

## CHAPTER 2

### SIGNAL TROPOSCATTER COMPANY (Light)

#### 2-1. Introduction

*a.* The Signal Troposcatter Company (Light) is organized and equipped to support a wartime TA. It operates in the COMMZ of a theater.

*b.* The Tropo Company is essential to responsive communications support in the TCS(A). Planning must keep pace with changing requirements. Requirements may dictate augmentation. Discussions will be limited to the Company's organic assets.

- c.* Company support requirements will depend on-
- (1) Mission of supported headquarters.
  - (2) Force size.
  - (3) Geographical area.

#### 2-2. Structure

The Tropo Company (Light), table of organization and equipment (TOE) 11-367, is a building block unit designed to provide high-quality, multichannel troposcatter radio communications links for long-distance communications. The Company can command and control additional troposcatter radio teams without headquarters augmentation.

*a. Mission.* The Tropo Company provides multichannel troposcatter radio links. These links may be used to connect major headquarters or area signal nodes in a TCS(A).

*b. Assignment.*

(1) The Tropo Company (Light) may be assigned to the TCC(A) or a subordinate Theater Signal Brigade.

(2) Platoons or sections may be attached to other signal units. If so, technical control usually passes to that signal unit. Overall system technical operations often are directed and engineered at theater level.

(3) The Company is a category III unit. There is normally one Tropo Company (Light) in a Theater Signal Brigade.

*c. Type organization.* The Tropo Company (Light) is not adaptable to a type B organization employing indigenous personnel (AR 310-31).

*d. Organization.* The Signal Tropo Company (Light) consists of the following:

- (1) A Company Headquarters.
- (2) A Technical Control Section.
- (3) Four Troposcatter Platoons.
- (4) A C-E Maintenance Section.

#### 2-3. Command and control

The Tropo Company (Light) is under the command and control of the TCC(A) or the TCC(A) Theater

Signal Brigade of attachment. Terminals will be widely dispersed. Technical direction is received by terminal sections from system controllers. The Company commander's means for exercising internal command and control are discussed under resources in this chapter. General and special operating instructions contained in the communications-electronics operating instructions (CEOI) and standing operating procedures (SOPs) should be used to cover normal situations.

*a. Company Headquarters.* The Company Headquarters provides the Company commander with the means to direct and coordinate operations and training. The staff plans for and coordinates administrative and logistical support to the other elements of the Company. Execution of plans and orders depends on higher headquarters logistical support, especially transport priorities.

(1) *The Company Command Element.* The Tropo Company presents a unique command challenge. The wide dispersion of its terminal sections complicates normal administrative and logistics support, thus making it difficult to exercise command and provide leadership. The Company platoon officers and noncommissioned officers (NCOs), in effect, must function as staff and line leaders.

(a) The Company commander is responsible for successfully accomplishing assigned missions and functions. The commander exercises command and control by issuing orders and directives to the operating elements.

(b) The first sergeant is the senior NCO in the Company. He or she acts in the name of the Company commander when dealing with other NCOs, and is the commander's principal enlisted adviser. The first sergeant supervises the functions of the enlisted personnel in the Company. The fact that Company personnel operate at a distance from Company Headquarters makes this task difficult. All Company NCOs find themselves performing many tasks which would ordinarily be done for them in other type units. The first sergeant maintains close contact with the sergeant major/command sergeant major of higher headquarters. He or she assists the commander by ensuring day-to-day tasks are performed, to include administration, training, scheduling, internal operations, and counseling (enlisted personnel).

(c) The unit clerk assists the first sergeant by providing routine administrative support for day-to-day requirements. The unit clerk also assists in the operation of the switchboard ((d) below).

