. New parts and number of manhours required for the modification work.

d. Date when the modification must be completed.

10–18. Motion Pictures, Television Recordings, and Filmstrips

Many informative motion pictures, television recordings, and filmstrips for training are available through local Signal Corps audiovisual support centers. Included among these are Armed Forces information films, film bulletins, filmstrips, training films, and miscellaneous films. Refer to DA Pam 108–1.

10–19. Supply Bulletin

Supply bulletins (SB) contain instructions and information on the more technical aspects of supply matters. Refer to DA Pam 310–4.

10–20. Technical Bulletins

Technical bulletins (TB) provide a means of disseminating new technical instructions and information on equipments and techniques. The content of a technical bulletin usually is in-

serted later in an appropriate technical manual (para 8–21). Refer to DA Pam 310–4.

10–21. Technical Manuals

Technical manuals (TM) are instructional textbooks that present technical information concerning the installation, operation, and maintenance of specified items of materiel. The information in technical manuals is presented in more detail than in field manuals. Moreover, some special information of a type that usually does not appear in field manuals may be included as a matter of course in technical manuals. Refer to DA Pam 310–4.

10–22. Training Circulars

Training circulars (TC) provide a means for early dissemination of essential new training information. Newly established doctrine and recently developed tactics and techniques may be published first in training circulars and later in appropriate technical manuals. Refer to DA Pam 310–3.

PART TWO

AIRBORNE CORPS SIGNAL BATTALION

CHAPTER 11

AIRBORNE CORPS SIGNAL BATTALION—ORGANIZATION AND EMPLOYMENT

Section I. THE BATTALION

11-1. Airborne Corps Signal Battalion

The airborne corps signal battalion is a major subordinate element of an airborne corps. It establishes and operates a signal communications system designed to provide for the necessary command and control exercised by an airborne corps headquarters. The staff activity of the airborne corps signal officer produces the guidance that gives purpose and direction to the battalion operations. This chapter describes the authorized organization of the battalion and battalion headquarters and headquarters company. This section is a general discussion of the battalion mission and operation. More detailed information concerning the organic units of the battalion appears in paragraphs 11-10 through 11-18 and in chapters 12 and 13. This information, however, is intended primarily to point out the differences between corps signal battalion and airborne corps signal battalion operations. Generally, these differences occur because of the differences in the organization of and in the types of tactical operations conducted by a corps and an airborne corps. This includes the requirement for airborne signal battalion personnel and equipment to land by parachute or aircraft.

11-2. Assignment and Control

One airborne corps signal battalion is assigned to an airborne corps. The corps commander usually delegates to the corps signal officer the authority for exercising operational control over the airborne corps signal battalion.

11-3. Mission

The airborne corps signal battalion mission is to—

a. Provide signal communications for all echelons of an airborne corps headquarters.

b. Install, operate, and maintain multichannel communications facilities from corps headquarters echelons to headquarters of major subordinate tactical units.

c. Install, operate, and maintain multichannel communications facilities between corps artillery headquarters and headquarters of major corps artillery organizations.

d. Operate the corps ground and air messenger facilities.

e. Provide photography support (except aerial surveillance photography) for the corps.

11-4. Full Strength Capabilities

When the airborne corps signal battalion is organized at full TOE strength, it can perform its mission within specific capabilities. Having these capabilities, the battalion can—

a. Install, operate, and maintain tactical signal communications for all echelons of corps headquarters on a 24-hour-per-day basis.

b. Operate corps signal messenger facilities, including—

(1) Ground messenger support within the capabilities of organic motor messenger teams.

(2) Air messenger support within the capabilities of organic aircraft.

c. Perform photography for the corps, including—

(1) Ground still and motion picture coverage.

(2) Operation of two mobile photographic laboratories for processing ground and aerial still photographs (except color film).

d. Perform direct support level mainten-

ance on all organic electronics equipment.

e. Use organic aircraft for evacuation and resupply of electronics equipment and for establishment of airborne communications retransmission stations. An increase in this capability, by addition of aviation personnel and equipment, is authorized by TOE when the battalion operates in underdeveloped areas.

11-5. Reduced Strength Capabilities

The airborne corps signal battalion may be organized at the reduced strength authorization levels 2 or 3. In such instances the battalion capabilities are reduced, accordingly, by approximately 10 or 20 percent. This reduction is accomplished by reduced TOE auhtorization for the individual companies. Under TOE authorization levels 2 or 3, the battalion can perform its functions, but the required time increases.

11-6. Defense Capability

Individuals of the airborne corps signal battalion (except the chaplain) can engage in effective, coordinated defense of its area or signal installations (para 2-19). Such activity, however, causes a corresponding curtailment of mission capabilities.

11-7. Capability Limitations

a. Airborne Corps Operations. Certain functions necessary for satisfaction of signal communications requirements generated by normal airborne corps operations are outside the scope of the capabilities given the airborne corps signal battalion by its TOE. In this respect, the battalion depends on supplementation provided from outside sources. It depends on—

(1) FASCOM units for electronics supply and general support maintenance of its electronics equipment.

