

CENTRALIZED MESSAGE DETAIL RECORDER
IDENTIFICATION AND PREINSTALLATION INFORMATION
93B CUSTOMER PREMISES SYSTEM

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NOTICE

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1. GENERAL

1.01 This section provides identification and preinstallation information for the 93B Customer Premises System (CPS) known as the Centralized Message Detail Recorder (CMDR). The CMDR collects Message Detail Records (MDRs) from remote/local 94A CPS Local Storage Units (LSUs) connected to either a DIMENSION* PBX and/or a No. 1/1A Electronic Switching System (ESS) for multilocation Electronic Tandem Network (ETN) or non-ETN customers.

1.02 This section is reissued for the following reasons:

- To add the Centralized Message Detail Recorder-Direct Output (CMDR-DO) version
- To rename the tape output version as the Centralized Message Detail Recorder-Tape Output (CMDR-TO) version (formerly denoted as CMDR)
- To delete references to the manufacture discontinued 801A6 Automatic Calling Unit (ACU)
- To replace references to manufacture discontinued J59219AD L1 with J59219AD L6
- To replace references to J598882PA with J59219JA.

Revision arrows are used to emphasize the more significant changes.

1.03 Prior to beginning a CMDR installation, all LSUs, ♦208A-L1B data sets, 201C-L1D data sets, ♦ 212A(R) data sets, and 801C(R)-L1 ACUs should be installed and tested. In addition, a terminal should be available for the craft/Telephone Company (TELCO) personnel to use at installation and for maintenance. The craft/TELCO port is primarily used for a data set connection for the Remote Maintenance, Administration, and Traffic System (RMATS) Center. These requirements should be met so that the CMDR installer may integrate the LSU(s) into the network as part of the CMDR installation. To save time, all necessary items for a successful installation should be available at the installation site prior to

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installation. The following checklist contains items to consider when planning the CMDR installation:

- Power source (customer provided)
- Cabling distances
- Provision for recordkeeping
- Wall space requirements
- Environmental requirements
- Location of customer terminal
- Local or remote TELCO maintenance terminal
- Number of Direct Distance Dialing (DDD) Network or ETN ports.

1.04 A sample recorded magnetic tape should be ordered in advance to assist the customer in generating processing software programs. The sample tapes contain all record types which can be written.

2. FLOOR PLAN

2.01 A typical floor plan for the CMDR is shown in Fig. 1.

2.02 Maintenance access space is required in the front, on the sides, and at the rear of the equipment cabinet.

2.03 Some floor surfaces, such as soft tile, may incur indentations from the cabinet casters, after an extended period of time. Floor carpeting may make it difficult to move the cabinet on its casters. To remedy these situations, a floorplate assembly (840609234) and a rollaway assembly (840609291) are available (see ED-1E314-70). These assemblies can be used to redistribute the cabinet weight to meet floor-loading limitations, to prevent indentations in floor surfaces, and to ease movement on floor surfaces or coverings.

2.04 If the CMDR is installed in an area where vibrations or an earthquake could cause the cabinet to move, a floor space/earthquake mounting should be provided. The cabinet should be installed at least 91.4 cm (36 in.) away from immovable objects to allow maintenance access.

2.05 Prepare a sketch of the proposed installation, similar to Fig. 1, showing the desired placement of the cabinet and the location of customer-provided power outlets. The dedicated power outlet (nonswitchable) for the cabinet should be located within 1.2m (4 ft) of the point where the power cord from the cabinet is fastened to the wall by a cable clamp.

3. EQUIPMENT IDENTIFICATION

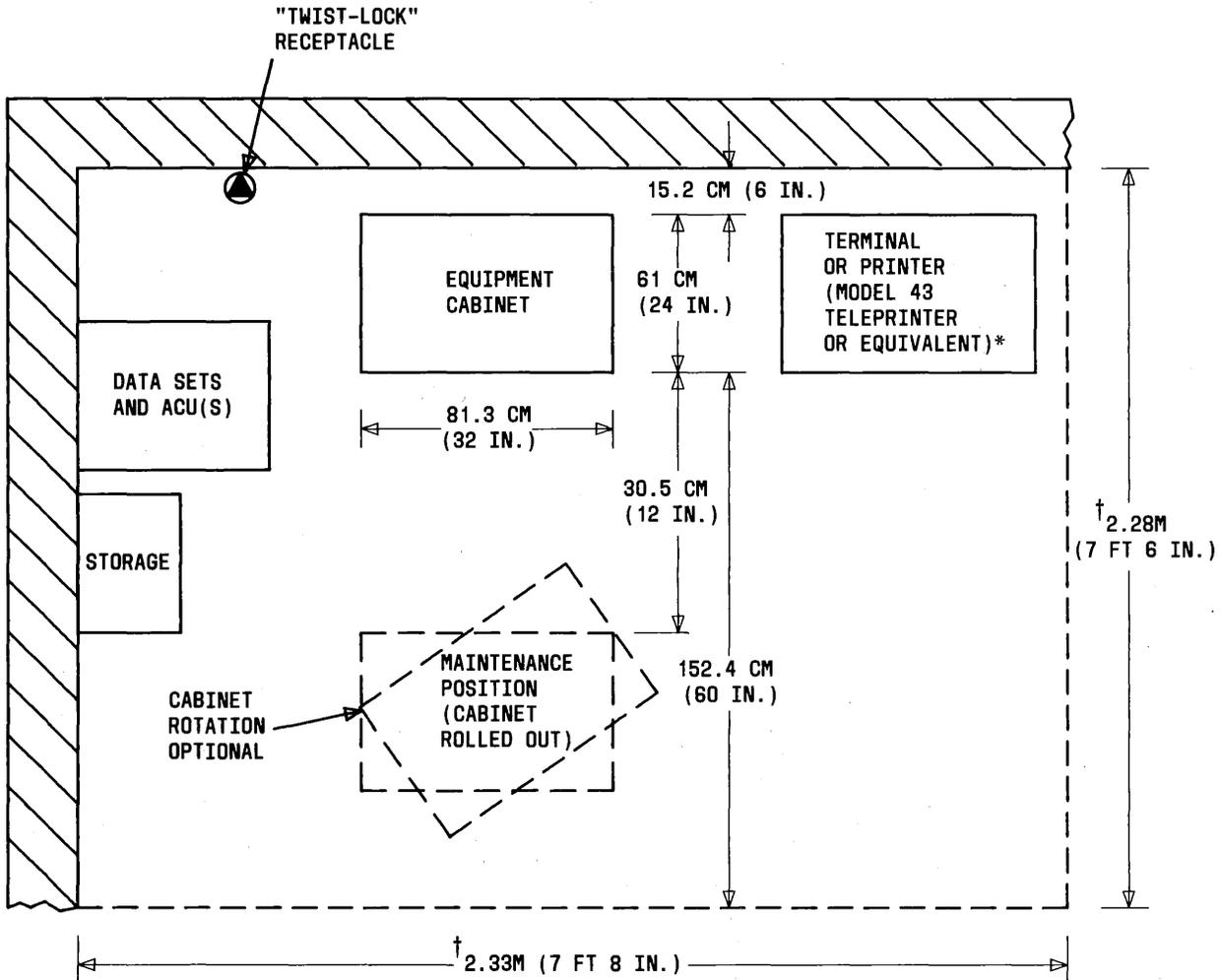
3.01 The CMDR, located on customer premises, polls and collects station MDRs from LSUs which are connected to either a remote/local DIMENSION PBX or a No. 1/1A ESS. The CMDR consists of the equipment described below.

