APPENDIX L

COMMUNICATIONS, AUTOMATION, AND POSITION NAVIGATION SYSTEMS

Section I. OPERATIONAL FACILITY RULES AND EQUIPMENT

L-1. General

a. The ability to communicate is essential to C^2 and the accomplishment of the assigned mission. in order to ensure effective communications, a system has evolved which authorizes the specific types and numbers of communications equipment required for a unit or element.

b. The OPFAC rule is the tool used to determine—

- At what level/position the communications capability is required.
- The specific type and numbers of communications equipment needed.

c. The OPFAC rule is the smallest element of a TOE to which a piece of communications equipment is assigned, such as the company commander, wrecker operator, PA, or ambulance.

L-2. Requirements

The OPFAC rules are the basis for documenting command, control, communications, and computer equipment in the basis-of-issue plans (BOIPs) and TOEs. The OPFAC rule system is an ongoing validation. These rules are subject to change. Tables L-1 through L-13 depicts the OPFAC distribution of equipment for divisional and nondivisional medical companies.

Table L-1. Medical Company, Forward Support Battalion (Supporting 2–3 Infantry Battalions) (TOE 08027L2)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/21	PLL Clerk	DHA51			TA-1035				
02/00	Trmt Plt HQ	DF281			TA-1035				
03/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
03/02	PA	DG205	88(2)				PLGR(2)		
05/01	Fld Surgeon	DG204	89				PLGR		
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
07/0A	Amb Wheel(6)	DI201	90(6)				PLGR(6)		

Table L-2. Medical Company, Forward Support Battalion (Supporting 4 Infantry Battalions) (TOE 08027L3)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/20	PLL Clerk	DHA51			TA-1035				
02/00	Trmt Plt HQ	DF281			TA-1035				
03/01	Fld Surgeon(3)	DG204	89(3)				PLGR(3)		
03/02	PA(3)	DG205	88(3)				PLGR(3)		
05/01	Fld Surgeon	DG204	89				PLGR		
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
07/0A	Amb, Wheel(8)	DI201	90(8)				PLGR(8)		

Table L-3. Medical Company, Main Support Battalion, Heavy/Light Division (TOE 08057L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035		PLGR		
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/05	Wrecker Operator	DI203	90				PLGR		
01/18	PLL Clerk	DHA51			TA-1035				
02/00	DMSO	DH201			TA-1035 (2)		PLGR	MEDTCU MEDTCU	MEDSUP MEDMNT MEDASM
03/00	PVNTMED Section	DE204			TA-1035	FAX	PLGR(3)		
06/00	Trmt Plt HQ	DF281			TA-1035				
07/01	Fld Surgeon(4)	DG204	89(4)				PLGR(4)		
07/02	PA(4)	DG205	88(4)				PLGR(4)		
09/01	Fld Surgeon	DG204	89				PLGR		
09/02	PA	DG205	88				PLGR		
11/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
11/0A	Amb, Wheel(10)	DI201	90(10)				PLGR(10)		

Table L-4. Medical Company, Forward Support Battalion, Heavy/Light Division (TOE 08058L2)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035		PLGR		
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/20	PLL Clerk	DHA51			TA-1035				
01/18	Wrecker Operator	DI203	90				PLGR		
02/00	Trmt Plt HQ	DF281			TA-1035				
02/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
02/02	PA(2)	DG205	88(2)				PLGR(2)		
05/01	Fld Surgeon	DG204	89				PLGR		
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
08/0A	Amb, Wheel(4)	DI201	90(4)				PLGR(4)		
09/0A	Amb, Track(4)	DI201	90(4)				PLGR(4)		

Table L-5. Medical Company, Main Support Battalion, Airborne Division (TOE 08267L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035		PLGR		
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
08/18	PLL Clerk	DHA51							
02/00	DMSO	DH201			TA-1035 (2)		PLGR	MEDTCU	MEDSUP
03/00	PVNTMED Section	DE204			TA-1035	FAX	PLGR(3)		
06/00	Trmt Plt HQ	DF281			TA-1035				
08/01	Flt Surgeon(2)	DG204	89(2)				PLGR(2)		
08/02	PA(2)	DG205	88(2)				PLGR(2)		
10/01	Flt Surgeon	DI204	89				PLGR		
10/02	PA	DG205	88				PLGR		
12/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
13/0A	Amb, Wheel(8)	DI201	90(8)				PLGR(8)		

Table L-6. Medical Company, Forward Support Battalion, Airborne Division (TOE 08277L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
02/00	Trmt Plt HQ	DF281			TA-1035				
03/01	Flt Surgeon(2)	DG204	89(2)				PLGR(2)		
03/02	PA(2)	DG205	88(2)				PLGR(2)		
05/01	Flt Surgeon	DG204	89						
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
08/0A	Amb, Wheel(8)	DI201	90(8)				PLGR(8)		

Table L-7. Medical Company, Main Support Battalion, Air Assualt Division (TOE 08277L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADPSystems Requirements
01/00	Company HQ	DB285	89	213	TA-1035		PLGR		
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/14	PLL Clerk	DHA51			TA-1035				
02/00	DMSO	DH201			TA-1035 (2)		PLGR	MEDTCU	MEDSUP
03/00	PVNTMED Section	DE204			TA-1035	FAX	PLGR		
06/00	Trmt Plt HQ	DF281			TA-1035				
08/01	Flt Surgeon	DG204	89				PLGR		
08/02	PA	DG205	88				PLGR		
10/01	PA	DG205	88				PLGR		
10/02	Flt Surgeon	DG204	89				PLGR		
12/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
13/0A	Amb, Wheel(10)	DI201	90(8)				PLGR(8)		