(2) The field army signal brigade for long lines circuits not provided for by elements of the battalion.

(3) Theater army pictorial units for processing exposed color and motion picture film.

(4) Service support units for medical and dental support and for supplemental transportation.

(5) FASCOM units for additional direct support maintenance and for general support maintenance as required.

b. Independent Airborne Corps Operations. When an airborne corps engages in independent airborne operations, its signal communications requirements are far beyond the capabilities of an airborne corps signal battalion. Under such circumstances, a signal group attached to the independent airborne corps provides signal support similar to (but on a smaller scale than) that provided by the signal brigade for a field army. The airborne corps signal battalion and various other signal units, attached as required, make up this signal group organization ((1)-(5) below).

(1) Headquarters and headquarters detachment, signal group (TOE 11-122).

(2) Army area signal battalion (TOE 11-85).

(3) Signal support company (TOE 11-117).

(4) Signal medium headquarters operation company (TOE 11-127).

(5) Airborne corps signal battalion (TOE 11-225).

11-8. Organization

The airborne corps signal battalion is organized as a category II unit (AR 3205—unit categories). The battalion (TOE 11-225) has four organic companies (fig. 11-1).

a. Headquarters and headquarters company (TOE 11-226) (sec. II).

b. Command signal operations company (main) (TOE 11-227) (ch 12).

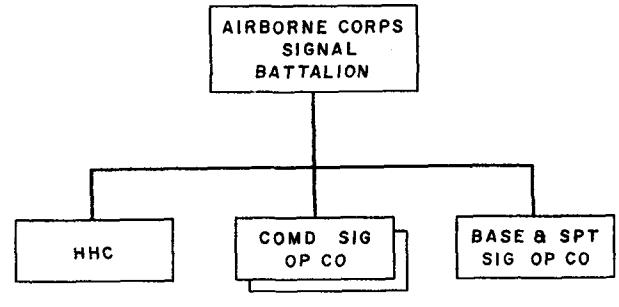

Figure 11-1. Airborne corps signal battalion organization.

c. Command signal operations company (alternate) (TOE 11–227) (ch 12).

d. Base and support signal operations company (TOE 11–228) (ch 13).

11–9. Operation

The airborne corps signal battalion is assigned to an airborne corps having two or three divisions. This battalion provides signal communications facilities at three echelons of the corps headquarters and at the corps artillery headquarters. It establishes and operates command multichannel communications systems between the corps headquarters and headquarters of major subordinate units.

Section II. HEADQUARTERS AND HEADQUARTERS COMPANY

11–10. Battalion Headquarters and Headquarters Company

The airborne corps signal battalion HHC provides the direction and support that is normal for a separate battalion. In addition, it has certain unique functions that are parts of the battalion combat support mission. This chapter describes the HHC and discusses how it supports and participates in the battalion mission.

11–11. Assignment and Control

One headquarters and headquarters company is organic to an airborne corps signal battalion, under TOE 11–225. Command channels between the company and battalion headquarters are normal for a separate battalion.

11–12. Mission

The mission of the battalion headquarters and headquarters company is to provide—

a. Planning, direction, and coordination of operations and training for an airborne corps signal battalion.

b. Command, administrative, and logistical support for the battalion.

c. Photography support (except aerial surveillance photography) for the corps.

d. Consolidated personnel administration, supervision of supply, tactical vehicle maintenance, and electronics maintenance for the battalion.

11–13. Full Strength Capabilities

When the HHC is organized at full TOE strength (TOE level 1), it is 100 percent mobile in its own motor vehicles. It is also 100 percent mobile when supported by USAF medium and heavy transport aircraft. The HHC can perform its mission within specified capabilities (*a–e* below).

a. Plan, command, control, and coordinate the operations and training of an airborne corps signal battalion.

b. Provide administrative and logistical support for the battalion, including—

(1) Consolidated prsonnel administration

(2) Direct support level maintenance for battalion electronics equipment and battalion level organizational maintenance for battalion vehicles and other nonelectronics equipment.

(3) Battalion supply.

c. Ground photography support for the corps, including—

(1) Ground still and motion picture coverage.

(2) Operation of two mobile photographic laboratories for processing exposed ground and aerial still photograph film (except color film) for corps units.

d. Provide organic aircraft for—

(1) Air messenger operations.

(2) Airborne communications retransmission stations.

(3) Evacuation and resupply of electronics equipment.

(4) The foregoing purposes when the battalion operates in underdeveloped areas. In this circumstance, additional aviation personnel and equipment are authorized by TOE to give the battalion greater capability for these purposes.

e. Land by parachute or aircraft.

11–14. Reduced Strength Capabilities

The HHC may be organized at the reduced strength levels 2 or 3. In such instances the

company capabilities are reduced by approximately 10 or 20 percent. Under these TOE authorization levels, the company can perform its functions, but the required time increases.

11–15. Defense Capability

Individuals of HHC (except the chaplain) can engage in effective coordinated defense of its area or signal installations (para 2–19). Such activity, however, causes a corresponding curtailment of mission capabilities.