A. J59219B Equipment Cabinet

3.02 The J59219B equipment cabinet (used with the CMDR-TO version) contains the J-coded equipment listed in Table A. The cabinet is 177.8 cm high by 81.3 cm wide by 61 cm deep (70 in. by 32 in. by 24 in.) and weighs approximately 204.1 kg (450 lb). The cabinet is caster mounted for easy mobility, and all equipment is of modular plug-in design.

B. J59219C Equipment Cabinet

3.03 The J59219C equipment cabinet (used with the CMDR-DO version) contains the J-coded equipment listed in Table B. The cabinet is 76.2 cm high by 81.3 cm wide by 61 cm deep (30 in. by 32 in. by 24 in.) and weighs approximately 68 kg (150 lb).



* MAXIMUM CABLE DISTANCE FROM THE EQUIPMENT CABINET IS 15.2M (50 FT).

† APPROXIMATE DIMENSIONS.

Fig. 1—♦Typical CDR Floor Plan♦

The cabinet is caster mounted for easy mobility, and all equipment is of modular plug-in design.

C. 208A-L1B Data Set

3.04 If the CMDR-DO is located more than 15.2m (50 ft) from the customer computer and 4800 baud operation is desired, 208A-L1B data sets must be provided at the CMDR and the customer computer. The 208A-L1B data set requires a 4-wire private line between the CMDR-DO and the customer computer. Both data sets should be installed prior to the installation of the J59219C equipment cabinet.

3.05 The 208A-L1B data set operates at 4800 b/s (baud) in full duplex, synchronous mode. The CMDR-DO data set should be installed with options YM, YQ, YS, ZS, YC, YU, YJ, YX, XB, and YA. The customer computer data set should be installed with options YM, YQ, YS, ZS, YU, YJ, YX, XB, and YA. If the customer computer supplies the transmitter clock, option YD should be installed; if the data set supplies the transmitter clock, option YC should be installed.

D. 201C-L1D Data Set

3.06 If the CMDR-DO is located more than 15.2m (50 ft) from the customer computer and 2400 baud operation is desired, a 201C-L1D data set must be provided at the CMDR and the customer computer. The 201C-L1D data set requires a 4-wire private line between the CMDR-DO and the customer computer. Both data sets should be installed prior to the installation of the J59219C equipment cabinet.

3.07 The 201C-L1D data set operates at 2400 b/s (baud) in full duplex, synchronous mode. The 201C-L1D data set should be installed with options YA, YD, YJ, YK, YN, YP, YT, and XC. If the customer computer receives the transmitter clock from the modem, substitute option YC for YD at the customer computer data set.♦

E. 212A(R) Data Set

3.08 The CMDR connects to one, two, or three 212A(R) data sets for communicating with the LSUs via the DDD Network or the ETN. All required data sets should be installed prior to the installation of the equipment cabinet.

3.09 The 212A(R) data set used on a polling port operates at 1200 b/s (baud) rate in a full du-

plex mode. This data set should be installed with options E, ZF, XJ, YE, YC, YG, YJ, YK, XL, S, V, A, T, ZH, W, YP, ♦YQ,♦ XN, and Q.

3.10 A fourth data set may be used for remote access to the craft/TELCO maintenance port. This data set should be installed with options E, ZF, XK, YF, YC, YG, YJ, YK, XM, S, V, A, T, ZH, W, YP, YR, XN, and Q.

3.11 ♦If the CMDR-DO is located more than 15.2m (50 ft) from the customer computer and 1200 baud operation is desired, a 212A(R) data set must be provided at the CMDR and the customer computer. The data sets require 2-wire switched lines. The 212A(R) data sets should be installed with options E, ZF, XK, YF, YD, YH, YJ, YK, XM, S, V, A, T, ZH, W, YD, YR, XO, and Q. If the customer computer receives the transmitter clock through the data set, substitute option YC for YD at the customer computer data set.♦

F. 801C(R)-L1 Automatic Calling Unit (ACU)

3.12 The CMDR connects to one, two, or three ACUs providing automatic dial-up capabilities. The 801C(R)-L1 is used with the polling port 212A(R) data sets. The ACU enables the CMDR to automatically originate calls using DATAPHONE* data communications service on facilities equipped for TOUCH-TONE* dialing. The 801C(R)-L1 ACU should be installed with options Y, X, T, ZG, ZP, G, R, ZQ, and ZU.

G. Polling Ports

3.13 Each polling port requires a 212A(R) data set and an ACU. All CMDR units come equipped with three ports, but not all ports need to be equipped with a data set and an ACU. The number of polling ports required is based on the network traffic.

3.14 Each port can collect up to approximately 8000 call records per hour. The polling schedule should not be engineered so tightly that peaks in traffic cause loss of records. A failure in the line, in the 212A(R) data set, in the ACU, or in the cabling could cause loss of data quickly. An additional port may be equipped with a data set and an ACU for reliability. Thus, for less than 8000 call records per hour, 2 polling ports may be equipped. For less than 16,000

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call records per hour, 3 polling ports would be required. If three polling ports are required to handle the traffic, no additional reliability is possible.

H. RS-232-C Electronic Industries Association (EIA) Ports

3.15 Three RS-232-C EIA ports J6, J7, and J8 are provided to connect, via 212A(R) data sets, to the network. Two additional EIA ports are available for connecting a craft/TELCO maintenance terminal (J5 for CMDR-TO or J12 for CMDR-DO) and a customer terminal. The TELCO may also elect to connect a 212A(R) data set to port J5 for CMDR-TO or port J12 for CMDR-DO for RMATS access in lieu of the maintenance terminal.