Table L-8. Medical Company, Forward Support Battalion, Air Assault Division (TOE 08278L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035		PLGR		
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
02/00	Trmt Plt HQ	DF281			TA-1035				
03/01	Flt Surgeon(2)	DG204	89(2)				PLGR(2)		
03/02	PA	DG205	88				PLGR		
03/03	PA	DG205	88				PLGR		
05/01	Flt Surgeon	DG204	89				PLGR		
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
08/0A	Amb, Wheel(6)	DI201	90(6)				PLGR(6)		

Table L-9. Medical Company, Support Battalion, Heavy Separate Brigade (TOE 08437L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/15	Wrecker Operator	DI203	90				PLGR		
01/20	PLL Clerk	DHA51			TA-1035				
02/00	BMSO	DH201			TA-1035 (2)		PLGR	MEDTCU	MEDSUP
03/00	PVNTMED Section	DE204			TA-1035	FAX	PLGR		
06/00	Trmt Plt HQ	DF281			TA-1035				
07/01	Fld Surgeon(3)	DG204	89(3)				PLGR(3)		
07/02	PA(3)	DG205	88(3)				PLGR(4)		
08/00	Surgical Sqd	DED00			TA-1035	FAX	PLGR		
10/01	Fld Surgeon	DG204	89				PLGR		
10/02	PA	DG205	88				PLGR		
12/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
13/0A	Amb, Wheel (6)	DI201	90(6)				PLGR(6)		
14/0A	Amb, Track(6)	DI201	90(6)				PLGR(6)		

Table L-10. Medical Company, Support Battalion, Infantry Brigade (TOE 08438L1)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/15	Wrecker Operator	DI203	90				PLGR		
01/20	PLL Clerk	DHA51			TA-1035				
02/00	BMSO	DH201			TA-1035 (2)		PLGR	MEDTCU	MEDSUP
03/00	PVNTMED Section	DE204			TA-1035	FAX	PLGR		
06/00	Trmt Plt HQ	DF281			TA-1035				
07/01	Fld Surgeon(3)	DG204	89(3)				PLGR(3)		
07/02	PA(3)	DG205	88(3)				PLGR(3)		
08/00	Surgical Sqd	DED00			TA-1035	FAX	PLGR		
10/01	Fld Surgeon	DG204	89				PLGR		
10/02	PA		DG205	88			PLGR		
12/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
13/0A	Amb, Wheel(10)	DI201	90(10)				PLGR(10)		

Table L-11. Headquarters and Support Medical Company, Area Support Medical Battalion (TOE 08456L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
09/00	Company HQ	DB285	89	213	TA-1035		PLGR		
09/01	Company Cdr	DB202	89		TA-1035		PLGR		
10/00	Trmt Plt HQ	DF281			TA-1035				
11/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
11/02	PA(2)	DG205	88(2)				PLGR(2)		
14/01	Fld Surgeon	DG204	89				PLGR		
14/02	PA	DG205	88				PLGR		
15/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
16/0A	M1010 Amb(8)	DI201	90(8)				PLGR(8)		

Table L-12. Area Support Medical Company, Area Support Medical Battalion (TOE 084572)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Company HQ	DB285	89	213	TA-1035				
01/01	Company Cdr	DB202	89		TA-1035		PLGR		
01/21	PLL Clerk	DHA51			TA-1035				
02/00	Trmt Plt HQ	DF281			TA-1035				
03/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
03/02	PA	DG205	88(2)				PLGR(2)		
05/01	Fld Surgeon	DG204	89				PLGR		
05/02	PA	DG205	88				PLGR		
07/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
08/0A	Ground Amb(6)	DI201	90(6)				PLGR(6)		

Table L-13. Medical Troop, Support Squadron, Armored Calvary Regiment (TOE 08477L0)

PARA	User/ Position	OPFAC Rule#	FM Radio	AM Radio	MSE	FAX	POS/NAV Equipment	ADP Equipment	ADP Systems Requirements
01/00	Troop HQ	DB285	89	213	TA-1035				
01/01	Troop Cdr	DB202	89		TA-1035		PLGR		
01/0A	Wrecker Operator	DI203	90		TA-1035				
02/00	RMSO	DH921			TA-1035			MEDTCU	MEDSUP
03/00	Trmt Plt HQ	DF281			TA-1035				
04/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
04/02	PA(2)	DG205	88(2)				PLGR(2)		
06/01	Fld Surgeon(2)	DG204	89(2)				PLGR(2)		
06/02	PA	DG205	88(2)				PLGR(2)		
08/01	Amb Plt Leader	DF203	89		TA-1035		PLGR		
09/0A	Amb, Wheel(6)	DI201	90(6)				PLGR(6)		
10/0A	Amb, Track(6)	DI201	90(6)				PLGR(6)		

L-3. Communications Equipment

The OPFAC rules impact or four types of communications equipment:

a. Radios. Frequency modulation and AM radios comprise the family of radios discussed in this appendix as CNRs. When discussing the OPFAC rules for the medical company, the SINCGARS radios constitute the FM slice and the IHFR radio constitutes the AM component.

(1) *Single Channel Airborne Radio System.* The SINCGARS radios, AN/VRC-88, AN/VRC-89, and AN/VRC-90, operate in the 30-to 88-megahertz (mHz) frequency range in 25-kilohertz (kHz) steps for a total of 2,320 channels. They can operate in either a single-channel or frequency-hopping mode. For COMSEC, the medical company uses the KY-57 speech security device with its assigned SINCGARS equipment.