11–16. Capability Limitations

Certain functions necessary for satisfaction of corps signal communications requirements, and ceertain required service support functions, are outside the capabilities given this HHC by its TOE. For these functions, the company depends on supplementation from outside sources. It depends on—

a. Theater army pictorial units for processing motion picture and color film.

b. Command operations companies of the battalion for mess facilities.

11–17. Organization

Headquarters and headquarters company is organized as a category II unit (AR 329–5—unit categories). This organization has two major elements (fig. 11–2).

a. Battalion Headquarters.

(1) Battalion commander.
(2) Executive officer.
(3) S1.
(4) S3.
(5) S4.
(6) Chaplain.
(7) Motor officer.
(8) Sergeant major.

b. Headquarters Company.

(1) Company headquarters.
(2) Battalion personnel and administration section.
(3) Operations and intelligence section.
(4) Battalion supply section.
(5) Battalion motor maintenance section.
(6) Battalion electronics maintenance section.
(7) Pictorial section.
(8) Aviation section.

11–18. Operation

The airborne corps signal battalion HHC has functions and operations similar to those described for the corps signal battalion HHD (ch 4). There are, however, two major differences—one is that this HHC has no authorization for a tactical operations platoon; the other is in authorized SYSCON facilities. The S3 section of this HHC has little more than half the commissioned and enlisted strength of its counterpart in the corps signal battalion. Most of this difference is in personnel who perform SYSCON functions. Also, this S3 section has two operations centrals (AN/MSC–32) in which to work, rather than the two communications operations centers (AN/MSC–25) authorized its counterpart. These conditions permit operation of SYSCON facilities only at the airborne corps main (or alternate) signal center, while the nonoperating installation remains on standby.

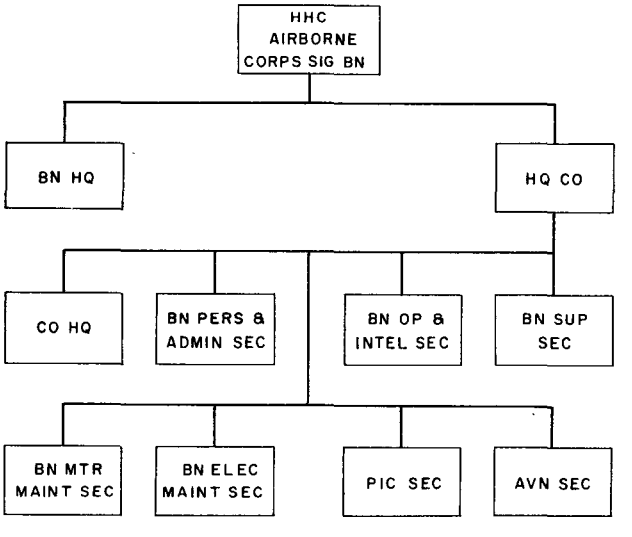

Figure 11–2. Airborne corps signal battalion headquarters and headquarters company organization.

CHAPTER 12
COMMAND SIGNAL OPERATIONS COMPANY

12–1. General
This chapter describes the authorized organization of a command signal operations company. It presents a method of employing the company to accomplish its mission at an airborne corps main or alternate command post. The specific circumstances of an airborne corps operation may require modification of the represented method to satisfy the requirements generated by the particular tactical situation. When operations of the company at corps alternate differ from those at corps main, this chapter gives a method for each, using the notations *main* or *alternate* to indicate where the operation takes place.

12–2. Assignment and Control
Two command signal operations companies are organic to an airborne corps signal battalion under TOE 11–225. Command channels between the companies and battalion headquarters are normal for a separate battalion (para 3–14).

12–3. Mission
A command signal operations company provides signal communications facilities at airborne corps main or alternate headquarters. This includes the provision of signal center support for units in these headquarters areas.

12–4. Full Strength Capabilities
When the command signal operations company is organized at full strength (TOE level 1), it is 100 percent mobile in its own motor vehicles. It also is 100 percent mobile when supported by USAF medium and heavy transport aircraft. The company can perform its mission within specified capabilities *a–k* below). It provides—

a. A telephone central office and local telephone service at the airborne corps main or alternate headquarters.

b. Installation and maintenance of local wire lines and telephones for the airborne corps main or alternate headquarters.

c. Installation and maintenance of wire and cable trunks between the main and alternate headquarters and selected tactical support units in the vicinity.

d. Communications TECHCON functions.

e. Message center support at the main or alternate signal center, including—

(1) Messenger facilities.

(2) Teletypewriter facilities.

(3) Cryptographic facilities.

f. Radio teletypewriter facilities.

(1) Net control stations in the corps command radio teletypewriter nets.