3.16 The EIA ports are 25-pin connectors located on the left and right ends of the carrier assembly.

3.17 With the direct output version of CMDR, two additional RS-232-C EIA ports, J13 and J17, are provided. One of the two ports is used to connect the CMDR to the customer computer. The J13 port is used when the distance between the CMDR and the computer is greater than 15.2m (50 ft). The J17 port is used when the distance is 15.2m (50 ft) or less.

I. Model 43 Teleprinter

3.18 A Model 43 teleprinter or equivalent terminal should be provided for the customer. This terminal is used by the customer to set the calendar/clock, to generate the LSU polling schedule, and to access data collection status reports. The Model 43 teleprinter comes equipped with the standard options which are set at the factory and must be equipped for EIA compatibility.

TABLE A

CMDR-TO J-CODED EQUIPMENT

UNIT		QUANTITY PROVIDED		REMARKS
J-CODE (DESCRIPTION)	LIST NO.	REQUIRED	OPTIONAL	
J59219B Central- ized Message Detail Recorder (CMDR) Cabinet Assembly	L1	1	—	Provides frame work assembly, wiring, and equipment for one MDR cabinet wired for driving one tape transport unit
	L2	1	—	Provides equipment and wiring for one formatter
	L3	1	—	Provides equipment and wiring for one tape transport
	L4	—	1	Provides equipment and wiring for one additional tape transport
J59219AD Carrier Assembly	L6	1	—	Provides equipment and wiring for one or two tape transport controller carriers
	L4	1	—	Provides additional items for CMDR-TO applications
J59219AE Control Panel Assembly	L1	1	—	Provides assembly, wiring, and equipment for one control panel assembly
	L2	—	1	Provides equipment and wiring for one tape transport equipped with keylock enable switch for CMDR application
	L3	—	1	Provides equipment and wiring for two tape transports equipped with keylock enable switch for CMDR application
J59219AF	L1	—	1	Provides sample magnetic tape in ASCII
	L2	—	1	Provides sample magnetic tape in BS-BCD
	L3	—	1	Provides sample magnetic tape in EBCDIC
J59219JA	L1	1	—	Provides basic hardware, back panel and associated hardware, and filters for ac power distribution unit
	L3	1	—	Provides fans and fan control

♦TABLE B♦

CMDR-DO J-CODED EQUIPMENT

UNIT		QUANTITY PROVIDED		REMARKS
J-CODE (DESCRIPTION)	LIST NO.	REQUIRED	OPTIONAL	
J59219C Central- ized Message Detail Recorder (CMDR) Cabinet Assembly	L1	1	—	Provides framework assembly and wiring for direct output cabinet
J59219AD Carrier Assembly	L6	1	—	Provides carrier, wiring, power unit, and batteries
	L5	1	—	Provides additional items for CMDR-DO applications
J59219AE Control Panel Assembly	L4	1	—	Provides assembly, wiring, and equipment for one control panel assembly
J59219AG Sample Tapes	L1	—	1	Provides sample magnetic tape recorded in ASCII
	L2	—	1	Provides sample magnetic tape recorded in BS-BCD
	L3	—	1	Provides sample magnetic tape recorded in EBCDIC

4. ENVIRONMENTAL REQUIREMENTS

A. Atmosphere and Temperature

4.01 Extreme conditions of temperature and humidity may have damaging effects on the CMDR equipment. For the CMDR-DO, it is recommended that an ambient temperature ranging between 18° to 35°C (65° to 95°F) with relative humidity ranging from 20 to 60 percent be maintained for equipment locations. However, the CMDR can function in ambient temperatures of 0° to 48°C (32° to 120°F) at 10 to 95 percent relative humidity. These upper limits should not be regarded as desirable working conditions for minimum maintenance.

4.02 Because of greater sensitivity of the tape unit with CMDR-TO, it is recommended that an ambient temperature ranging between 18° and 24°C (65° to 75°F) with relative humidity ranging from 40 to 60 percent be maintained for equipment locations.

4.03 Environments which should be avoided because of potential temperature problems include the following:

- Rooms that have a major heat source (eg, boiler room, furnace room, manufacturing areas using hot processes, etc)
- Rooms not air-conditioned with two or more exterior wall surfaces (The ceiling must be considered a wall surface for this purpose.)
- Rooms not air-conditioned with less than 4.64m² (50 ft²) of floor space.

4.04 Gold fingers and connector interfaces could chemically deteriorate through the corrosive effects of gases on particle surfaces. Environments containing high concentrations of corrosive gases such as sulfur or chlorine should not be used as installation sites.

B. Insects and Rodents

4.05 The equipment cabinet is designed to prevent insect and rodent entry into internal areas. For this reason, the front, back, and side panels should be used at all times (particularly when such pests are known to exist in a location).

C. Transportation

In Transit

4.06 The CMDR should remain packaged in the original shipping cartons until delivered to the installation site. Without exception, the equipment should always be transported in an upright (normal use) position. The packing material used for shipping the equipment cabinet is adequate for upright shipment.

4.07 The equipment cabinet will be fully loaded and ready for operation, with the exception of cabling, when shipped. This does not include the rollaway and floorplate assemblies which will be shipped in a separate crate.

4.08 The preferred methods of transportation are truck, rail, and air (in order of preference). Air transportation is known to subject equipment to severe handling shocks. Rail transportation is less severe, but railroad car coupling shocks can severely stress the equipment cabinet.

Handling on Site

4.09 It is recommended that, when possible, the equipment cabinet remain packaged in its crate until it is at the installation site.

4.10 Care should be taken to avoid dropping the equipment cabinet (crated or uncrated) from any height. Under no circumstances should it be allowed to drop from a height greater than 20.3 cm (8 in.) packaged or 2.5 cm (1 in.) unpackaged.

5. POWER AND GROUNDING REQUIREMENTS

5.01 For a CMDR-TO installation, arrangements should be made with the customer to provide a 112V 20A TWIST-LOCK* receptacle, Catalog No. 2310 or equivalent. Installation of the power receptacle should precede the arrival of the CMDR equipment at the installation site.

5.02 For a CMDR-DO installation, arrangements should be made with the customer to provide a 112V 15A TWIST-LOCK receptacle, Catalog No. 4710 or equivalent. Installation of the power receptacle should precede the arrival of the CMDR equipment at the installation site.

*Registered trademark of Hubbell, Harvey, Inc.