(a) AN/VRC-88. The AN/VRC-88 is a short-range, vehicular-mounted radio which has a manpack, an antenna, and a battery case as additional components. The radio can be removed from the vehicle and can be reconfigured as the PRC-119 manpack radio by installing the antenna and the battery case. It consists of one receiver/transmitter (RT), a radio mount, a mounting adapter, a vehicular antenna, and associated handset and cabling. The dismountable (PRC-119) short-range AN/VRC-88 adds the components needed to operate as a manpack radio. The radio has a 4-kilometer (km) range and maybe operated from a vehicle or in a dismounted configuration. This radio is normally used by treatment team B.

(b) AN/VRC-89. The AN/VRC-89 radio is a vehicular-mounted, dual configuration radio consisting of one short-range and one long-range, solid state, securable transceiver mounted in a single vehicular mount. It is basically two vehicular-mounted, short-range radio sets with an added power amplifier that provides one of the radio sets with a long-range communications capability up to 35 km. This radio is normally used by the medical company's/troop's CP, platoons, and treatment squads.

(c) AN/VRC-90. The AN/VRC-90 radio is used when the communications equipment normally operate over long distances (up to 35 km). This radio is especially suitable for ambulance teams who require unimpeded, long-range communications.

(2) *Improved-high frequency radio.* The AN/GRC-213 is a low-power manpack or vehicular-mounted configuration of the IHFR system. It provides a reliable high frequency coverage capability of 2 to 30 mHz for medical troops/companies. It has the capability to pass secure medical C^2 and CHS information over medium- to long-range distances. It also can be used over varying terrain features which would normally preclude the use of very high frequency (VHF)/FM CNRs.

(3) *Ancillary radio equipment.* The medical company/troop requires two main categories of ancillary equipment associated with its SINCGARS equipment. These are remote control devices and data fill/variable storage transfer devices.

(a) Control receiver-transmitter (CRT): C11561. The CRT C11561 provides SINCGARS vehicular radios with a remoting capability of up to 4 km. It is able to remotely control all front panel controls on the radio. This CRT C11561 may also be adapted with detachable control panels for electronics counter-countermeasure (ECCM) and COMSEC. The COMSEC and data adapter devices may be attached directly to the CRT for secure communications over the transmission line and optimal interface with digital data terminals. The CRT C11561 is an incremental change package for the medical company/troop. It will replace the AN/GRA-39 discussed below.

(b) Radio set control group: AN/GRA-39. The AN/GRA-39 is used to remote single channel radios. It is compatible with integrated and nonintegrated communications radios. The AN/GRA-39 controls only remote keying of radios from a terminal set; the operator must set the other functions at the location of the radio.

(c) Data fill devices. Data fill devices provide a means to transfer the required variables for the frequency-hopping mode from unit to unit and to enter the variables into the radio. The medical company/troop is authorized the following two devices for this requirement:

(1) *Electronic counter-countermeasure fill device: MX-10579/VRC.* The MX-10579 is used to enter hopset information into SINCGARS radio sets. Hop set information consists of radio frequencies which are automatically changed (hopped) during transmission and permits synchronization of radios in use. The MX-10579 is a hand-held, battery-operated device that is used to program SINCGARS radios with assigned frequencies over which the radios' frequencies hop for ECCM protection. It holds up to 13 hopsets and two transmission security keys (TSKs) variables. It can be filled with one location at a time or bulk loaded with a complete fill. The MX-10579 will be used only until such time the Battlefield Electronics Communications-Electronics System (BECS) becomes available.

(2) *Electronic notebook (EN): AN/CYZ-7A.* The AN/CYZ-7A is a small hand-held data memory device similar to a small calculator. It can be loaded with complete or partial SOI and frequency-hopping variables for SINCGARS. The EN provides the operator with an automated search method to locate call signs and frequencies for use in any number of networks. It replaces the paper SOI for use in the field.

(d) Secure voice and FM communications devices. The following are descriptions and applications of this equipment used by the company in its CNR operations:

(1) *Speech security equipment: KY-57.* The KY-57 is a half-duplex, tactical wideband COMSEC device for VHF and FM radio equipment. This device is used by the operator to transmit and receive in a secure mode.

(2) *Net control device (NCD): KYX-15/TSEC.* The NCD KYX-15 is a battery-operated control device that provides for storage and transfer of 1 to 16 frequencies. When it is connected to COMSEC equipment, the KYX-15 performs the automatic remote keying function and other cryptovariable operations. The NCD KYX-15 is required by the NCSs operated by the medical company's CP, treatment platoon, and ambulance platoon for secure CNR operation.

b. Mobile Subscriber Equipment. All medical companies are allocated one major piece of MSE: the digital nonsecure voice telephone (DVNT) TA-1035/U. Some medical companies are allocated a FAX machine (tactical lightweight digital facsimile [LDF} AN/UXC-7).

(1) *Digital nonsecure voice telephone: TA-1035/U:* The DNVT TA-1035/U is a prime subscriber terminal that provides full-duplex digital voice communications and voltage reference signal for data subscribers in the MSE system. It is also equipped with a data port that allows users of the LDF AN/UXC-7 to access the MSE network.