(2) Secondary stations in field army or other higher headquarters radio teletypewriter nets such as command, information, logistics, and army aircraft request nets.

g. Net control stations in the corps command FM-voice and SSB-voice radio nets.

h. Multichannel radio terminal facilities at corps main or alternate signal center and at headquarters of two major units attached to the corps. Also multichannel radio repeater facilities as required to extend the corps systems that terminate at corps main or alternate signal center.

i. Mess facilities for company personnel and for 50 percent of the members of battalion HHC.

j. Organizational maintenance of organic weapons, vehicles, and power generators.

k. Landing by parachute or aircraft.

12-5. Reduced Strength Capabilities

The command signal operations company may be organized at the reduced strength levels 2 or 3. In such instances the company capabilities are reduced by approximately 10 or 20 percent. Under these TOE authorization levels, the company can perform its functions, but time required for it to do so increases.

12-6. Defense Capability

Individuals of the command signal operations company can engage in effective coordinated defense of the company area or signal installations (para 2-19). Such activity, however, causes a corresponding curtailment of mission capabilities.

12-7. Capability Limitations

Certain functions necessary for satisfaction of airborne corps signal communications requirements, and certain required service support functions, are outside the capabilities given the command signal operations company by its TOE. For these functions, the company depends on supplementation from outside sources. It depends on—

a. The aviation section of battalion HHC for operation of the airborne corps air messenger facilities.

b. Battalion HHC for consolidated personnel and administration and for battalion direct support maintenance of organic electronics equipment.

12-8. Organization

The command signal operations company is organized as a category II unit. The company (TOE 11-227) has five major organizational elements (fig. 12-1).

a. Company Headquarters.

b. Wire Operation Platoon.

(1) Wire operation platoon headquarters.

(2) Telephone operation section.

(3) Installation section.

c. Communications Center Operation Platoon.

(1) Communications center operation platoon headquarters.

(2) Message center section.

(3) Teletypewriter section.

d. Radio Platoon.

(1) Radio platoon headquarters.

(2) Radio teletypewriter section.

(3) Mobile radio section.

e. Radio Relay and Carrier Platoon.

(1) Radio relay and carrier platoon headquarters.

(2) Radio carrier terminal section.

(3) Radio relay section.

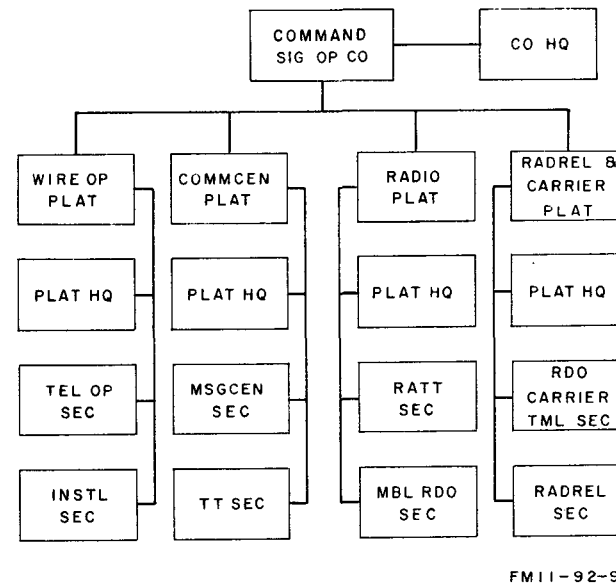

Figure 12-1. Command Signal Operations Company Organization.

12-9. Operation

The command signal operations company has functions and operations similar to those described for the corps signal battalion command operations company (ch. 5). However, there are major differences. Some of these differences are indicated by the absence of certain organizational elements and facilities from the command signal operations company *a* through *e* below). Other differences are indicated by the additional capabilities given the command signal operations company by its TOE (para 12-4) and discussed in the remaining paragraphs of this chapter. Generally, this company has these additional capabilities to provide, for the airborne corps, part of the facilities that the command radio relay and cable company (ch 6) provides for a corps. Organ-

izational elements or facilities not provided by this company's TOE are—

a. Technical Control. The function of technical control at the airborne corps main or alternate signal center belongs to the telephone operation section of the wire operation platoon (para 12–8*b*). The telephone operation section has a three-man team of circuit controllers who operate with a communications PATCENT to perform these functions.

b. Tactical Operations Center Communications. The facilities provided by this company (and the HHC aviation section) at the corps main or alternate signal center are intended to satisfy the usual signal communications requirements of the airborne corps command post. Separate facilities designated by TOE specifically for any particular groupment of corps headquarters staff officers or sections (such as a CTOC) do not exist in this company. Sole-user circuits or facilities may be established when directed, however, as in the corps signal battalion. The normal establishment of an airborne corps base headquarters (ch 13) and the nature of airborne operations permit limitation of personnel and functions at the main and alternate command posts that accordingly limit the generation of requirements for separate signal communications facilities for command and control of current operations.

c. Teletypewriter Tape Relay. The communications center operations platoon has no teletypewriter tape relay section. Tape relay functions in a field army or other tape relay network are not part of the mission or capabilities designated for the airborne corps signal battalion. Consequently personnel and equipment for this purpose are omitted in the TOE.

d. Crypto-Teletypewriter Maintenance. The communications center operations platoon has no crypto-teletypewriter maintenance section. The organizational maintenance of this nature outside the capabilities of this platoon is done by the HHC battalion electronics maintenance section.

e. Radio Wire Integration. Although the radio platoon of the command signal operations company has no radio wire integration section, the platoon provides radio wire integration facilities at the airborne corps main or alternate signal center. Men and equipment for these facilities are authorized in the mobile radio section of the platoon.

