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APPENDIX

to

TECHNICAL MANUAL

for

DUAL DIVERSITY RECEIVER
MODEL DDR-83213



THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y. **OTTAWA, ONTARIO**



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APPENDIX

RACK AND ACCESSORIES

1. INTRODUCTION

This manual contains technical information pertaining to the equipment racks and accessory units employed in the DDR-8 receiver system.

The units covered in this appendix are:

- a. Electrical Equipment Cabinet, Model RAK-31A.
- b. Power Control Panel, Model DCP-2.
- c. Line Patch Panel, MODEL LPP-4.

2. DESCRIPTION OF EQUIPMENT

a. ELECTRICAL EQUIPMENT CABINET RAK-31A. - RAK-31A (figure 1) is a single rack providing an enclosure for the various modular units constituting the DDR-8. The rack is equipped with seven sets of tilt-lock drawer slides for mounting the GPR-92 receivers, the SBS-1 sideband selectors, the AFC-2A automatic frequency controls, and the VOX-5 variable frequency oscillator. Two sets of non-tilt drawer slides are provided for mounting the LPP-4 line patch panel and the DVC-1 diversity voice combiner. Refer to figure 1-2 of the DDR-8 system manual for the location of modular units in RAK-31A. Cable retractors, mounted on the right side of the rack (as viewed from the rear), are provided for retracting wiring cables of slide-mounted units to prevent snagging. Cable access holes with removable cover plates are conveniently located on both sides, bottom, and rear of the rack for installation flexibility (refer to Section 2 of the DDR-8 system manual).