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5.03 The ac power receptacle must be a dedicated unswitched outlet to prevent disruption of service. The complete cost of providing the electrical power for the CMDR is borne by the customer.

5.04 Additional ac power receptacles are required for the data sets, the ACUs, and the craft/customer terminal.

A. Power

5.05 A 120V 60-Hz commercial power source is required for the equipment cabinet. The commercial power should meet the following requirements:

- 120V with a voltage range of +10V -15V
- 60 ±3 Hz frequency
- 20A circuit protection (CMDR-TO)
- 15A circuit protection (CMDR-DO).

5.06 The CMDR uses a 302A-type power supply to furnish the following voltages:

- -12V at .25A (not supplied if ac power fails)
- +12V at 1A
- +5V at 5A (not supplied if ac power fails)

- +5V at 2A
- +8V at 1A
- +22.15V at .6A (battery charge voltage).

5.07 Power reserve for volatile memory is provided by battery backup. Battery backup provides a minimum of 24-hour power reserve. The batteries are maintenance free, sealed, lead-acid type, and are packaged in a plastic case. Batteries should be replaced every 5 years. Replacement batteries can be obtained by ordering Part Number 0-800-0011 from Gates Energy Products, Denver, Colorado.

5.08 Additional CMDR-TO equipment power requirements are listed in Table C. Additional CMDR-DO equipment power requirements are listed in Table D. Included in Tables C and D are the National Electrical Manufacturing Association (NEMA) numbers for the required power receptacles.

B. Grounding

5.09 The CMDR is grounded through the ac power cord (green wire). A separate ground connection is not required.

TABLE C

CMDR-TO POWER REQUIREMENTS AND CONNECTORS

DEVICE	POWER-WATTS (115 Vac 60 Hz)	REQUIRED RECEPTACLE (OR EQUIVALENT) (NEMA NO.)	CIRCUIT (AMPERES)
J59219B Equipment Cabinet:	1000	L5-20R Hubbell #2310	20
302A-Type Power Supply	150	Supplied within cabinet	15
Kennedy 192-9801-503 Model Tape Transport	300	Supplied within cabinet	15
Kennedy 192-9217-408 Model Tape Formatter	75	Supplied within cabinet	15
212A(R) Data Set	10	5-15R	15
801C(R)-L1 ACU	10	5-15R	15

◆TABLE D◆

CMDR-DO POWER REQUIREMENTS AND CONNECTORS

DEVICE	POWER-WATTS (115 Vac 60 Hz)	REQUIRED RECEPTACLE (OR EQUIVALENT) (NEMA NO.)	CIRCUIT (AMPERES)
J59219C Equipment Cabinet: 302A-Type Power Supply	150	5-15R Hubbell #4710	15
208A-L1B Data Set	26	5-15R	15
212A(R) Data Set	10	5-15R	15
801C(R)-L1 ACU	10	5-15R	15
201C-L1D Data Set	26	5-15R	15

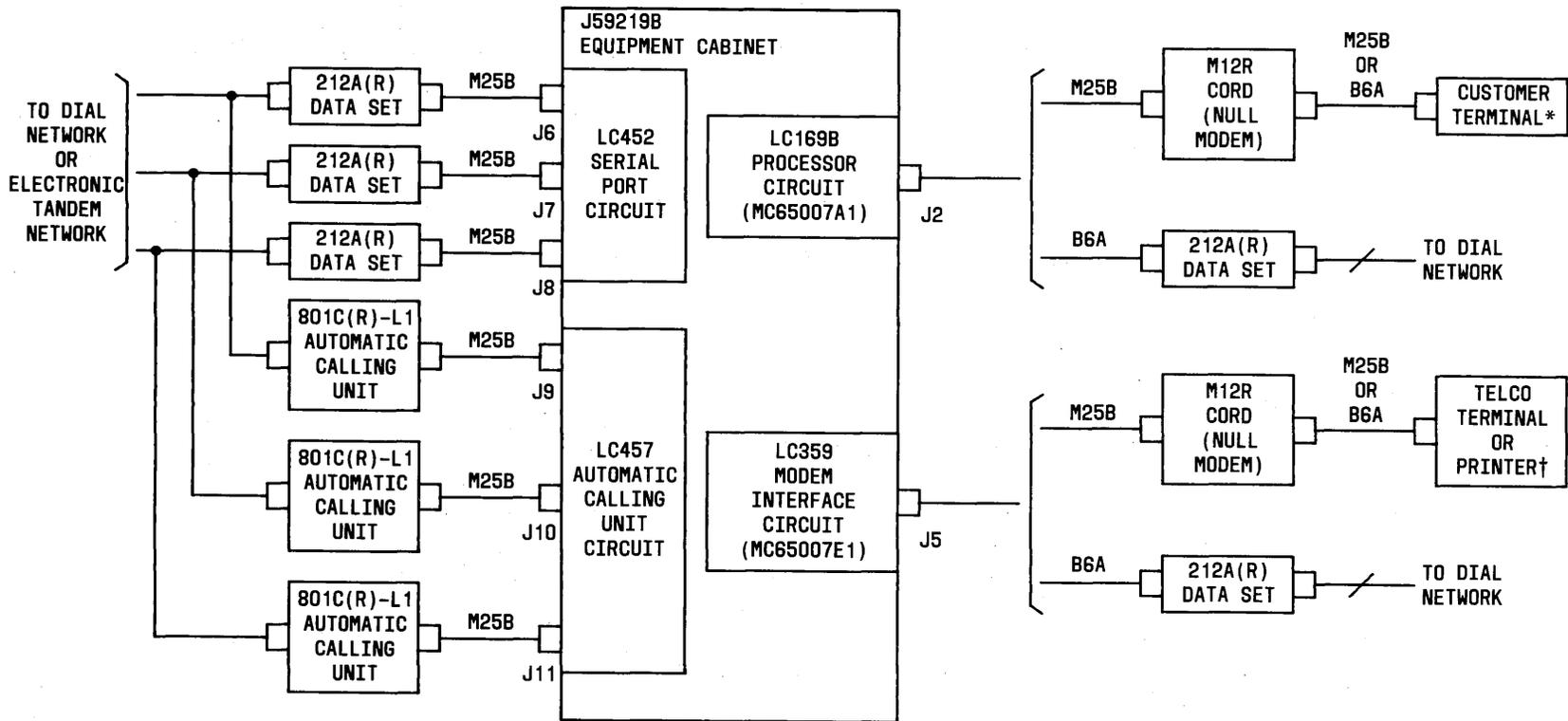
6. CABLING

6.01 ◆A typical CMDR-TO cabling diagram is shown in Fig. 2; a typical CMDR-DO cabling diagram is shown in Fig. 3; and a typical CMDR/computer data link cabling diagram for data links exceeding 15.2m (50 ft) is shown in Fig. 4.

