CHAPTER 3

TECHNICAL CONTROL SECTION

3-1. Introduction

a. The Technical Control Section provides limited technical control, circuit patching, and test facility capability. It supervises the Signal Tropo Company (Light) technical operations and may also be used to complement the technical control facilities of other supported signal units.

b. The Section has a Communications Technical Control Center (AN/TSQ-84), an Operations Center (AN/MSC-31), air conditioning, power generators, and support equipment.

3-2. Structure

The Technical Control Section provides personnel and equipment for diagnostic and engineering services of troposcatter signals and channels.

a. Mission. The Technical Control Section provides technical control, circuit patching, and limited quality-assurance test facilities. It supervises quality of the circuits and systems of the Company and those operated by signal units that interface with the Company.

b. Assignment. The Technical Control Section is organic to the Signal Tropo Company (Light), TOE 11-367.

c. Organization. The Technical Control Section provides continuous operations in support of the Company or an area of assignment. Operations are normally in two 12-hour shifts.

3-3. Command and Control

The Technical Control Section provides the means for the Company commander to control the Signal Tropo Company (Light). The area communications chief supervises section personnel.

a. Technical Control Section Personnel. The technical control officer represents the commander and provides direct supervision to the personnel assigned to the Section. Personnel assigned to the Section perform two separate, but related, functions: facilities control and circuit control.

(1) The area communications chief, an illustrator, single-channel radio operators, and telecommunications center operators operate the Communications Operations Center (AN/MSC-31). The Operations Center provides the facilities control.

(a) The area communications chief supervises section personnel; prepares system plans, diagrams, and circuit orders; coordinates troposcatter system installation, operation, and maintenance; reroutes circuits as required or as directed by the higher echelon systems control element; coordinates locations, services, and displacements with supported units; coordinates redeployment of terminals; and maintains current systems and equipment status, unit readiness, map profiles, site plans, and other operations information.

(b) The illustrator prepares systems and circuit diagrams, status displays, and map profiles.

(c) The radio operators operate the HF/SSB radio in the Company Command and Technical Control Net and are responsible for operation of the SB-22/PT switchboard in the AN/MSC-31.

(d) The combat telecommunications center operators are responsible for the operation of the teletypewriters in the Operations Center.

(2) The circuit control sergeant and three tactical circuit controllers operate the Communications Technical Control Center (AN/TSQ-84). The Technical Control Center provides circuit control.

(a) The circuit control sergeant supervises personnel in the Technical Control Facility that provides interface, interconnect, and test facility for communications systems and circuits that enter or exit the site.

(b) The tactical circuit controllers reduce circuit outage time by rerouting circuits or channels; establish emergency interconnections between troposcatter terminals and between terminals and communications units; correct difficulties between local and distant facilities by directing equipment checks; conduct tests to isolate, diagnose, and correct faults; place circuits into service as traffic load increases; maintain circuit outage records; and ensure continuity and responsiveness of communications.

b. Resources Available. The technical control officer, the area communications chief, and the circuit control sergeant have the following resources to establish and/or maintain operational and technical control of the Company systems:

(1) Existing common-user telephone network.

(2) Local message centers.

(3) Internal telephone network (switchboard and telephones).

(4) HF/SSB radio.

(5) Troposcatter voice orderwire.

(6) Teletypewriter.

(7) Messenger service.

c. Internal Communications. The following means of communications will normally be available:

(1) Access to the common-user telephone network.

(2) Organic equipment that provides a manual telephone system. A manual switchboard is located in the AN/MSC-31. See figure 2-2.

(3) HF/SSB radio Company Command and Technical Control Net located in the Operations Center (AN/MSC-3l) used to communicate with distant troposcatter sites. See figure 2-3.

(4) Troposcatter orderwire to pass instructions and information.

(5) Teletypewriter circuits to pass coordination instructions.

3-4. Employment

a. The Technical Control Section is employed as a single unit. It provides technical expertise to ensure quality communications on systems and channels which pass through its area.

b. At full strength, the Technical Control Section is capable of providing continuous facility and circuit control services. These include, but are not limited to–

(1) Systems planning and interfaces.

(2) Circuit activation, routing, rerouting, and restoral.

(3) Circuit testing, fault isolation, and quality assurance.

(4) Status reporting and recordkeeping.

(5) Internal and external coordination.

3-5. Operations

The Technical Control Section is responsible for controlling all C-E operations directed by the Company. It coordinates action directed by higher engineering and technical control elements. Its functions are complicated because directions can come from several sources and interfaces to other links not under its control. It is responsible for quality of Company-operated systems and circuits.

a. Capabilities. The Technical Control Section provides–

(1) Facility control.

(2) Circuit control.

(3) Continuous operations.

(4) Net control for HF/SSB Company Command and Technical Control Net(s).

b. Limitations.

(1) The Technical Control Section depends on Company Headquarters for administrative, logistical, food service, billeting, and personal service.

(2) Company Headquarters provides organizational maintenance on vehicles, environmental control equipment, and power generators.

(3) The Company C-E Maintenance Section provides intermediate (direct support (DS)) maintenance on organic C-E equipment.

(4) Intermediate (GS) maintenance for COMSEC equipment is provides by the GS unit of the TCC(A).

c. Defense.

(1) Technical Control Section personnel may be used to assist in a limited coordinated defense of an installation or an area of assignment. This may include rear battle operations, operations in an internal defense, or operations under NBC conditions.

(2) Due to the critical nature of the Section's mission and the limited number of assignment personnel, personnel should be used only during extreme emergencies. Technical control will deteriorate rapidly if personnel are used for any purpose other than assigned duties.

d. Mobility. The Technical Control Section has one 5/4-ton 4 x 4 cargo truck, with a communications kit and two 2½-ton 6 x 6 cargo trucks. The 2½-ton trucks are used to transport the AN/TSQ-84 and the AN/MSC-31. Additional transport for personnel and supplies must be provided by the Company.

3-6. Deployment

The Technical Control Section will normally be collocated with the largest concentration of troposcatter elements of the Signal Tropo Company (Light).