RAK-31A-B is a base-mounted rack; a separate base sits directly

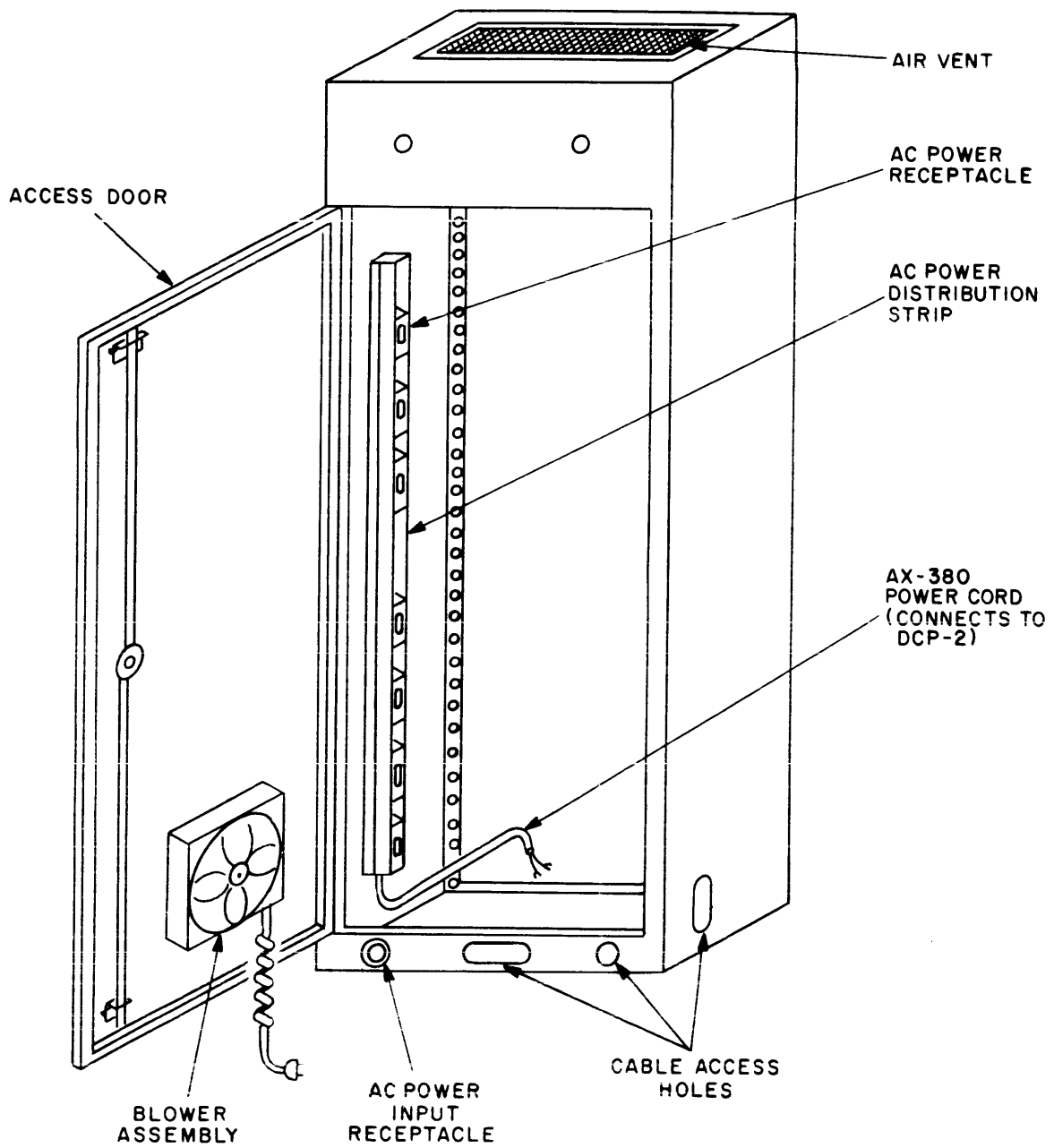


Figure 1. Electrical Equipment Cabinet, RAK-31A, Rear View

on the floor and the rack bolts to the base. RAK-31-S is a shock-mounted rack that is mounted to the structure with six shock mounts, four at the bottom and two at the top.

RAK-31A contains a forced-air cooling system employing washable air filters. The fan is mounted on the lower portion of the rear door. Air exhaust is through the top of the rack.

b. POWER CONTROL PANEL DCP-2. - Power Control Panel DCP-2 (figure 2) extends live voltage through a ten-amp circuit breaker to the a-c power strip for application to the various DDR-8 modular units (refer to figure 2-3 of the DDR-8 system manual). Two individually fused convenience outlets mounted on the front panel provide 115- or 230-vac (depending upon input power source) for powering external equipment. A convenience outlet mounted on the rear of the chassis permits connection of live voltage to internal equipment without going through the ten-amp circuit breaker (refer to figure 5 of this appendix); this outlet is used to provide constant power to the VOX-5 oven in the DDR-8.

c. LINE PATCH PANEL LPP-4. - Line Patch Panel LPP-4 (figure 3) facilitates interconnection of the various DDR-8 modular units for operating and testing purposes. The LPP-4 contains forty-eight PJ-318 jacks arranged in two rows; the top row of jacks is used for monitoring, and the bottom row of jacks is used for patching. A programming board located in the center of the chassis provides wiring flexibility for the purpose of changing the association between front-panel jacks and the terminal boards on the rear of the chassis.