(2) *Tactical lightweight digital facsimile: AN/UXC-7:* The tactical LDF AN/UXC-7 is a prime subscriber terminal that provides full-duplex digital voice communications and voltage reference signal for data subscribers in the MSE system. It is also equipped with a data port that allows its users to access the MSE network. The AN/UXC-7 enables subminute transmission/reception of typed or handwritten copy, sketches, or overlays, up to 8 1/2 by 11 inches in black and white format (two shades of gray). The LDF operates directly into the TA-1035/U data port for MSE network access. It will also operate over radios and wire circuits and has full digital or analog data/voice capability. The AN/UXC-7's brief transmission (burst) reduces the chance of detection by the enemy. The critical advantages are made possible by the LDF set's ability to store data in memory and then send in short, high-speed transmission, requiring 7 to 15 seconds to transmit a full page. The AN/UXC-7 is primarily used by the company's/troop's brigade/regimental medical supply office (BMSO/RMSO) and PVNTMED section which are required to send and receive hard-copy data for supporting CHS at echelons above brigade.

c. Tactical Computer. The medical company/troop is allocated the Medical Transportable Computer Unit (MEDTCU). The MEDTCU is a computer system that runs C^2 software. This Combat Service Support Control System (CSSCS) operates on Army Tactical Command and Control System/Computer Hardware System equipment and is distributed primarily to medical units. Mainly, the MEDTCU is used by medical supply offices to run the Theater Army Medical Management Information System's (TAMMIS) medical supply (MEDSUP) and medical assemblages (MEDASM) subsystems. However, if the commander so chooses, it may be used to run other TAMMIS programs, such as the medical patient accounting and reporting (MEDPAR) system. For data transfer, the MEDTCU will primarily be supported by the MSE communications system (using the TA-1035) with augmentation or redundant backup by AM radio or satellite linkup. The MEDTCU is comprised of a transportable computer unit (TCU), color monitor device, printer unit (PU), and an archives device (AD).

(1) *Transportable computer unit.* The TCU connects with the AD, the color monitor, and the PU and provides multitasking software resources for computational and graphic capability, word processing, and database management. It operates from standard 115- or 230-volt alternating current. The unit comes with a full-size, hinged/detachable keyboard that can be detached and relocated up to 24 inches from the computer unit.

(2) *Color monitor device.* This monitor device has four to eight color planes and is driven by a video card installed in the host computer.

(3) *Printer.* This unit is a rugged printer designed to satisfy 80-column printer applications in an adverse environment where size, weight, and power consumption are prime considerations. The PU is a portable device. It employs solid state, dot matrix printing technology.

(4) *Archives device.* The AD is a rugged l/4-inch (disk drive) streaming magnetic tape cartridge system intended to provide backup or archiving. Each cartridge can accommodate 67 megabytes of data. The AD tape system is supported on the TCU.

d. Position/Navigation Device. The medical company along with other CS, CSS, and combat units have been allocated sufficient quantities of the PLGR device commensurate with their missions.

(1) The PLGR is a hand-held, battery-powered position and navigation set that receives its signal from GPS satellites, performs calculations, and displays position, velocity, time, and navigational data. The device provides a very accurate position location capability for determining and/or reporting self-location; however, it is not a communications device.

(2) The device will be exclusively employed by the company's ambulance teams, treatment teams, and wrecker operators.

Section II. COMMUNICATIONS

L-4. General

Communications systems are essential for gathering and disseminating data; personnel need them to plan and execute operations. Commanders use them to perform C^2 functions and to supervise performance. Effective management of CHS functions depends on adequate communications to keep abreast of changing situations and requirements. The medical company relies on both its organic communications assets and the support assets of its parent unit and signal elements of the division and/or corps.

L-5. Mobile Subscriber Equipment Area Common User System

Mobile subscriber equipment is the ACUS within the corps and divisions. It is the backbone of the corps communications system and is deployed from the corps rear boundary forward to the maneuver battalion's main CP. It provides a secure mobile, survivable communications system capable of passing voice, data, and FAX throughout the corps. Further, it provides a direct interface with EAC, other services, NATO, CNR, and commercial communications systems. This system is composed of multiple communications nodes with network features which will automatically bypass and reroute

communications around damaged or jammed nodes. This system integrates the functions of transmission, switching, control, and terminal equipment (voice and data) into one system and provides the user with a switched telecommunications system extended by mobile radiotelephones. Nodes are deployed in the AO based on geographical and subscriber density factors. Node centers are the building blocks of the center and extension switches allow wire line terminal subscribers (telephone, FAX, and data) to enter into the ACUS. Radio access units (RAUs) let mobile radiotelephone users communicate with other mobile and wire telephone users throughout the AO. The system control centers provide the processing capability to assist in overall network management. The MSE system lets subscribers communicate with each other using fixed directory numbers regardless of a subscribers battlefield position. (See FM 11-37 for a detailed discussion on MSE for small unit leaders.)

a. Area Coverage. The MSE system provides common user support to a geographic area, as opposed to dedicated support to a specific unit or customer. The hubs of the system are called nodes and are under the control of the corps signal officer.

b. Subscriber Terminal (Fixed). The MSE telephone, mobile radiotelephone, FAXs, and data terminals (as part of the ACUS) are user-owned and operated. The using unit is responsible for running wire to the designated distribution boxes. These boxes tie the medical company MSE telephones into the extension switches which access the system. The subscriber terminals used by the unit are digital, four-wire voice as well as having data ports (DVNT TA-1035) for interfacing the AN/UXC-7 FAX and MEDTCU.

c. Wire Subscriber Access.

(1) Wire subscriber access points provide the entry points (interface) between fixed subscriber terminal equipment and the MSE area system operated by the supporting signal unit. The two types of interface equipment are—

(a) The signal distribution panel J-1077 (each panel provides up to 13 subscriber access points).

(b) Remote multiplexer combiners (RMCs) which provide access for 8 subscriber access points.

(2) The medical company/troop is responsible for installing and operating fixed subscriber terminal instruments (DNVT TA-1035). It must also install and maintain the WF 16 field wire from the instruments to the interface point (J-1077 distribution panel).