(d) A switchboard operator operates the manual telephone switchboard and the high frequency (HF)/

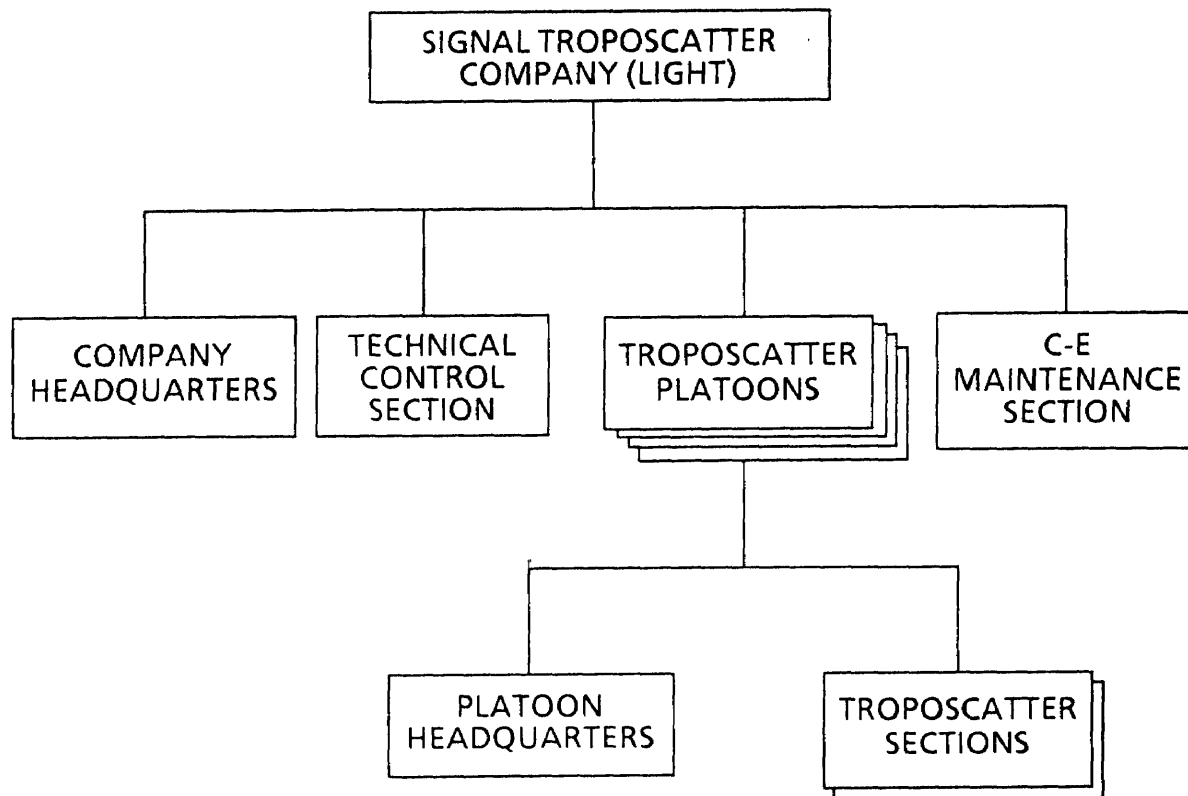


Figure 2-1 Organization of the Signal Troposcatter Company (Light).

single sideband (SSB) radio.

(2) *Food Service Element.* The food service sergeant, first cook, and four food service specialists provide a 24-hour dining facility. See FM 10-23 for details of unit feeding. Isolated sections require food service support from other units.

(3) *Supply Element.* The supply sergeant is assisted by an equipment records and parts specialist and an armorer. Supply operations provide the repair parts for operation of Company C-E equipment and vehicles. See DA Pamphlet 710-2-1 and FM 10-14 for details of unit supply.

(a) The supply sergeant acquires and distributes supplies, ensures that supply records are maintained, and supervises the armorer and the equipment records and parts specialist.

(b) The armorer is responsible for unit level maintenance of organic weapons. He or she maintains a prescribed load list (PLL) of organizational repair parts for weapons organic to the Company.

(c) The equipment records and parts specialists maintains the PLL for organizational demand-supported signal repair parts.

(4) *NBC Element.* The chemical NCO is responsible for the accomplishment of the Company commander's NBC program. As a minimum, the chemical NCO—

(a) Is the principal NBC adviser to the commander.

(b) Ensures authorized NBC equipment is on hand and maintained.

(c) Develops individual and collective NBC training.

(d) Determines unit NBC team requirements.

(e) Ensures team members are appointed on unit orders, equipped, and trained.

(f) Ensures NBC training is conducted during physical training and during daily routines.

(5) *Motor Maintenance Element.* The maintenance supervisor is assisted by five light wheel vehicle mechanics, a PLL clerk, three power generator equipment repairers, a recovery vehicle operator, a utilities equipment repairer, and four petroleum large vehicle operators.