Figure 2. Power Control Panel DCP-2

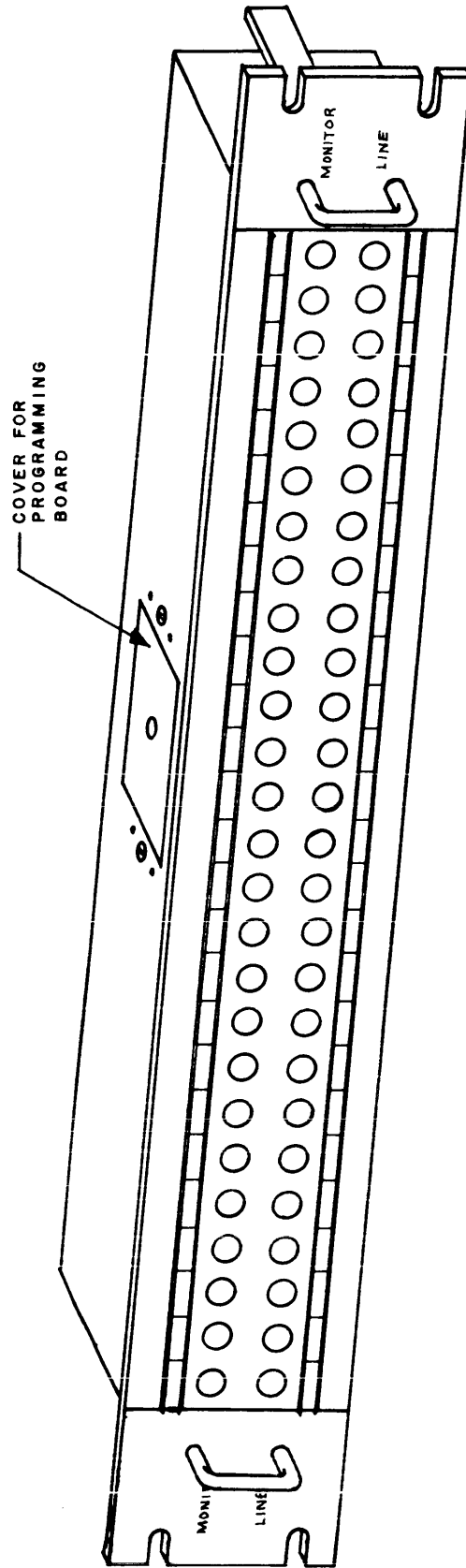


Figure 3. Line Patch Panel. LPP-4

3. ELECTRICAL AND MECHANICAL CHARACTERISTICS.

a. ELECTRICAL EQUIPMENT CABINET RAK-31A

- (1) Dimension - - - - - 71-1/2 inches high x 20-5/8 inches wide x 22-1/2 inches deep.
- (2) Weight (including cables, slides, and units normally supplied with cabinet) - - - - - -340 pounds

b. POWER CONTROL PANEL DCP-2

- (1) AC Receptacles - - - - - 3
- (2) Fuses - - - - - 3
- (3) Dimensions - - - - - 3-1/2 inches high x 19 inches wide x 7-1/4 inches deep.

c. LINE PATCH PANEL LPP-4

- (1) Number of jacks - - - - 48 (arranged in two rows of 24)
- (2) Type of jack - - - - - -PJ-318
- (3) Dimensions - - - - - -3-1/2 inches high x 19 inches wide x 15-1/4 inches deep

4. INSTALLATION OF RAK-31A, DCP-2 AND LPP-4.

a. INITIAL INSPECTION - Each piece of equipment has been thoroughly inspected and tested at the factory before shipment. Upon receipt, unpack the equipment carefully and inspect each item for possible signs of damage. Inspect all packing material for parts which may have been shipped as loose items.

With respect to damage to the equipment for which the carrier is liable, the Technical Materiel Corporation will assist in describing methods of repair and the furnishing of replacement parts.

b. MECHANICAL INSTALLATION - Figure 4 is an installation and dimensional outline drawing of RAK-31A. Using figure 4 as a guide, place the cabinet in a suitable operating location; adequate ventilating space and space for opening the rear door are prime considerations when choosing the operating site.

Refer to paragraph 2-3c of the DDR-8 system manual for information concerning the mechanical installation of modular units.

c. ELECTRICAL INSTALLATION - Refer to figure 2-3 of the DDR-8 system manual. Power Control Panel DCP-2 and Line Filter FI-102 are installed prior to shipment; electrical installation of RAK-31A therefore consists merely of connecting power to the a-c power receptacle located on the lower left rear corner of the rack.

CAUTION

Before connecting a-c power to RAK-31A, refer to paragraph 2-2 of the DDR-8 system manual and ensure that the power source is satisfactory.

All electrical connections in the DDR-8 that are not direct cabling connections are made via Line Patch Panel LPP-4. Tables 1 and 2 list the interconnections between the front-panel jacks and rear-panel terminal blocks of the LPP-4; the association between jacks and terminal blocks can be changed by altering the jumpers on the programming board (refer to table 2).

5. PARTS LIST.

Reference designations have been assigned to identify all maintenance parts of the equipment. These designations are used for marking the equipment (adjacent to the part they identify) and are included on drawings, diagrams, and in the parts lists. Parts lists