L-6. Combat Net Radio System

Combat net radio equipment includes both the IHFR AM system and the SINCGARS FM system. These systems serve as the primary means for voice transmission of C^2 information and as a secondary means for data transmission. Data transmission is required when data transfer

requirements cannot be met by the MSE system. The IHFR series and the AM radios provide mid-to-far range communications capabilities. They interface with other AM high frequency radios which are antijamming, provide secure voice and data capability, and have push-button frequency selection. The SINCGARS series and FM radios use a 16-element keypad for push-button tuning which allows for simple and quick operation. They are capable of short-range operation for voice or digital data communications. They are also capable of single-channel operation for interface with the AN/VRC-12 series or other FM radios. The SINCGARS series of radios can operate in a jam-resistant, frequency-hopping mode which can be changed as needed (refer to procedures outlined in FM 11-32). For information on the SOI, refer to FM 24-35.

L-7. Radio Nets

The medical company/troop establishes radio nets to maintain an information link for C^2 of its elements. It is also essential that this Echelon II unit establish radio communications links with supporting corps medical elements and supported medical platoons to ensure that timely CHS is provided throughout its support area. The medical company/troop, under its parent support battalion/squadron, employs its SINCGARS radios in three separate FM nets: a command net, a treatment platoon medical operations net, and an ambulance platoon medical evacuation net. It also employs an IHFR net.

a. Command FM Net. For C^2, the commander establishes a command net (Figure L-1). The NCS, operated by the unit CP, is normally comprised of the commander's station, treatment platoon leader's station, ambulance platoon leader's station, and a wrecker operator/maintenance station. The commander's station is also deployed in the battalion/squadron command net. The CP NCS maybe employed in the brigade or regimental administrative/logistics net. The CP is authorized the NCD KYX-15/TSEC for its NCS operation. The treatment platoon's NCS may also serve as the alternate NCS for the command net.

b. Improved-High Frequency Radio Net (AM.). If the unit is a divisional medical company, it is required to net with the DMOC medical operations net to ensure the external flow of health service logistics and air/ground evacuation support. If the unit belongs to a nondivisional brigade or regiment, it will have access to the supporting medical group medical operations net. Nondivisiorial medical companies/troops may also access IHFR nets of the MEDLOG and medical evacuation battalions. The signal officer of the parent support battalion/squadron assists the medical company/troop in obtaining adequate SOIs to allow it to access these dedicated medical networks. The unit's IHFR station (Figure L-2) is operated by its CP.

c. Treatment Platoon Medical Operations FM Net. For operational control of its treatment elements, the treatment platoon establishes a medical operations net (Figure L-3). The NCS is operated by the platoon headquarters. The platoon headquarters may also serve as an alternate NCS for the command net, and the clearing station may serve as the alternate NCS for the treatment platoon. This net is also used by approaching air ambulances for patient pickup. When treatment squads/teams of the medical company/troop are deployed in DS, or are attached to supported maneuver battalions/squadrons, they will normally operate in the medical operations net of the

supported battalion/squadron aid station. They must be provided appropriate SOIs for support operations.

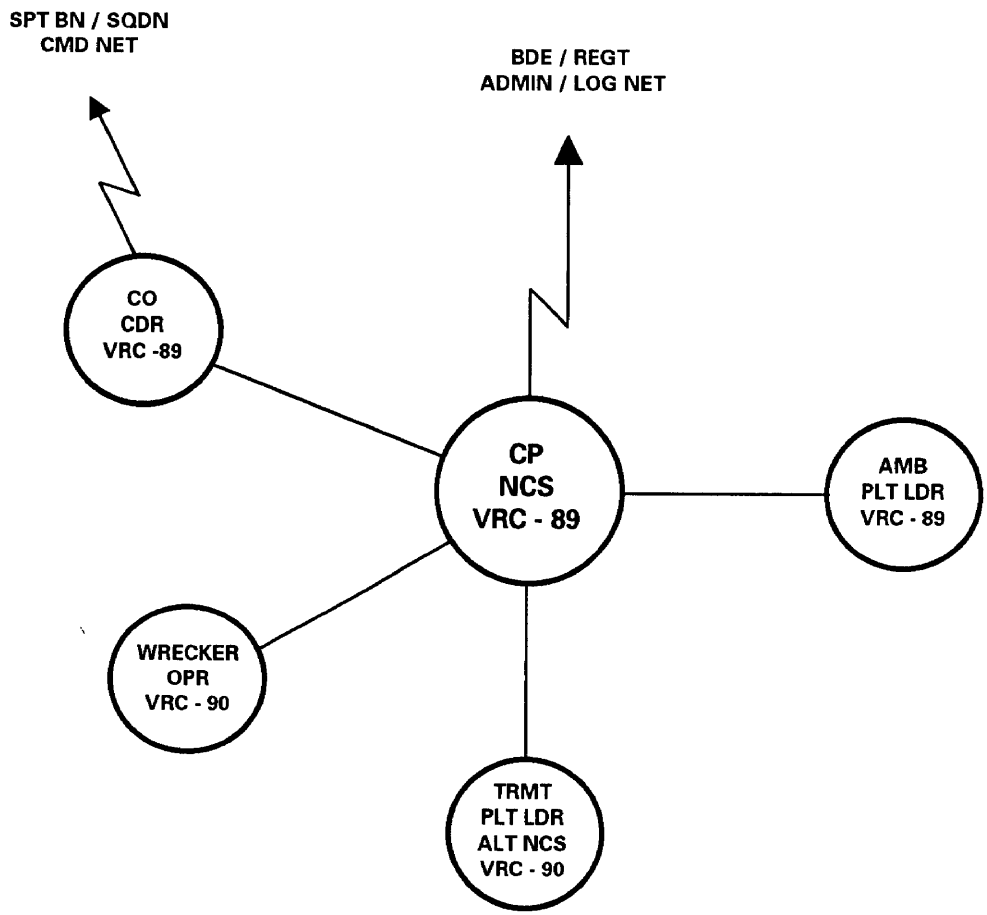

Figure L-1. Medical company/troop command FM net.