12–10. Cable Installation

The installation section of the wire operation platoon has the same functions as the command operations company telephone installation section (para 5–22). In addition, this section installs and maintains the wire and cable circuits required between the communications PATCENT and the multichannel radio terminals at the airborne corps main or alternate signal center.

12–11. Teletypewriter Switching

The teletypewriter section of the communications center operations platoon is authorized a teletypewriter central office. With this equipment, the section provides a teletypewriter switching facility at the airborne corps main or alternate signal center.

12–12. Mobile Radio Facilities

a. Radio Teletypewriter. The radio platoon of this company has the same number of radio teletypewriter stations as the corps signal battalion command operations company. The TOE states that this platoon's stations operate in the radio nets of higher headquarters, as well as in the command nets of the airborne corps (para 12–4*f*(2)). Nevertheless, it is likely that the higher headquarters will furnish RATT stations for these nets, at the airborne corps signal center, in accordance with current principles of signal communications responsibilities. This, in turn, will make RATT stations of this platoon available to operate at airborne division signal centers in airborne corps command nets. The exception to this likelihood is that one of these companies is expected to have a RATT station in the higher headquarters air request net for preplanned requests.

b. Radiotelephone. The mobile radio section of the radio platoon has two ¾-ton trucks, in each of which are mounted two radiotelephone sets; one is FM-voice and the other is SSB-voice. One of these facilities provides a station

for use by authorized airborne corps staff members in airborne corps CG FM-voice and SSB-voice command nets (para 12–4*g*). One of these trucks also has a manual switchboard for interconnection of the FM-voice radio with the corps signal center switching central. This arrangement makes provision for a radio wire integration station at the corps main signal center and the corps alternate signal center (one provided by each of the two command signal operations companies).

c. SSB-Voice Radio. In addition to the SSB-Voice radio facilities described above, the mobile radio section has two SSB radiotelephone sets mounted in ¼-ton trucks. These stations also are for use by the CG and authorized members of his staff, as required, in the airborne corps SSB-Voice radio command net.

d. Tactical Employment. In an airborne corps operation, as in any corps operation, signal communications are established at new command posts as early as possible. During the marshaling period, signal communications are provided for the airborne corps headquarters by the marshaling area commander. During the air movement phase, necessary communications are provided by the troop carrier command. In the meantime, while the signal battalion prepares for air movement and moves to the airhead, the radio section of the base and support signal operations company continues operation in the corps and higher command nets (para 13–4*h, i,* 13–10*d*), including the SSB-voice radio command net. The mobile FM and SSB radiotelephone stations of the command signal operations company may be the earliest corps signal center stations in the airhead to establish communications with the corps base signal center. When distance between the airhead and the corps base signal center, and other radio propagation factors, precludes direct contact with these corps signal battalion equipments, and an airborne retransmission station (para 11–13*d*(3)) also is insufficient for this contact, means provided from outside the airborne corps signal battalion must be obtained for this purpose.

12–13. Multichannel Radio Facilities

The radio relay and carrier platoon provides some of the multichannel radio facilities that, in the corps signal battalion, are provided by the command radio relay and cable company. This platoon provides five multichannel radio terminals at the airborne corps main or alternate signal center. These are double terminals, each of which terminates two 12-channel radio systems. This platoon also provides one multichannel radio terminal at the headquarters of each of two major subordinate units (other than divisions) attached to the airborne corps. In addition this platoon provides six multichannel radio repeater stations for use in the airborne corps command multichannel radio systems as required. Both the radio carrier terminal section and the radio relay section have a three-man team for each terminal and repeater. Each team has a team chief and two radio relay attendants for 24 hour operation of the team station.

CHAPTER 13
BASE AND SUPPORT SIGNAL OPERATIONS COMPANY

13-1. General
This chapter describes the authorized organization of a base and support signal operations company. It presents a method of employing the company to accomplish its part of the airborne corps signal battalion mission. The specific circumstances of an airborne corps operation may require modification of the represented method to satisfy the requirements generated by the particular tactical situation.

13-2. Assignment and Control
Under TOE 11-225, one base and support signal operations company is organic to an airborne corps signal battalion. Command channels between the company and battalion headquarters are normal for a separate battalion (para 3-14).

13-3. Mission
The mission of a base and support signal operations company is to provide—

a. Signal communications facilities at an airborne corps base headquarters and at the airborne corps artillery headquarters.

b. Multichannel radio facilities at corps artillery group headquarters, division artillery headquarters, division main and alternate signal centers, and other major subordinate corps units.

c. Signal center support for units in the vicinity of airborne corps base and airborne corps artillery headquarters.