6.02 In the data link to the customer computer, the maximum cabling distance from the 208A-L1B data set, the 201C-L1D data set, or the 212A(R) data set to the J59219C equipment cabinet or to the customer computer is 15.2m (50 ft). Any data set cabling distance greater than 15.2m (50 ft) may degrade MDR service. When planning cable distances for the data set, approximately .9m (3 ft) of cable length should be allowed to provide cable runs inside the equipment cabinet.◆

6.03 The maximum cabling distance from the polling port 212A(R) data set to the equipment cabinet for the CMDR-TO or CMDR-DO is 15.2m (50 ft). Any data set cabling distance greater than 15.2m (50 ft) may degrade MDR service. When planning cable distances for the data set, approximately .9m (3 ft) of cable length should be allowed to provide cable runs inside the equipment cabinet.

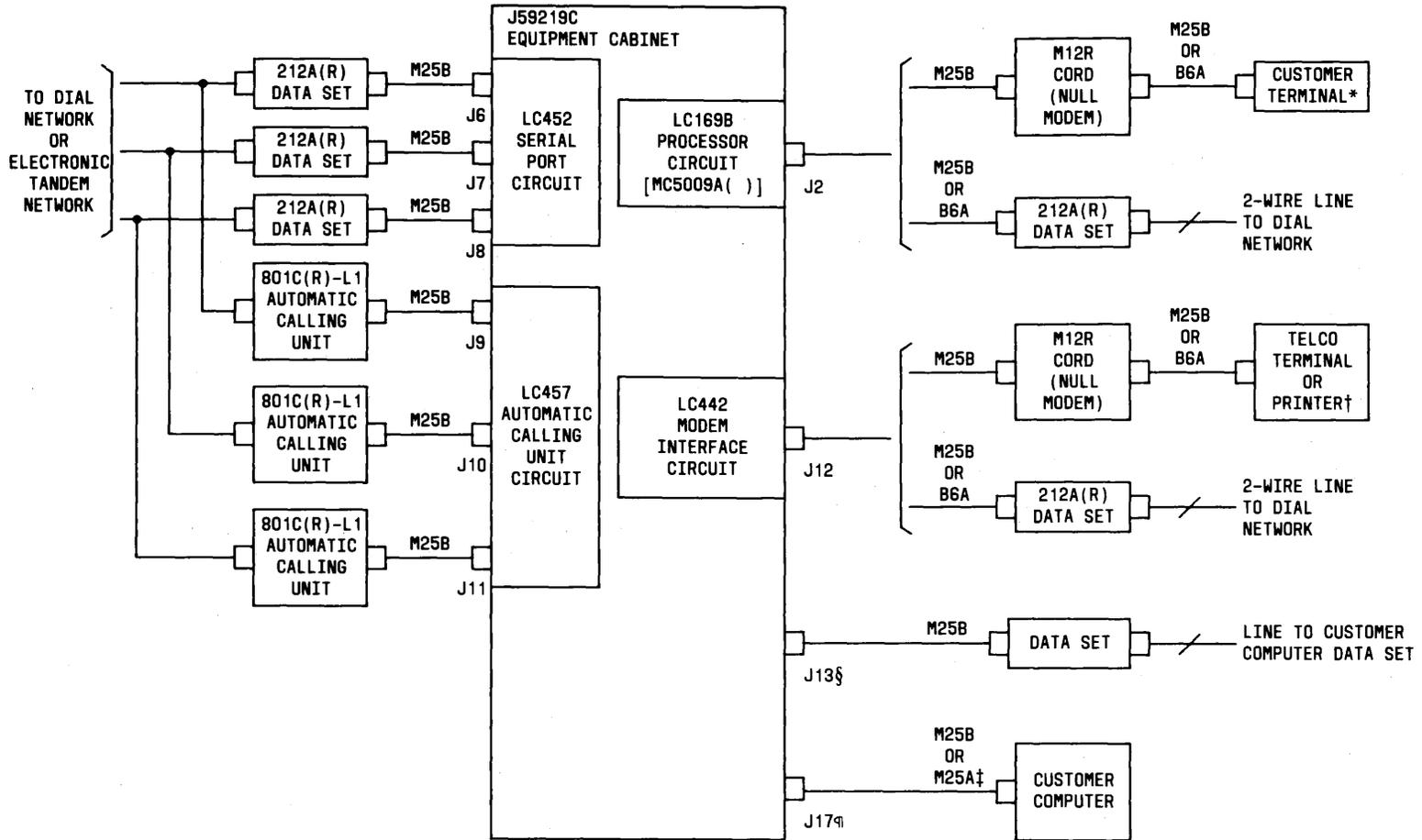
6.04 The maximum cabling distance from the TELCO/customer terminal to the equipment cabinet is 15.2m (50 ft). When planning cable distances for the terminal, approximately .9m (3 ft) of cable length should be allowed to provide cable runs inside the equipment cabinet.



* MODEL 43 TELEPRINTER OR EQUIVALENT.

† INSTALLATION/MAINTENANCE TERMINAL, MODEL 43 TELEPRINTER OR EQUIVALENT.

Fig. 2—Typical CMDR-TO Cabling Diagram



* MODEL 43 TELEPRINTER OR EQUIVALENT.

† INSTALLATION/MAINTENANCE TERMINAL, MODEL 43 TELEPRINTER OR EQUIVALENT.

‡ THE CUSTOMER COMPUTER MAY REQUIRE A JACK (DB-25B CONNECTOR) THAT IS PROVIDED BY AN M25A CONNECTING CORD OR A PLUG (DB-25P CONNECTOR) THAT IS PROVIDED BY AN M25B CONNECTING CORD.

§ REQUIRED ONLY WHEN CUSTOMER COMPUTER IS LOCATED MORE THAN 15.2M (50 FT) FROM CMDR-DO.

¶ REQUIRED ONLY WHEN CUSTOMER COMPUTER IS LOCATED 15.2M (50 FT) OR LESS FROM CMDR-DO.