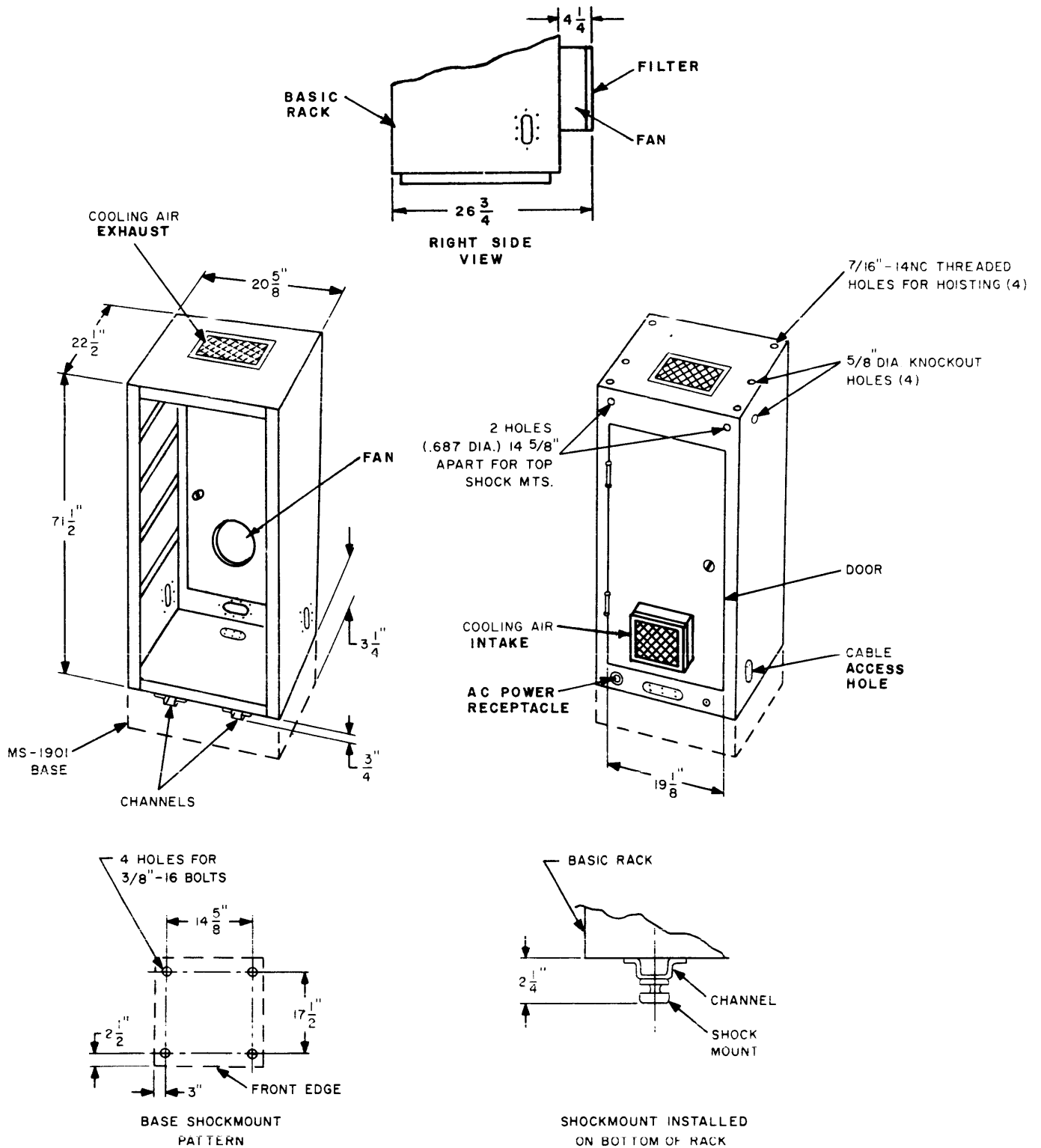