(a) The maintenance supervisor is the principal maintenance adviser to the commander. He or she plans for and supervises unit-level maintenance of vehicles and power generators organic to the Company, supervises maintenance personnel, and provides supervised on-the-job-training.

(b) The light wheel vehicle mechanics provide unit-level maintenance on organic vehicles.

(c) The PLL clerk is responsible for the maintenance of motor repair parts records and stockage of organizational demand-supported items.

(d) The power generator equipment repairers are responsible for unit-level maintenance of equipment organic to the Company.

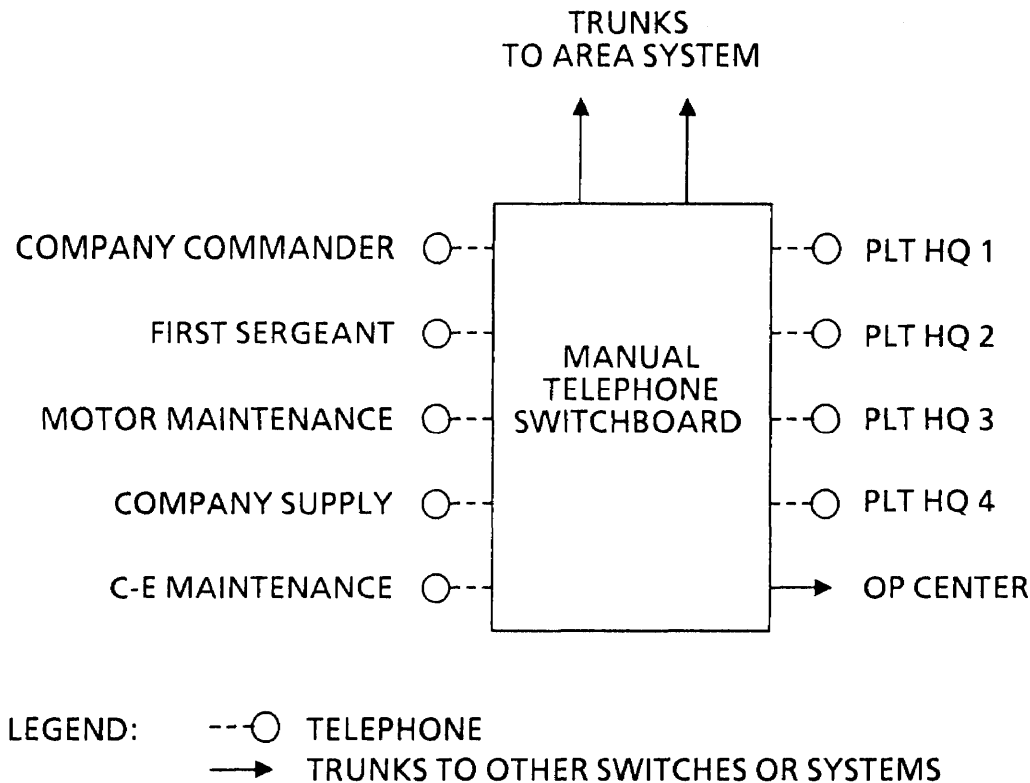


Figure 2-2. Signal Troopscatter Company (Light) Type Telephone Net.

(e) The recovery vehicle operator is responsible for retrieving disabled vehicles.

(f) The utilities equipment repairer is responsible for the light set organic to the Company.

(g) The petroleum large vehicle operators are responsible for petroleum, oils, and lubricants (POL) resupply to widely dispersed tropo sites.

b. *Resources available.* The Company commander has the following resources for command and control:

- (1) Existing common-user telephone network.
- (2) Local message centers.
- (3) Internal telephone network (switchboard and telephones).
- (4) HF/SSB radio.
- (5) Troopscatter voice orderwire.
- (6) Messenger service.

c. *Internal communications.* Communications among the Company commander, the Technical Control Section, and the displaced radio terminals is essential. The type communications required depends on the type message or report. The following means of communications will normally be available:

- (1) Access to the common-user network.
- (2) Manual telephone systems. See figure 2-2.
- (3) An HF/SSB radio Company Command and Technical Control Net.