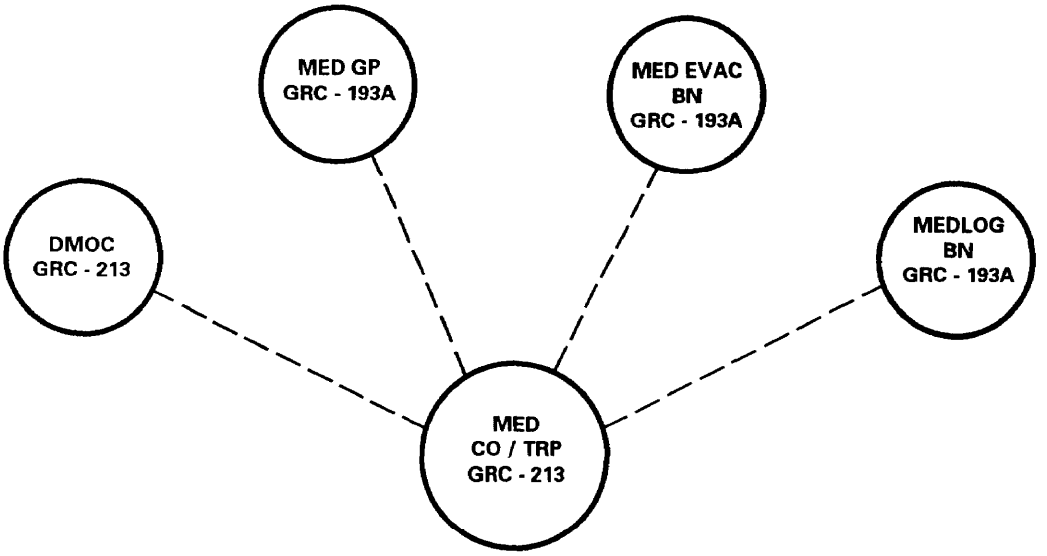

Figure L-2. Medical company/troop medical operations IHFR net access.

d. Ambulance Platoon (Dedicated) Medical Evacuation FM Net. The ambulance platoon, under the control of its parent unit, establishes an FM net (Figure L-4) primarily dedicated to air and ground medical evacuation radio traffic for the supported area. This net, operated by the platoon headquarters, provides for the control of organic ambulances and for coordination of air and ground patient evacuation in the supported area. The supported battalion/squadron aid stations and supporting corps air and ground ambulances all operate on this net for the evacuation of patients out of the supported area. Supported aid stations also use this net for the coordination of health service logistics support.

e. Supported Medical Platoon. This supported Echelon I element employs a medical operations net (Figure L-5) under the headquarters and headquarters company/troop of the parent maneuver battalion/squadron. The platoon headquarters serves as the NCS. Its station is also deployed in the administrative/logistics net. Other stations of this medical operations net include treatment team A (battalion/squadron surgeon's station), treatment team B (PA station), ambulance team stations, and the attached treatment squad/team from the supporting medical company/troop. The medical platoon is provided appropriate SOIs sufficient to communicate with both supported and supporting units.

NOTE

Each ambulance team is a separate station and will require separate call signs.