13-4. Full Strength Capabilities
When the base and support signal operations company is organized at full strength (TOE level 1), it is 100 percent mobile in its own vehicles. It also is 100 percent mobile when supported by USAF medium and heavy transport aircraft. The company can perform its mission within specified capabilities (*a-k* below). It provides—

a. Telephone central office and local telephone service at the airborne corps base headquarters.

b. Installation and maintenance of local wire lines and telephones for the corps base headquarters.

c. Installation and maintenance of wire and cable trunk lines between the corps base signal center and units in the vicinity.

d. Technical control operations for the signal center.

e. Message center support, including teletypewriter, cryptographic, and messenger facilities at the airborne corps base signal center.

f. Teletypewriter terminal facilities at the airborne corps artillery headquarters, when this headquarters cannot provide these facilities (para 13-7*b*).

g. Multichannel radio and carrier terminals at—

(1) Corps artillery headquarters.
(2) Corps artillery group headquarters.
(3) Division artillery headquarters.
(4) Division main and alternate signal centers.
(5) Headquarters of other major subordinate corps units.

h. Radio teletypewriter stations in corps command nets, and in higher headquarters command, information, and logistics nets.

i. Signal communications from corps headquarters to subordinate commands, supporting units, and higher headquarters during the early stages of a parachute assault, while the remainder of the signal battalion prepares for movement to the airfield.

j. Organizational maintenance of organic weapons, vehicles, and power generators.

k. Landing by parachute or aircraft.

13-5. Reduced Strength Capabilities

The base and support signal operations company may be organized at the TOE strength levels 2 or 3. In such instances the company capabilities are reduced by 10 or 20 percent. Under these TOE authorization levels, the company can perform its functions, but time required for it to do so increases.

13-6. Defense Capability

Individuals of the base and support operations company can engage in effective coordinated defense of its area or signal installations (para 2-19). Such activity, however, causes a corresponding curtailment of mission capabilities.

13-7. Capability Limitations

Certain functions necessary for the satisfaction of airborne corps signal communications requirements, and certain service support functions necessary for company operation, are outside the capabilities given the base and support signal operations company by its TOE. For these functions, the company depends on supplementation from outside sources. It depends on—

a. Battalion HHC for consolidated personnel administration, supply, supplemental tactical vehicle maintenance, battalion organizational maintenance, direct-support-level maintenance for organic electronics equipment, and operation of the air messenger facilities.

b. TOE 11-500 teams to provide teletypewriter operators and equipment for the artillery signal support platoon when the platoon must furnish these facilities for the airborne corps artillery headquarters (para 13-4*f*).

13-8. Organization

The base and support signal operations company is organized as a category II unit. The company (TOE 11-228) has seven major organizational elements (fig. 13-1).

a. Company Headquarters.

b. Base Signal Operation Platoon.

(1) Base signal operation platoon headquarters.

(2) Wire section.

(3) Communications center section.

(4) Radio section.

(5) Radio and carrier terminal section.

c. Four Forward Support Sections.

d. Artillery Signal Support Platoon.

(1) Artillery signal support platoon headquarters.

(2) Radio and carrier terminal section.

(3) Wire section.

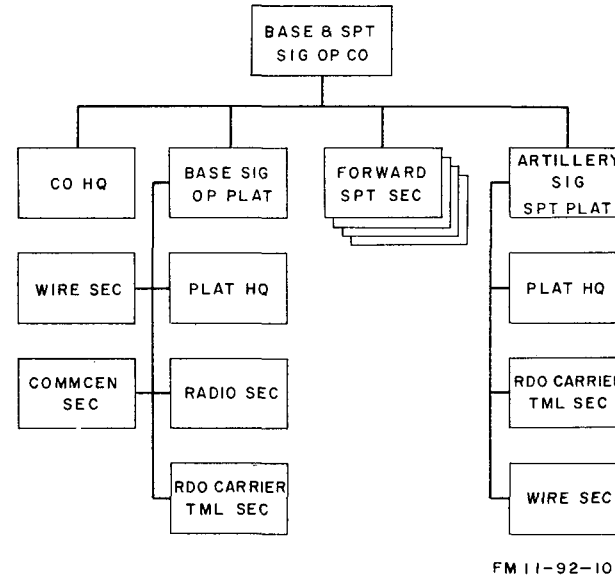

Figure 13-1. Base and support signal operations company organization.

13-9. Operation

The base and support signal operations company has certain functions and operations similar to some of those performed at division main and alternate headquarters by the command radio relay and cable company (ch 6) and similar to those described for the command artillery radio relay company (ch 7). In addition, this company has other functions to perform that are outside the missions and capabilities of both its counterpart companies. Generally, this company performs these additional functions to provide signal communications for an airborne corps headquarters base echelon, and to provide the airborne corps artillery headquarters with additional multichannel radio communications systems that go direct from corps artillery to division artillery headquarters. The remaining paragraphs of this chapter show how this company provides these additional facilities.