Fig. 3—Typical CMDR-DO Cabling Diagram

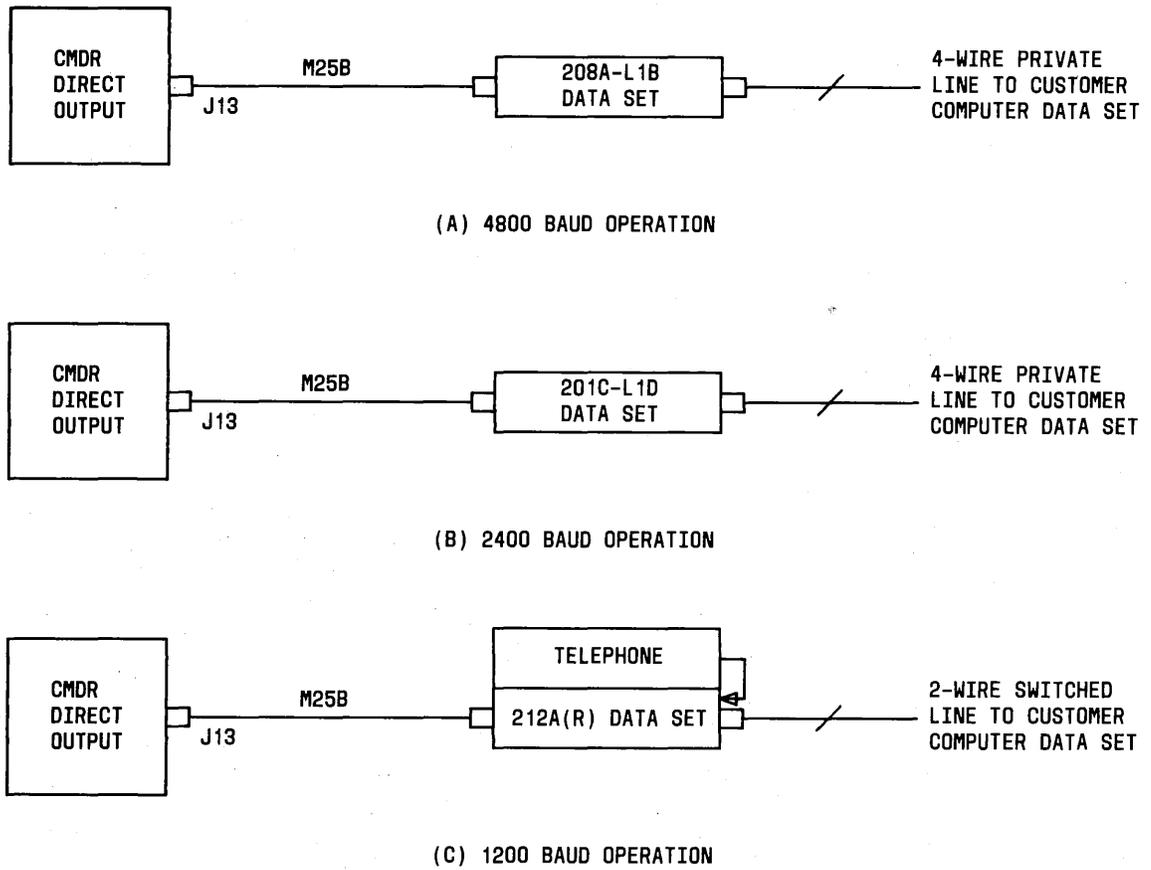


Fig. 4—Typical Cabling Diagram for CDMR/Computer Data Link Exceeding 15.2M (50 Ft) in Length

7. OPTIONS

A. CMDR-TO

7.01 The CMDR-TO may be optioned with a second magnetic tape transport for customers requiring additional storage capacity or for added reliability.

7.02 The CMDR-TO may be optioned to provide MDRs in either modified Binary Coded Decimal (BCD), American Standard Code for Information Interchange (ASCII), or Extended Binary Coded Decimal Interchange Code (EBCDIC). These BCD/ASCII/EBCDIC options apply only to records stored in the write and read buffers and written on magnetic tape. No matter which option is selected, the modified BCD is always used for messages transmitted between the LSU and the CMDR.

7.03 The option switch settings for switch 1 of LC169B appear in Table E.

7.04 The CMDR-TO provides two RS-232-C EIA ports to connect a terminal, printer, or data set. One EIA port is provided to connect the optional craft/TELCO maintenance data set. The option switch for this port is located on the LC359 circuit pack. The option switch settings for the LC359 appear in Table F.

7.05 The second CMDR-TO EIA port is provided to optionally connect a customer terminal or data set. The customer terminal may be a Model 43 teleprinter or an equivalent terminal. The option switches for this terminal are located on the LC169B

circuit pack. The option switch settings for switch 2 of the LC169B appear in Table G.

B. CMDR-DO

7.06 The CMDR-DO may be optioned to provide MDRs in either modified BCD, ASCII, or EBCDIC. These BCD/ASCII/EBCDIC options apply only to records transmitted to the customer computer. No matter which option is selected, the modified BCD is always used for messages transmitted between the LSU and the CMDR.

7.07 The option switch settings for switch 1 of the LC169B appear in Table H.

7.08 The CMDR-DO provides three RS-232-C EIA ports. One EIA port is provided to connect the optional craft/TELCO maintenance data set. The option switch for this port is located on the LC442 circuit pack. The option switch settings for the LC442 appear in Table I.

7.09 The second CMDR-DO EIA port is provided to optionally connect a customer terminal or data set. The customer terminal may be a Model 43 teleprinter or an equivalent terminal. The option switches for this terminal are located on the LC169B circuit pack. The option switch settings for switch 2 of the LC169B appear in Table J.

7.10 The CMDR-DO also provides an RS-232-C EIA port to connect the customer computer data link. The option switch settings for the LC443 appear in Tables K and L.♦

TABLE E

CMDR-TO LC169B (MC65007A1 †)
S1 SWITCH SETTINGS

OPTIONS	SWITCH SETTING (NOTE)			
	1	2	3	4
Not Defined	†	—	—	—
Dual Tape Transport	—	OPEN	—	—
Single Tape Transport	—	CLOSED	—	—
BS-BCD Output	—	—	OPEN	†
ASCII Output	—	—	CLOSED	OPEN
EBCDIC Output	—	—	CLOSED	CLOSED

Note: To close switch, depress numbered side of switch.

* "†" denotes issue number.

† Does not matter which setting is selected.

♦TABLE F♦

CMDR-TO LC359 (MC65007E1 i*)
S1 SWITCH SETTINGS

SWITCH	BAUD RATE SETTING (NOTE)
S1-1	110
S1-2	300
S1-3	1200
S1-4	1800
S1-5	2400
S1-6	4800
S1-7	9600

Note: For baud rate required, close only that particular switch leaving all other switches open. To close switch, depress the numbered side of the switch.