Company Technical Control uses the net to supervise system installation, system quality, circuit rerouting, and displacement. The Platoon Command and Technical Control Nets are netted together for this func-

tion. Figure 2-3 shows the Company Command and Control Net.

(4) Troopscatter orderwire channel for terminal-to-terminal technical control.

## 2-4. Employment

The Company will normally be employed at EAC in the COMMZ. It provides a multichannel communications system or links in a system when it is more practical to use tropospheric radio because of terrain, distance, or the tactical situation. The Troppo Company (Light) provides an extended range over multichannel line of sight (LOS) systems of the TCS(A) between area signal nodes and major headquarters.

### a. Functions.

(1) At full strength, the Signal Troppo Company (Light) can install, operate, and maintain 16 terminals, or up to 8 multichannel systems. These terminals are mobile and can be installed and disassembled by three persons in 1 hour with the quick-reaction antenna (QRA). They are air transportable. Although mobile, they cannot operate in transit.

(2) Troopscatter radio provides reliable high-quality voice, teletypewriter, and data circuits over extended distances. Because of its method of radio wave propagation, troopscatter radio is not limited to LOS transmissions.

b. *Employment in the Theater Communications Command (Army).* One Signal Troppo Company (Light)

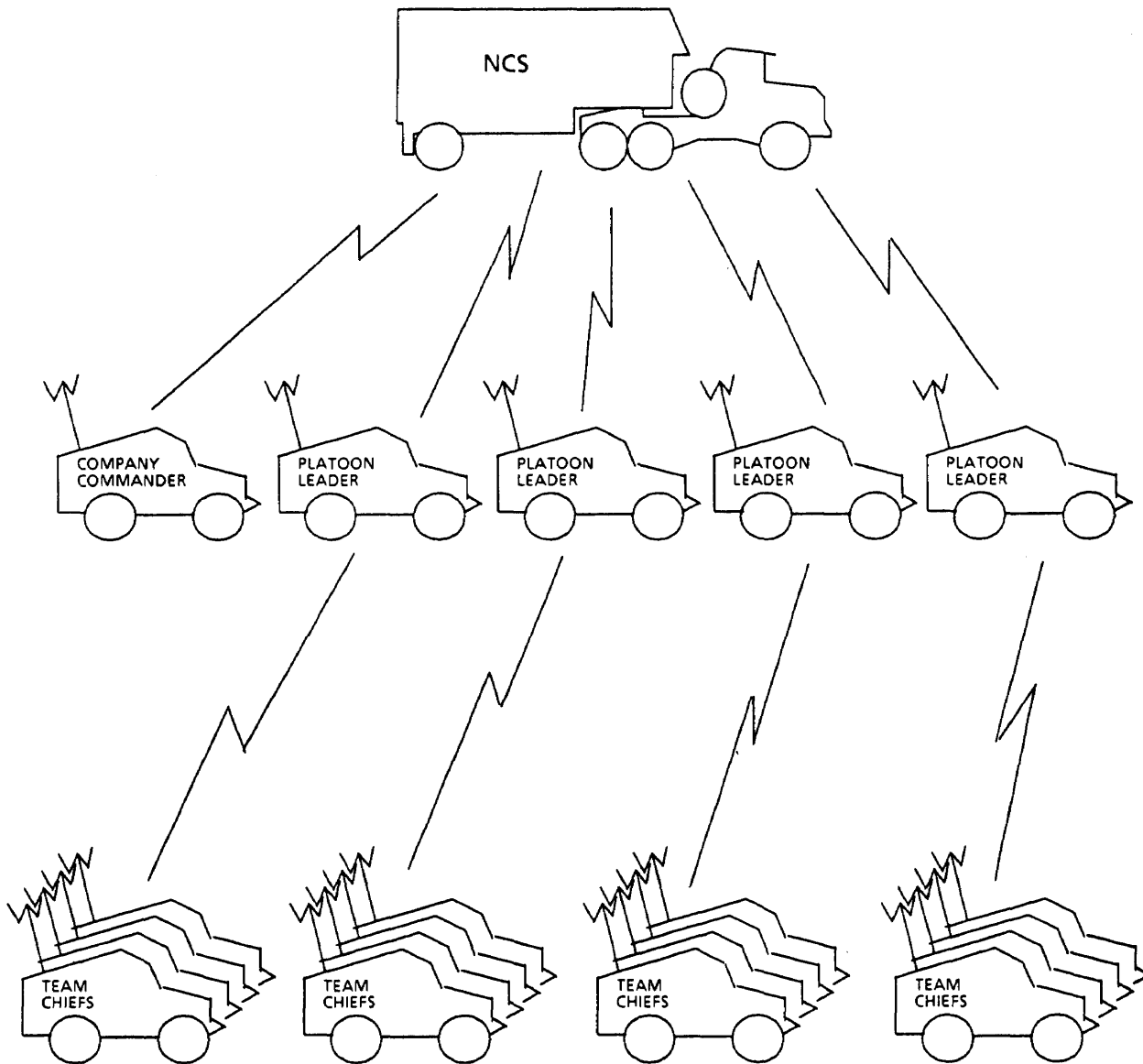


Figure 2-3. Signal Troop Company (Light) Type HF/SSB Radio Command and Technical Control Net.

is normally assigned to a Theater Signal Brigade. It is employed to provide—

(1) Complete direct point-to-point command links between major command and functional headquarters in the COMMZ.

(2) Communications links between area signal nodes in the TCS(A). These links extend over inaccessible areas. Circuits are either terminated at a node or redirected to other links.

(3) Skip node capability to bypass nodes.

## 2-5. Operations

The Signal Troop Company (Light) provides communications links over extended distances between COMMZ headquarters and between area signal nodes. Operations require detailed link engineering, site planning, and preparation.

*a. Capabilities.* The Signal Troop Company (Light) can provide the following:

(1) Installation, operation, and maintenance of eight troposcatter radio communications links (two terminals per link). These links are capable of spanning a nominal distance of up to 100 miles (160 kilometers) with maximum traffic channels.

(2) Circuit patching and limited test facilities to provide a technical control capability.

*b. Limitations.*