13–10. Base Signal Operation Platoon

a. Platoon Operations. The base signal operation platoon has no counterpart in the corps signal battalion. This platoon provides signal center facilities at the airborne corps headquarters base echelon. It also makes its signal center facilities available to the corps subordinate unit headquarters in the vicinity, as directed. Further, this platoon provides multichannel radio terminal facilities at headquarters of four airborne corps subordinate units.

b. Wire Section. The wire section of the base signal operation platoon installs, operates, and maintains a telephone central office for the airborne corps headquarters base echelon. This section also installs, operates, and maintains a communications PATCENT to provide for technical control at the base signal center. Wire teams of this section install and maintain the telephone local distribution system and telephones for the base headquarters. These teams also install all field wire and cable from the PATCENT to signal communications center facilities and multichannel radio terminals and to nearby corps units.

c. Communications Center Section. The communications center section of the base signal operation platoon establishes and operates a base echelon communications center. This communications center has messenger, message center, cryptographic, and teletypewriter terminal facilities that operate on a 24-hour basis.

d. Radio Section. The radio section of the base signal operation platoon has seven three-man radio teams. Six of these teams operate radio teletypewriter stations in the corps command nets as required. The seventh team operates a mobile radio station equipped to provide a radio wire integration facility at the base echelon signal center. This station also operates in the FM-voice and SSB-voice command nets. It provides for early contact with similar command signal operations company equipments at corps signal centers in the airhead (para 12–12, 13–4*i*).

e. Radio Carrier Terminal Section. The radio carrier terminal section has seven multichannel radio terminal teams. Three of these teams install, operate, and maintain multichannel radio terminals at the airborne corps base signal center. These are double terminals, each of which terminates two 12-channel systems. Two of these systems are established between the base signal center and the main and alternate signal centers. Each of the other four systems is established between the base signal center and a designated major subordinate corps unit where the terminal is furnished by one of the other four teams.

13–11. Forward Support Section

There are four forward support sections, each having two multichannel radio terminal teams. Three of these sections provide multichannel radio terminals at the main and alternate signal centers of three airborne divisions. The fourth section provides multichannel radio terminals at headquarters of two other corps units. Each terminal of these sections operates with a terminal at airborne corps main or alternate signal center to establish a 12-channel command system.

13–12. Artillery Signal Support Platoon

a. Platoon Operations. The artillery signal support platoon provides command multichannel radio communications for the airborne corps artillery headquarters. In addition, this platoon provides multichannel radio terminal facilities at the corps artillery headquarters to terminate the airborne corps command multichannel radio systems. Although this platoon operates in the vicinity of the airborne corps artillery headquarters, its teams operate at each division artillery headquarters and at the headquarters of major airborne corps artillery organizations.

b. Radio Carrier Terminal Section. The radio carrier terminal section of artillery signal support platoon installs, operates, and maintains all multichannel radio terminal facilities for the airborne corps signal battalion at the corps artillery headquarters. These facilities are double terminals that terminate 12-channel systems between the airborne corps artillery headquarters and terminals at airborne corps main and alternate signal centers, at headquarters of the corps artillery groups and battalions, and at each of three division artillery

headquarters. This section has 16 three-man multichannel radio terminal teams. Six of these teams provide the 6 double terminals at the airborne corps artillery headquarters, while the remaining 10 teams provide the multichannel radio terminals at the division artillery and corps artillery unit headquarters.

c. Wire Section. The wire section of the artillery signal support platoon installs, operates, and maintains a PATCENT at the airborne corps artillery headquarters. For this purpose, the section has a two-man team of circuit controllers to provide for technical control of circuits terminating at the signal communications facilities provided by the artillery signal support platoon. This wire section also has two four-man wire teams to install and maintain all field wire and cable required to complete circuits from the platoon multichannel radio terminals to the communications PATCENT and from this central to the corps artillery headquarters communications center facilities.

APPENDIX A

REFERENCES

1. Allied and Joint Communication Publications

ACP 117	Allied Routing Indicator Book.
ACP 121	Communication Instructions, General.
(C) ACP 122	Communication Instructions, Security (U).
ACP 127	Communication Instructions, Tape Relay Procedure.
(C) JANAP 201 ( )	Status of Noncryptographic JANAPs and ACPs.

2. Army Regulations

AR 105–31	Message Preparation.
AR 220–58	Organization and Training for Chemical, Biological, and Radiological (CBR) Operations.
AR 310–3	Department of the Army Publications—Preparation, Coordination, and Approval.
AR 320–5	Dictionary of United States Army Terms.
AR 320–50	Authorized Abbreviations and Brevity Codes.
AR 350–1	Army Training.
AR 380–5	Safeguarding Defense Information.
AR 380–6	Security, Automatic, Time-Phased Downgrading and Declassification System.
(O) AR 380–40	Safeguarding Crypto-Information (U)
AR 380–41	Control of Cryptomaterial.
(S) AR 380–46	Restriction on the Use of Information Processing Equipment (U)
(C) AR 380–51	Transmission of Classified Information (U).
(C) AR 380–52	Codes, Nonmachine Ciphers, and Authentication Systems (U).
AR 604–5	Clearance of Personnel for Access to Classified Defense Information and Material.
AR 750–5	Organization, Policies, and Responsibilities for Maintenance Operations.
AR 750–8	Command Maintenance Management Inspections (CMMI).
AR 750–18	Communications Security Equipment Maintenance.