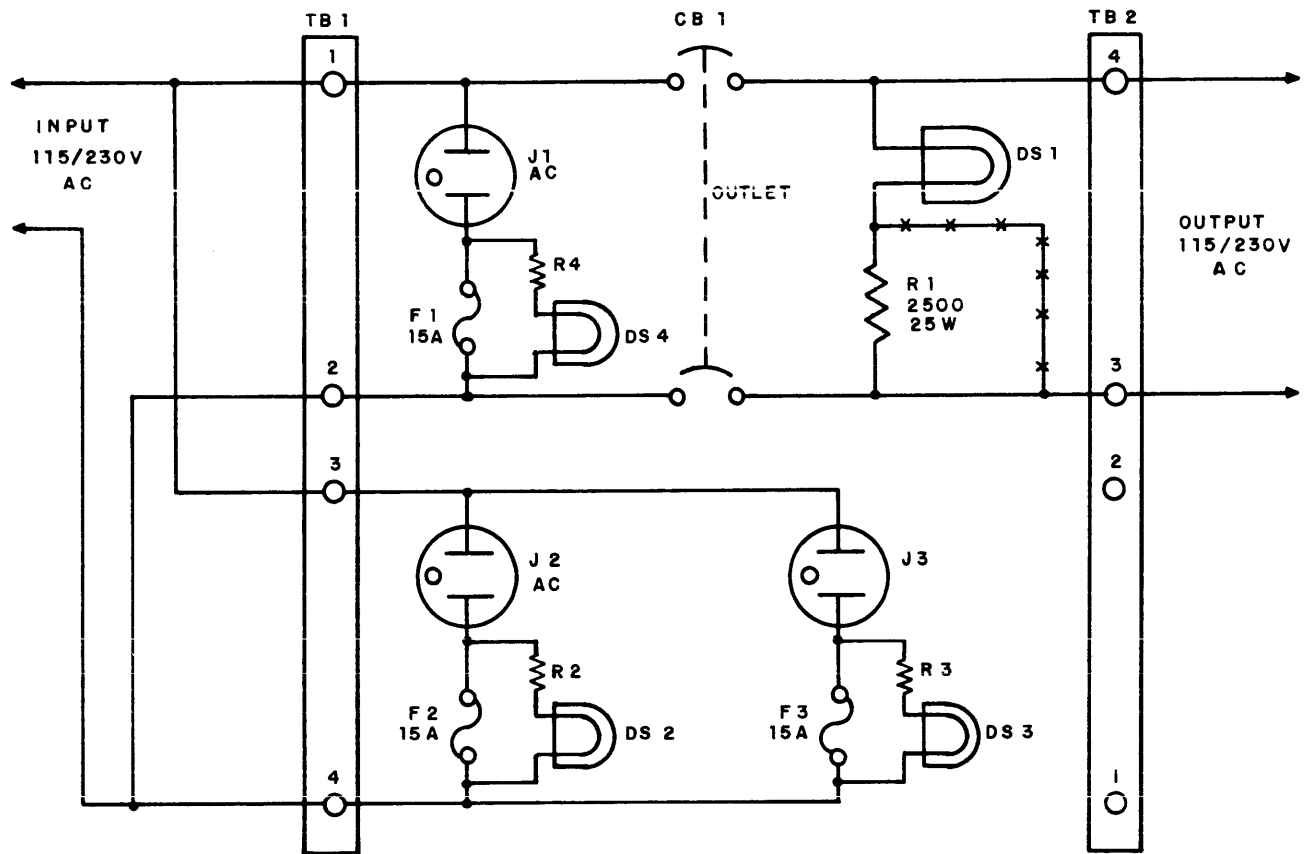