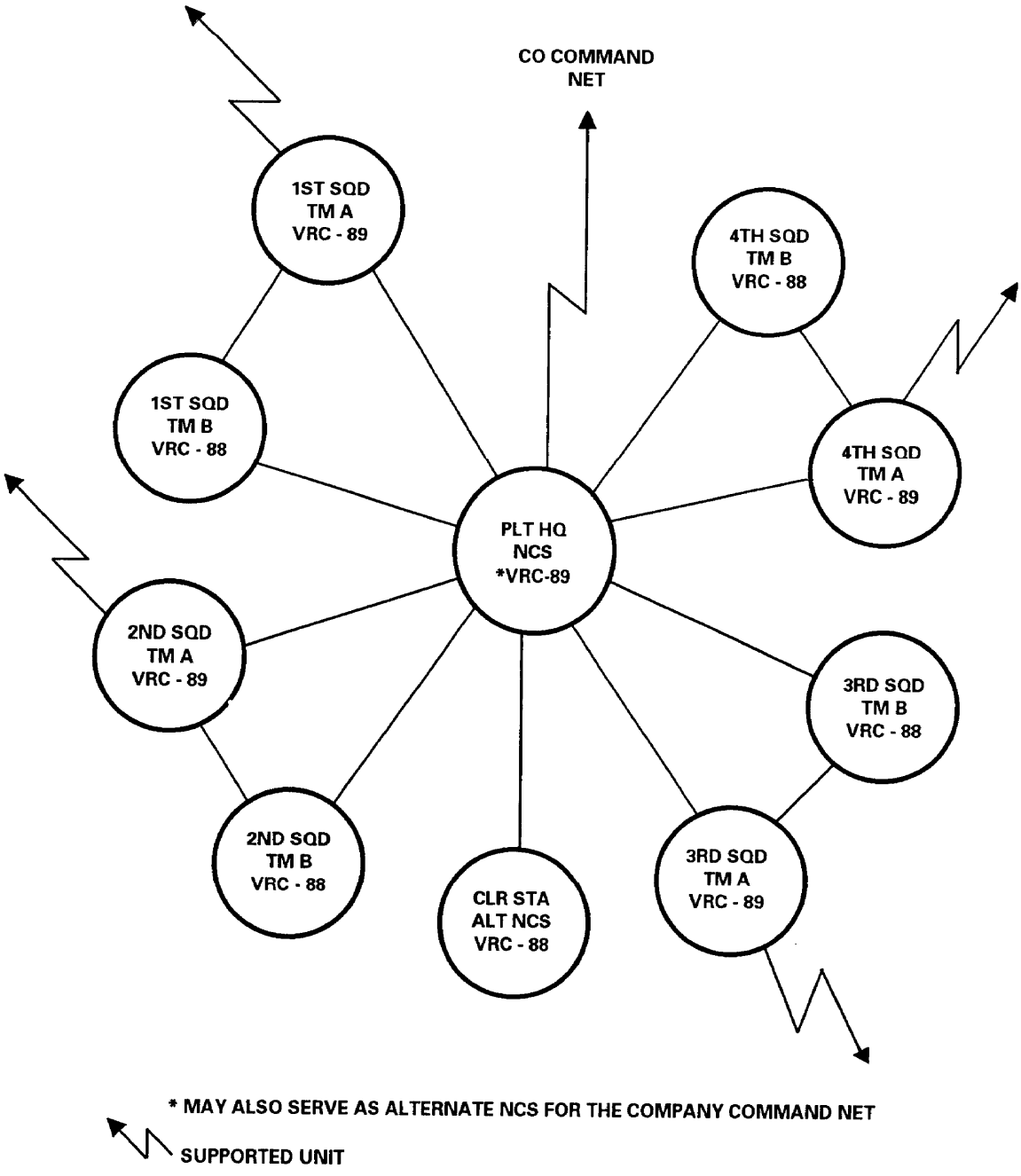

Figure L-3. Treatment platoon medical operations FM net.

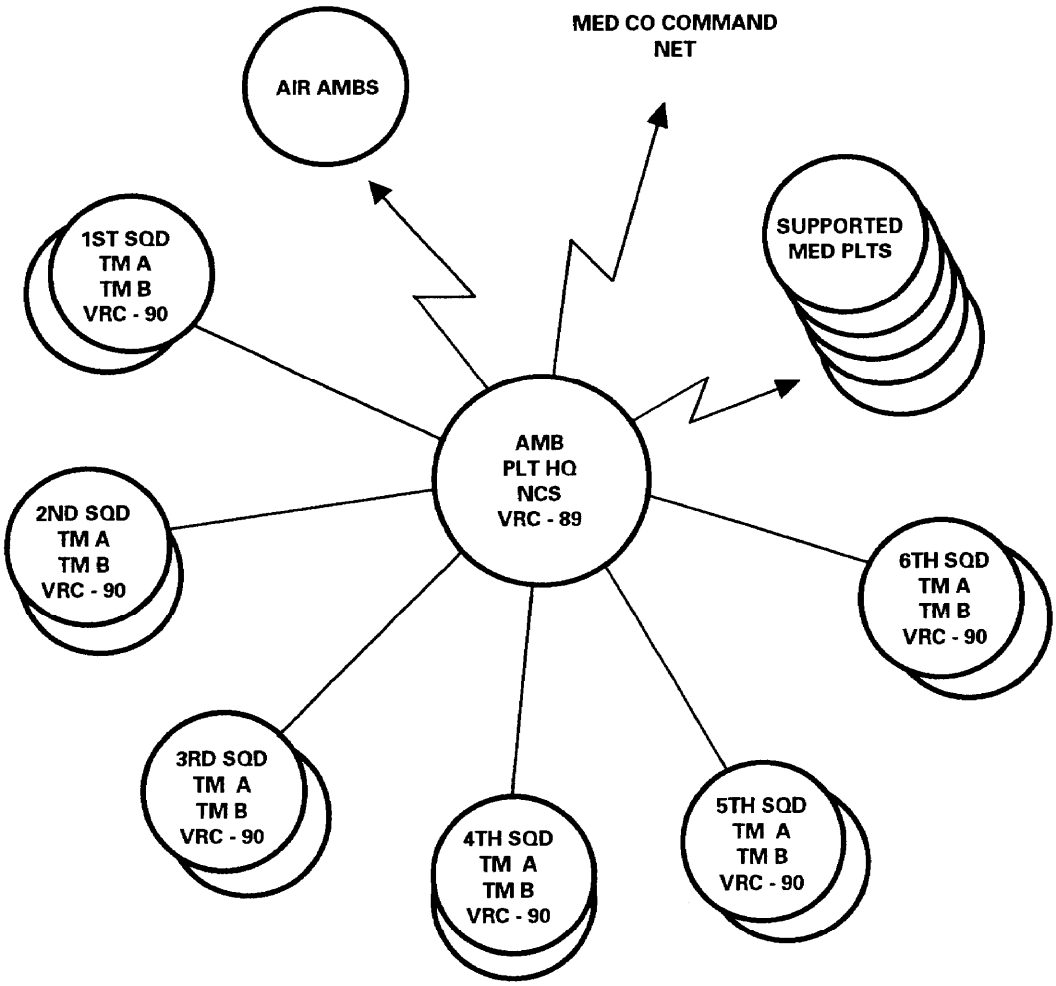

Figure L-4. Dedicated medical evacuation FM net.