(1) The Signal Troop Company (Light) requires the following support:

(a) Health, religious, financial, and legal services.

(b) Personnel and administrative services.

(c) Bulk POL resupply.

(d) Supplemental transportation.

(e) Refrigeration repair.

(2) Troposcatter installation may require a site survey for topography, siting, soil condition, terrain, bearings, horizon angles, and distances between terminals. Engineer support often is required for access to and development of remote sites. Because troposcatter sites are high priority targets, a high degree of physical security is required. Security forces from combat arms or indigenous troops may be required.

(3) Cable and radio teams will be required to extend circuits to outlying units. The Theater Army Area Command (TAACOM) support element is required for intermediate (general support (GS)) maintenance and logistical support of organic C-E equipment. Intermediate (GS) maintenance for communications security (COMSEC) equipment is provided by the GS unit of the TCC(A). Army aviation support may be required to supply and maintain troposcatter terminals in isolated areas.

(4) Frequencies must be engineered and assigned by the TCC(A).

*c. Defense.* Personnel of the Signal Tropo Company (Light) may be used to conduct a coordinated defense of their area or a limited defense of an installation. Remote installations may require security forces. Use of Company personnel in defense may result in reduced communications support. Chapter 12 has more information on rear battle operations defense and operations in an NBC environment.

*d. Mobility.*

(1) The Company headquarters has the following organic vehicles for transport of personnel and equipment:

(a) Truck utility: tactical ¾-ton with equipment (W/E) M1009.

(b) Truck cargo: tactical 5/4-ton 4x4 W/E M1008.

(c) Truck cargo: 2½-ton 6x6 W/E.

(d) Truck cargo: 5-ton 6x6 LWB W/E.

(e) Truck wrecker: 5-ton 6x6 with winch W/E.

(2) The Company is air transportable. TA aviation assets may be required for emergency transport of support personnel and repair parts.

## 2-6. Deployment

*a.* The Signal Tropo Company (Light) may be deployed in a theater or to support contingency operations. Simultaneous displacement of all Company elements is not likely after initial deployment. Company elements may be deployed to establish links between a COMMZ headquarters and forward command posts separated by an impassable land or water barrier.

*b.* Normally, the Company Headquarters will be collocated with one of the deployed operating elements. However, maintenance, supply, and personnel support of dispersed terminals may be primary considerations that determine the headquarters location.