3. Army Training Programs and Training Tests

ATP 20–5	Army Training Program for Field Exercises and Maneuvers.
ATT 32–400	Signal Security (SIGSEC), Army Type Brigades, Battalions, and Other Units and Teams.

4. Department of the Army Pamphlets

DA Pam 20–301	Work Simplicication in Action Through Use of Work Distribution Chart, Flow Process Chart, Work Count, Motion Economy, Layout Studies; Instructor's Guide.

DA Pam 21-52	Cold Facts for Keeping Warm.
DA Pam 108-1	Index of Army Films, Transparancies, GTA Charts, and 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, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
(C) DA Pam 310-9	Index of Communications Security (COMSEC) Publications (U)
DA Pam 360-522	The U.S. Fighting Man's Code.
DA Pam 350-10	U.S. Army Formal Schools Catalog.
DA Pam 750-1	Preventive Maintenance Guide for Commanders.

5. Field Manuals and Technical Manuals

FM 7-15	Rifle Platoon and Squads—Infantry, Airborne, and Mechanized.
FM 11-20	Signal Operations, Theater of Operations.
FM 11-21	Tactical Signal Communication Systems, Army, Corps, and Division.
FM 11-50	Signal Battalion, Armored, Infantry, and Infantry (Mechanized) Divisions.
FM 11-75	Army Command Signal Radio and Cable Battalion.
FM 11-95	Army Signal Battalion.
FM 21-5	Military Training Management.
FM 21-6	Techniques of Military Instruction.
FM 21-30	Military Symbols.
FM 21-40	Chemical, Biological, and Nuclear Defense.
FM 21-41	Soldier's Handbook for Defense Against Chemical and Biological Operations and Nuclear Warfare.
FM 21-48	Chemical, Biological, and Radiological (CBR), and Nuclear Defense Training Exercises.
FM 21-75	Combat Training of the Individual Soldier and Patrolling.
FM 23-65	Browning Machine Gun Caliber .50 HB, M2.
FM 24-1	Tactical Communications Doctrine.
FM 24-16	Signal Orders, Records and Reports.
FM 24-17	Tactical Communications Center Operation.
FM 24-19	Communications-Electronics Reference Data.
FM 29-22	Maintenance Operations in the Field Army.
FM 30-5	Combat Intelligence.
FM 30-30	Aircraft Recognition Manual.
FM 31-15	Operations Against Irregular Forces.
FM 31-16	Counterguerrilla Operations.
FM 31-22	U.S. Army Counterinsurgency Forces.
FM 31-23	Stability Operations—U.S. Army Doctrine.
(C) FM 31-40	Tactical Cover and Deception (U).
(C) FM 32-5	Signal Security (SIGSEC) (U)
(C) FM 32-20	Electronic Warfare (Ground Based) (U)
(S) FM 32-20A	Electronic Warfare (Ground Based) (U)
FM 44-1	U.S. Army Air Defense Artillery Employment.
(S) FM 44-1A	U.S. Army Air Defense Employment (U).
FM 44-2	Air Defense Artillery Employment (Automatic Weapons) M42/M55.
FM 100-5	Field Service Regulations—Operations.

FM 100-15	Field Service Regulations, Larger Units.
FM 100-27	U.S. Army/U.S. Air Force Doctrine for Tactical Airlift Operations.
FM 101-5	Staff Officers Field Manual: Staff Organization and Procedure.
TM 38-750	Army Equipment Record Procedures.

6. Tables of Organization and Equipment

TOE 11-15	Corps Signal Battalion.
TOE 11-16	Headquarters and Headquarters Company, Corps Signal Battalion.
TOE 11-17	Command Operations Company (Main or Alternate), Corps Signal Battalion.
TOE 11-18G	Command Radio Relay and Cable Company, Corps Signal Battalion.
TOE 11-19	Command Artillery Radio Relay Company, Corps Signal Battalion.
TOE 11-85	Signal Combat Area Battalion.
TOE 11-117	Signal Support Company.
TOE 11-122	Headquarters and Headquarters Detachment, Signal Group.
TOE 11-127	Signal Operations Company, Medium Headquarters.
TOE 11-225	Airborne Corps Signal Battalion.
TOE 11-226	Headquarters and Headquarters Company, Airborne Corps Signal Battalion.
TOE 11-227	Command Signal Operations Company, Airborne Corps Signal Battalion.
TOE 11-228	Base and Support Signal Operations Company, Airborne Corps Signal Battalion.
TOE 11-500	Signal Service Organization.
TOE 29-500	Composite Service Organization.
TOE 52-1	Headquarters, Corps or Airborne Corps.

INDEX

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