* "i" denotes issue number.

♦TABLE G♦

CMDR-TO LC169B (MC65007A1 i*)
S2 SWITCH SETTINGS

SWITCH	BAUD RATE SETTING (NOTE)
S2-1	110
S2-2	300
S2-3	1200
S2-4	1800
S2-5	2400
S2-6	4800
S2-7	9600

Note: For baud rate required, close only that particular switch leaving all other switches open. To close switch, depress the numbered side of the switch.

* "i" denotes issue number.

◆TABLE H◆

**CMDR-DO LC169B (MC65009A1 i*)
S1 SWITCH SETTINGS**

OPTIONS	SWITCH SETTING (NOTE)			
	1	2	3	4
Not Defined	†	—	—	—
BISYNC Enabled	—	OPEN	—	—
BS-BCD Output	—	—	OPEN	†
ASCII Output	—	—	CLOSED	OPEN
EBCDIC Output	—	—	CLOSED	CLOSED

Note: To close switch, depress numbered side of switch.

* "i" denotes issue number.

† Does not matter which setting is selected.

♦TABLE I♦

CMDR-DO LC442
S1 SWITCH SETTINGS

SWITCH	BAUD RATE SETTING (NOTE)
S1-1	110
S1-2	300
S1-3	1200
S1-4	1800
S1-5	2400
S1-6	4800
S1-7	9600

Note: For baud rate required, close only that particular switch leaving all other switches open. To close switch, depress the numbered side of the switch.

♦TABLE J♦

CMDR-DO LC169B (MC65009A1 i*)
S2 SWITCH SETTINGS

SWITCH	BAUD RATE SETTING (NOTE)
S2-1	110
S2-2	300
S2-3	1200
S2-4	1800
S2-5	2400
S2-6	4800
S2-7	9600

Note: For baud rate required, close only that particular switch leaving all other switches open. To close switch, depress the numbered side of the switch.

* "i" denotes issue number.

◆TABLE K◆

**CMDR-DO LC443 (MC65009C1 i*) POSITION 10
S1 SWITCH SETTINGS**

BISYNC OPTIONS	SWITCH SETTINGS			
	1	2	3	4
Transparent Mode	OPEN	—	—	—
Normal Mode	CLOSED	—	—	—
Timeout (BISYNC) 1 Second	—	OPEN	—	—
Timeout (BISYNC) 3 Seconds	—	CLOSED	—	—
Retries - 3	—	—	OPEN	—
Retries - 15	—	—	CLOSED	—
Direct Output as Processor	—	—	—	OPEN
Direct Output as Terminal	—	—	—	CLOSED

* "i" denotes issue number.

♦TABLE L♦

**CMDR-DO LC443 (MC65009C1 i*) POSITION 10
S2 SWITCH SETTINGS**

OPTIONS	SWITCH SETTINGS					
	1	2	3	4	5	6
DCE Mode (Direct Connection to Computer)	OPEN	—	—	—	—	—
DTE Mode (Connection to Data Set)	CLOSED	—	—	—	—	—
Baud Rate Setting†:						
1200 bps	—	CLOSED	—	—	—	—
2400 bps	—	—	CLOSED	—	—	—
4800 bps	—	—	—	CLOSED	—	—
Transmitter Signal Element Timing (DTE Source)‡	—	—	—	—	—	OPEN
Transmitter Signal Element Timing (DCE Source)	—	—	—	—	—	CLOSED

* "i" denotes issue number.

† For baud rate required, close only that particular switch leaving all other switches open. To close switch, depress the numbered side of the switch.

‡ In DTE mode, transmitter signal timing must be DTE source.

8. PREORDERING INFORMATION

8.01 There is no formal ordering blank for the CMDR equipment. The CMDR must be locally engineered to meet customer needs and may or may not include all equipment and optional features listed in this section.

8.02 The CMDR is factory assembled and tested before shipment to the site, eliminating the need for field assignment of circuit packs.

A. CMDR-TO

8.03 When ordering a CMDR-TO with a single tape unit, the following list applies (see Table A):

- J59219B L1, L2, and L3
- J59219AD L4 and ♦L6♦

- J59219AE L1 and L2

- ♦J59219JA L1 and L3.♦

8.04 When ordering a CMDR-TO with a dual tape unit, the following list applies (see Table A):

- J59219B L1, L2, L3, and L4
- J59219AD L4 and ♦L6♦
- J59219AE L1 and L3
- ♦J59219JA L1 and L3.♦

8.05 In addition to the above-mentioned list, one of the recorded magnetic tapes in J59219AF L1, L2, or L3 should also be ordered with ample lead time

so that the customer can generate tape processing software programs. (See Table A.)

8.06 Additional CMDR-TO equipment is listed in Table M. Cables and miscellaneous equipment required for installation are described in Table N.

◆B. CMDR-DO

8.07 When ordering a CMDR with direct output, the following list applies (see Table B):

- J59219C L1
- J59219AD L5 and L6
- J59219AE L4.

8.08 In addition to the above-mentioned list, one of the recorded magnetic tapes in J59219AG L1, L2, or L3 should also be ordered with ample lead time so that the customer can generate tape processing software programs. (See Table B.)

8.09 Additional CMDR-DO equipment is listed in Table O. Cables and miscellaneous equipment required for installation are described in Table N.◆

C. Maintenance Spares

8.10 In every maintenance region, it is recommended that a 5-percent supply (minimum of one) be maintained for each of the following items:

- 302A-Type Power Supply
- Tape Transport (CMDR-TO)
- Tape Formatter (CMDR-TO)
- Circuit Packs for CMDR-TO (Table P)
- ◆Circuit Packs for CMDR-DO (Table Q)◆
- M12R Cord (null modem)
- Batteries.

◆TABLE M◆

ADDITIONAL CMDR-TO EQUIPMENT

EQUIPMENT	MODEL NUMBER	QUANTITY	
		REQUIRED	OPTIONAL
TWIST-LOCK Receptacle	Hubbell No. 2310	1	—
LSU Data Link:			
Data Set	212A(R)	1	2
Automatic Calling Unit	801C(R)-L1	1	2
Terminal: Customer Hard-Copy Terminal (or equivalent)	Model 43 Teleprinter*	—	1
Craft/TELCO Maintenance Data Set	212A(R)	1	—

* Or may be customer-provided terminal equipment.