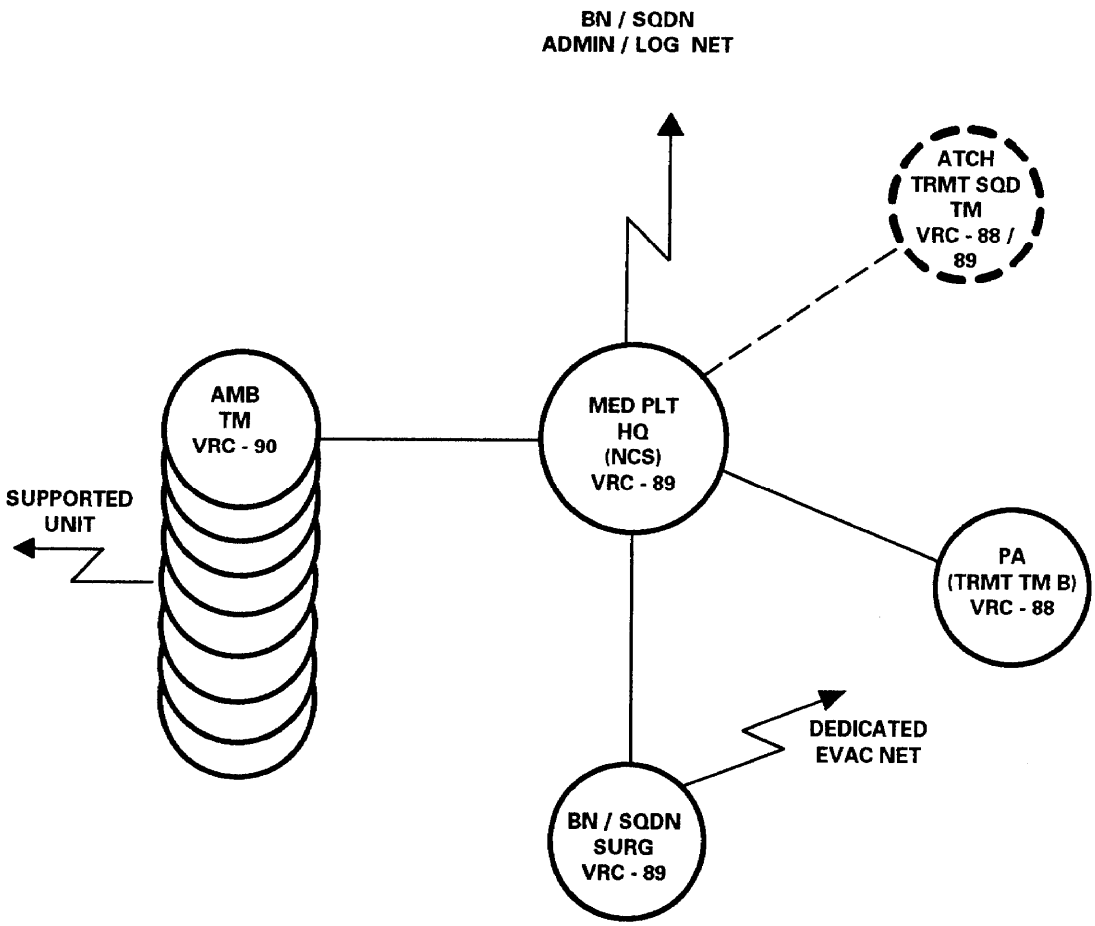

Figure L-5. Sample battalion/squadron aid station medical operations FM net.

L-8. Internal Wire Communications Net

While the medical company/troop employs DVNT MSE, it will still retain its conventional wire communications equipment (SB-22 switchboard and TA-312 telephones) for internal communications. Also, this equipment will be used for external communications until such time as the MSE system is made available to the unit, or as directed by its parent headquarters. Figure L-6 depicts a typical wire net for an MSMC and a medical company of a heavy separate brigade.

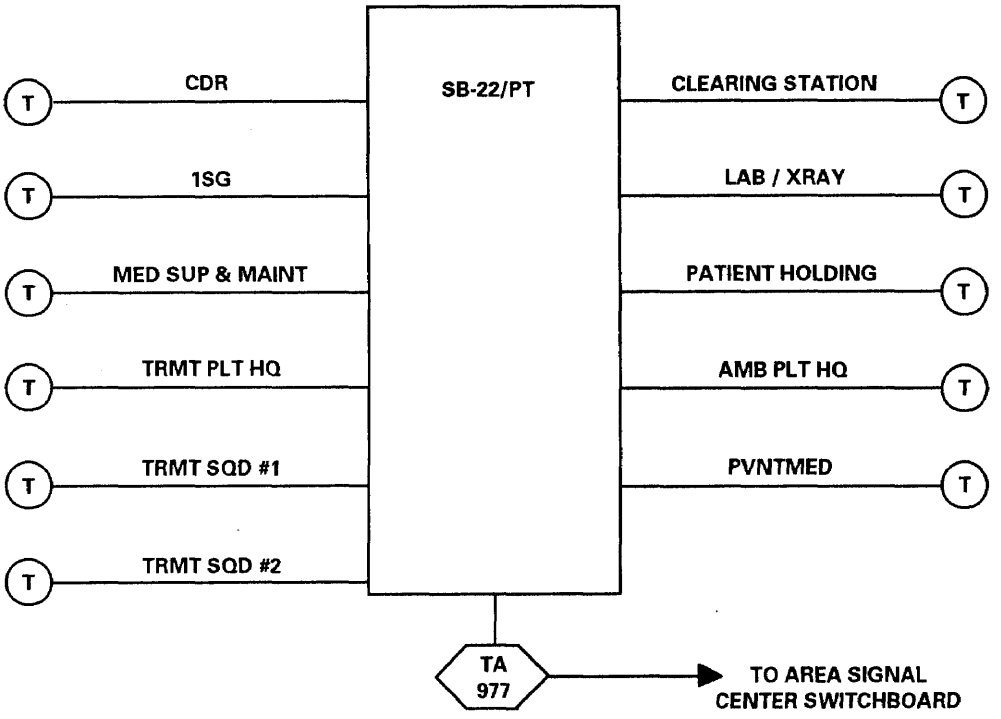

Figure L-6. Sample medical company/troop internal wire net.