Figure 4. Installation and Dimensional Outline Drawing, RAK-31A

for Power Control Panel DCP-2, Line Patch Panel LPP-4, and Electrical Equipment Cabinet RAK-31A are given in tables 3, 4, and 5 respectively.

6. SCHEMATIC DIAGRAMS.

Figure 5 is a schematic diagram of Power Control Panel DCP-2. Refer to tables 1 and 2 for wiring information concerning Line Patch Panel LPP-4.



NOTE: FOR 230V OPERATION, REMOVE
 JUMPER MARKED X X X
 CHANGE FUSES F1, F2, & F3
 FROM 15 AMP TO 8 AMP.

Figure 5. Schematic Diagram, DCP-2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
A GRAY	BSP#1	BSP#2	GPR92#1	AGC#1	SBS#1CH1	SBS#1CH2	SBS#1AGC	GPR92#2	AGC#2	SBS#2CH1	SBS#2CH2	SBS#2AGC	DVCIN#1	DVCIN#2	DVC OUT	LINE	LINE	LINE	LINE		JACK DESIG	T
	RED	YEL	BLUE	GRAY	RED	YEL	BLUE	GRAY	RED	YEL	BLUE	GRAY	RED	YEL	BLUE	GRAY	RED	YEL	BLUE		COLOR OF WIRE	
B GREEN	BSP#1	BSP#2	GPR92#1	AGC#1	SBS#1CH1	SBS#1CH2	SBS#1AGC	GPR92#2	AGC#2	SBS#2CH1	SBS#2CH2	SBS#2AGC	DVCIN#1	DVCIN#2	DVC OUT	LINE	LINE	LINE	LINE		JACK DESIG	R
	BROWN	ORNG	GREEN	VIOL	BROWN	ORNG	GREEN	VIOL	BROWN	ORNG	GREEN	VIOL	BROWN	ORNG	GREEN	VIOL	BROWN	ORNG	GREEN		COLOR OF WIRE	
C YELLOW	BSP#1	BSP#2	GPR92#1	AGC#1	SBS#1CH1	SBS#1CH2	SBS#1AGC	GPR92#2	AGC#2	SBS#2CH1	SBS#2CH2	SBS#2AGC	DVCIN#1	DVCIN#2	DVC OUT	LINE	LINE	LINE	LINE		JACK DESIG	S
										GND	GND	GND									COLOR OF WIRE	
D ORANGE	BSP#1	BSP#2	GPR92#1	AGC#1	SBS#1CH1	SBS#1CH2	SBS#1AGC	GPR92#2	AGC#2	SBS#2CH1	SBS#2CH2	SBS#2AGC	DVCIN#1	DVCIN#2	DVC OUT	LINE	LINE	LINE	LINE		JACK DESIG	TC
	W/RED	W/YEL	W/BLUE	W/GRAY	W/RED	W/YEL	W/BLUE	W/GRAY	W/RED	W/YEL	W/BLUE	W/GRAY	W/RED	W/YEL	W/BLUE	W/GRAY	W/RED	W/YEL	W/BLUE		COLOR OF WIRE	
E RED	BSP#1	BSP#2	GPR92#1	AGC#1	SBS#1CH1	SBS#1CH2	SBS#1AGC	GPR92#2	AGC#2	SBS#2CH1	SBS#2CH2	SBS#2AGC	DVCIN#1	DVCIN#2	DVC OUT	LINE	LINE	LINE	LINE		JACK DESIG	RC
	W/BRN	W/ORNG	W/GRN	W/VIOL	W/BRN	W/ORNG	W/GRN	W/VIOL	W/BRN	W/ORNG	W/GRN	W/VIOL	W/BRN	W/ORNG	W/GRN	W/VIOL	W/BRN	W/ORNG	W/GRN		COLOR OF WIRE	
F BLACK																						
G GRAY																						
H GREEN																						
I YELLOW	E5-3	E5-2	E5-1		E4-12	E4-11	E4-10		E4-9	E4-8	E4-7		E4-6	E4-5	E4-4		E4-3	E4-2	E4-1		TERMINAL BLOCK & TERMINAL	
		W/GRN		W/YEL		W/ORN		W/RED		W/BRN		W/BLK		WHITE		GRAY		VIOL		BLUE	COLOR OF WIRE	
			GND			31	GND	30		24	GND	23		22	GND	21			GND		WIRE DESIG FIG. 2-3	
J ORANGE	E1-6	E1-5	E1-4		E1-3	E1-2	E1-1		E5-12	E5-11	E5-10		E5-9	E5-8	E5-7		E5-6	E5-5	E5-4		TERM BLOCK & TERM	
	YEL		ORNG		RED		BRN		RED		BRN		BLK		W/GRAY		W/VIOL		W/BLUE		COLOR OF WIRE	
	28	GND	27		34	GND	29		26	GND	25			GND				GND			WIRE DESIG FIG. 2-3	
K RED		E209	E2-8	E2-7		E2-6	E2-5	E2-4		E2-3	E2-2	E2-1		E1-12	E1-11	E1-10		E1-9	E1-8	E1-7	TERM BLOCK & TERM	
		W/YEL		W/ORNG		W/RED		W/BRN		W/BLK		WHITE		GRAY		VIOL		BLUE		GREEN	COLOR OF WIRE	
		42	GND	43		44	GND	45			GND	46		33	GND	32		36	GND	35	WIRE DESIG FIG. 2-3	
L BLACK	E3-12	E3-11	E3-10		E3-9	E3-8	E3-7		E3-6	E3-5	E3-4		E3-3	E3-2	E3-1		E2-12	E2-11	E2-10		TERM BLOCK & TERM	
	GREEN		YEL		ORNG		RED		BRN		BLK		W/GRAY		W/VIOL		W/BLUE		W/GRN		COLOR OF WIRE	
	4	GND	3		2	GND	1		37	GND	38		39	GND	40		41	GND			WIRE DESIG FIG. 2-3	