TABLE N

CABLES AND MISCELLANEOUS EQUIPMENT

EQUIPMENT	DESCRIPTION
Cables: B6A	The B6A cable is used for connection from the M12R cord to the terminal. Equipped with 25-pin connectors that conform to EIA standards for RS-232-C extension cords. Cable can also connect to the M25B cord.
Cords: M12R (Null Modem)	One M12R cord is required for each terminal device that connects to the CMDR without a data set (maximum of two).
M25B	The M25B cord is used for connection from the CMDR to the M12R cord, to the 801C(R)-L1 ACUs, and to the data sets. The cable is available in standard lengths of 0.3, 0.6, 1.2, 3, or 7.6m (1, 2, 4, 10, or 25 ft). The M25B is equipped with 25-pin connectors that conform to EIA standards for RS-232-C extension cords.

TABLE O4

ADDITIONAL CMDR-DO EQUIPMENT

EQUIPMENT	MODEL NUMBER	QUANTITY	
		REQUIRED	OPTIONAL
TWIST-LOCK Receptacle	Hubbell No. 4710	1	—
LSU Data Link:			
Data Set	212A(R)	1	2
Automatic Calling Unit	801C(R)-L1	1	2
Direct Output Data Link Data Set:*			
4800 baud	208A-L1B	2	—
2400 baud	201C-L1D	2	—
1200 baud	212A(R)	2	—
Terminal: Customer Hard-Copy Terminal	Model 43 Teleprinter†	—	1
Craft/TELCO Maintenance Data Set	212A(R)	1	—

* Required when the data link is over 15.2m (50 ft) in length.

† Or may be customer-provided terminal equipment.

TABLE P

CMDR-TO J59219B EQUIPMENT CABINET CIRCUIT PACK SPARES REQUIRED

CIRCUIT PACK NUMBER	IDENTIFICATION	QUANTITY REQUIRED
LC169B (MC65007A1 i*)	Processor	1
LC359 (MC65007E1 i*)	Modem Interface	1
LC360	Formatter Controller	1
LC443 (MC65007B1 i*)	Expansion Memory	1
LC443 (MC65007C1 i*)	Expansion Memory	1
LC443 (MC65007D1 i*)	Expansion Memory	1
LC451	Real-Time Clock and Display Driver	1
LC452	Serial Port	1
LC457	Automatic Calling Unit Port	1

* "i" denotes issue number.

♦TABLE Q♦

CMDR-DO J59219C EQUIPMENT CABINET CIRCUIT PACK SPARES REQUIRED

CIRCUIT PACK NUMBER	IDENTIFICATION	QUANTITY REQUIRED
LC169B (MC65009A1 i*)	Processor	1
LC461 (MC65010A1 i*)	Protocol Processor	1
LC442	Maintenance Access Port	1
LC443 (MC65009B1 i*)	Expansion Memory	1
LC443 (MC65009C1 i*)	Expansion Memory	1
LC443 (MC65009D1 i*)	Expansion Memory	1
LC451	Real-Time Clock and Display Driver	1
LC452	Serial Port	1
LC457	Automatic Calling Unit Port	1

* "i" denotes issue number.

9. EQUIPMENT DRAWINGS

the prefix and base number and requesting the current dash (-) number:

9.01 The following equipment drawings for the CMDR-TO should be ordered by referring to

EQUIPMENT CODE	TITLE	EQUIPMENT DRAWING
J59219B	Centralized Message Detail Recorder Cabinet Assembly	J59219B-()
J59219AD	Carrier Assembly	J59219AD-()
J59219AE	Control Panel Assembly	J59219AE-()
♦J59219JA	AC Power Distribution Unit and Fans	J59219JA-()♦

SECTION 190-403-200

◆9.02 The following equipment drawings for the CMDR-DO should be ordered by referring to

the prefix and base number and requesting the current dash (-) number:

EQUIPMENT CODE	TITLE	EQUIPMENT DRAWING
J59219C	Centralized Message Detail Recorder Cabinet Assembly	J59219C-()
J59219AD	Carrier Assembly	J59219AD-()
J59219AE	Control Panel Assembly	J59219AE-()◆

10. REFERENCES

10.01 The following J-drawings are associated with the CMDR and may be referred to for additional information:

DRAWING	TITLE
◆J59219JA	◆PBX Systems — Customer Premises System — 93A Local Message Detail Recorder and 93B Central Message Detail Recorder Specification for AC Power Distribution and Fan Unit◆
J59219B	PBX Systems — Specifications for 93B Customer Premises System Message Detail Recorder Stand Alone Cabinet Assembly, Wiring, and Equipment
◆J59219C	◆PBX Systems — 93B Direct Output CMDR Specifications for CMDR Cabinet Assembly, Wiring, and Equipment◆
J59219AD	PBX Systems — Specifications for 93B Centralized Message Detail Recorder (CMDR) Customer Premises System Carrier Assembly
J59219AE	PBX Systems — Specifications for 93B Central Message Detail Recording Control Panel

DRAWING

TITLE

J59219AF PBX Systems — Specifications for 93B Central Message Detail Recording Sample Call Information Tape

◆J59219AG PBX Systems — 93B Direct Output CMDR Specifications for Sample Call Information Tape◆

10.02 The following SD and associated CD is applicable to the CMDR and may be referred to when required:

DRAWING	TITLE
SD-66967-01	93B Customer Premises System Message Detail Recording Circuit

10.03 The following sections should be referred to for additional information:

SECTION	TITLE
◆190-403-000	93B Customer Premises System (CPS) — Installation, Test, and Maintenance
190-403-100	93B Customer Premises System — Descriptive Information — Centralized Message Detail Recorder

SECTION	TITLE	10.04 The following manuals may be referred to for additional information:	
		MANUAL	TITLE
190-403-250	93B Customer Premises System — Maintenance Support		
592-027-100	Data Set 208A-Type Transmitter-Receiver — Description and Operation	999-200-219	93B Customer Premises System (CPS) — Centralized Message Detail Recorder (CMDR) — Operation Manual for Tape Output
592-029-120	Data Set 201C-L1D Transmitter-Receiver — Description and Operation	999-200-222	93B Customer Premises System (CPS) — Centralized Message Detail Recorder (CMDR) — Operation Manual for Direct Output
592-039-100	Data Set 212A(R)-L1A/2A Transmitter-Receiver — Description and Operation	PUB42711	Recorded Magnetic Tape for Centralized Message Detail Recorder Formats for No. 1 and No. 1A ESS and DIMENSION® Feature Packages 4, 7, 8, 10, 11, 12, and 15 Provided by the 93B Customer Premises System
598-088-100	Data Auxiliary Set 801C(R)-L1/2 — Description and Operation		