LINE
MONITOR

Table 1. Terminal Block and Front Panel Jack Wiring Connection, LPP-4 Programming Board

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A GRAY	L1	L9	L19	L17	K14	K18	J9	K2	K1	J1	I6	J7	I14	I10	J13	J17	J2			
B GREEN	L3	L7	K11		K16	K20		K4		J3	I8		I16	I12	J15	J14	J14			
C YELLOW	L2	L6	L10		K15	K19		K3		J2	J7		I13	I11	J14	J20	J1			
D ORANGE	D3	D8	D1	E13				D2	E11											
E RED	E3	E8	E1					E2												
F BLACK																				
G GRAY																				
H GREEN																				
I YELLOW		A18	C18	F18		A11	C11	B11		A14	C14	B14		A13	C13	B13		A19	C19	B19
J ORANGE	A10	C10	B10		A7		A12		A19	C15	B15		A16	C16	B16		A17	C17	B17	
K RED		A6	C6	F6		E6		K6			D9	A9		A9	C9	F9		A9	C9	B9
L BLACK	A1	C1	B1		A9	C9	F9		A1	C5	F5		I15		I5		A4		D4	

TABLE 1. LUMBER CHARACTERISTICS FOR LIFT-4 PER SEAWOOD 1.8 AHS

TABLE 3. PARTS LIST, DCP-2

REF. SYM.	DESCRIPTION	FUNCTION	TMC PART NO.
CB1	CIRCUIT BREAKER: 110/230 volts AC, 10 amps, 60 cps, single pole.		SW-215
DS1	LAMP, INCANDESCENT: 120 volts, 3 watts double contact bayonet base.		BI-102-3
DS2	Non-replaceable item, part of XF2.		
DS3	Non-replaceable item, part of XF3.		
DS4	Non-replaceable item, part of XF1.		
F1	FUSE, CARTRIDGE: 8 amps; 1-1/4 in. dia.; slow blowing. FOR 230 VOLT OPERATION.	Overload Protection	FU-102-8
F2	Same as F1.	Overload Protection	
F3	Same as F1	Overload Protection	
F1	FUSE, CARTRIDGE: 15 amps; 1-1/4 in. dia.; slow blowing FOR 115 VOLT OPERATION.	Overload Protection	FU-102-15
F2	Same as F1	Overload Protection	
F3	Same as F1		
J1	CONNECTOR, RECEPTACLE, ELECTRICAL: 2 female contacts; flat, straight type, polarized.		JJ-130
J2	CONNECTOR, RECEPTACLE, ELECTRICAL: 2 female contacts; flat straight type; 1 "U" shaped female grounding contact; rated 250 volts, 10 amps; 125 volts 15 amps.		JJ-173
J3	Same as J2.		
R1	RESISTOR, FIXED, WIREWOUND: 2500 ohms, + 5%, 25 watt; with solderlug terminals.		RW-111-25

TABLE 3. PARTS LIST, DCP-2 (Cont)

REF. SYM.	DESCRIPTION	FUNCTION	TMC PART NO.
R2	Non-replaceable item part of XF2.		
R3	Non-replaceable item part of XF3.		
R4	Non-replaceable item part of XF1.		
TB1	TERMINAL BOARD: barrier type; 4 double screw terminals, 10-32 thd; phenolic body.	Interconnect	TM-118-4
TB2	Same as TB1	Interconnect	
XDS1	LIGHT, INDICATOR, bayonet base; with red frosted lens.		TS-124-1
XF1	FUSEHOLDER: consists of symbols DS4, R4; amber octagonal lens; 24-32 volts, 20 amps.		FH-104-4
XF2	Same as XF1; consists of symbols DS2, R2.		
XF3	Same as XF1; consists of symbols DS3, R3.		

TABLE 4. PARTS LIST, LPP-4
(To Be Supplied)

TABLE 5. PARTS LIST, RAK-31A

(To Be Supplied)

1. 1/2" x 1/2" x 1/2" Aluminum
12. 1/2" x 1/2" x 1/2" Aluminum

2. 1/2" x 1/2" x 1/2" Aluminum

4. 1/2" x 1/2" x 1/2" Aluminum