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UNCLASSIFIED

TECHNICAL MANUAL

for

GENERAL PURPOSE RECEIVER SYSTEM

MODEL DDR-7J

APPENDIX

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

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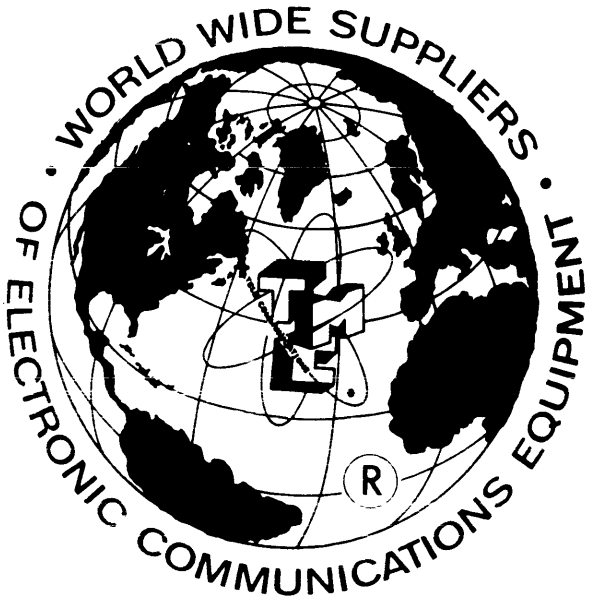

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N.Y. OTTAWA, ONTARIO

IN-366-A

ISSUE DATE 15 April 1966

THE TECHNICAL MATERIEL CORPORATION
COMMUNICATIONS ENGINEERS
700 FENIMORE ROAD MAMARONECK, N. Y.

Warranty

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes,* fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes*furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

*Electron tubes also include semi-conductor devices.

PROCEDURE FOR RETURN OF MATERIAL OR EQUIPMENT

Should it be necessary to return equipment or material for repair or replacement, whether within warranty or otherwise, a return authorization must be obtained from TMC prior to shipment. The request for return authorization should include the following information:

1. Model Number of Equipment.
2. Serial Number of Equipment.
3. TMC Part Number.
4. Nature of defect or cause of failure.
5. The contract or purchase order under which equipment was delivered.

PROCEDURE FOR ORDERING REPLACEMENT PARTS

When ordering replacement parts, the following information must be included in the order as applicable:

1. Quantity Required.
2. TMC Part Number.
3. Equipment in which used by TMC or Military Model Number.
4. Brief Description of the Item.
5. The *Crystal Frequency* if the order includes crystals.

PROCEDURE IN THE EVENT OF DAMAGE INCURRED IN SHIPMENT

TMC's Warranty specifically excludes damage incurred in shipment to or from the factory. In the event equipment is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved and not with TMC.

All correspondence pertaining to Warranty Claims, return, repair, or replacement and all material or equipment returned for repair or replacement, within Warranty or otherwise, should be addressed as follows:

THE TECHNICAL MATERIEL CORPORATION
Engineering Services Department
700 Fenimore Road
Mamaroneck, New York

RECORD OF CORRECTIONS MADE

Change No.	Date of Change	Date Entered	Entered By

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APPENDIX

RACK and EQUIPMENT

1. INTRODUCTION

This appendix contains technical information pertaining to the electrical equipment cabinet (rack) and units used in the DDR-7J receiver system. The units covered in this appendix are:

a. Mode Selector, Model AX-625

b. Line Patch Panel, Model LPP-3-2

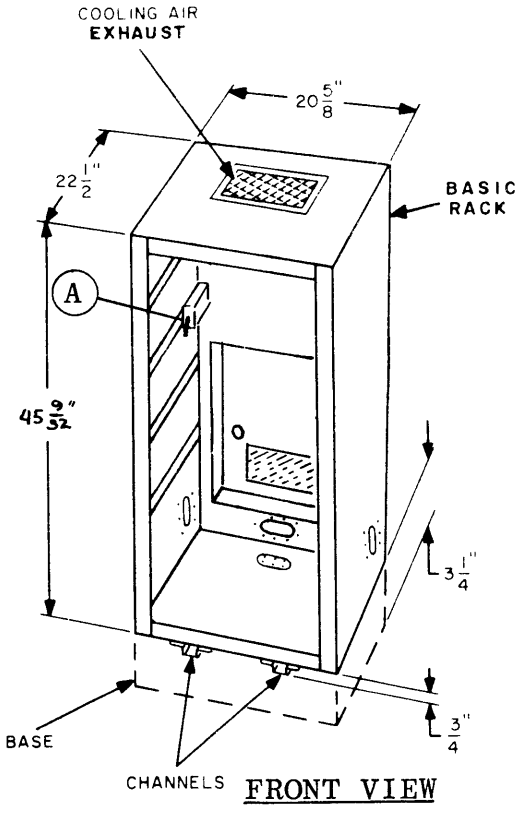
c. Loudspeaker Panel, Model LSP-4

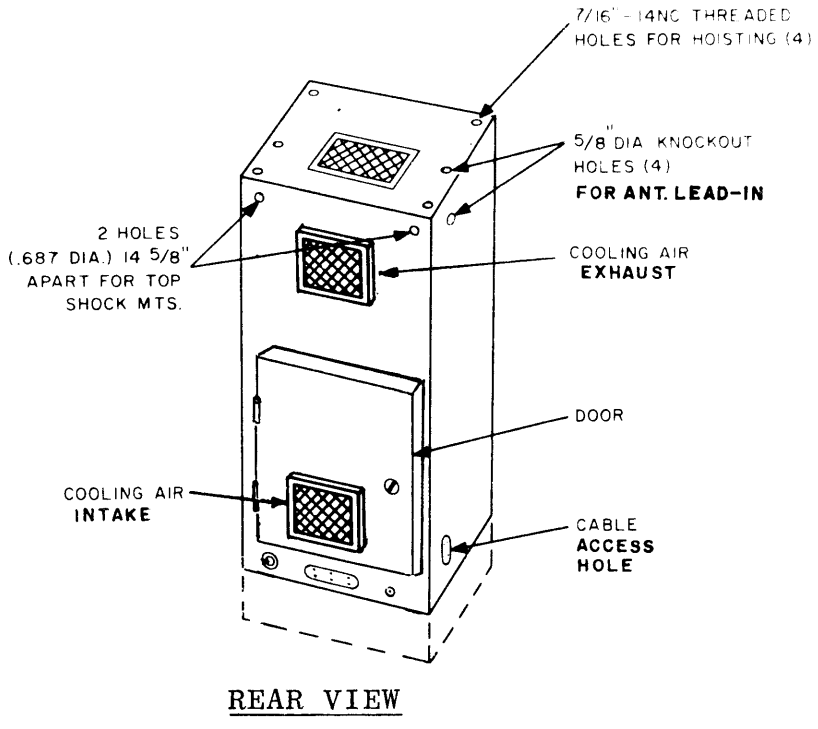
d. Utility Panel, Model HPP-1

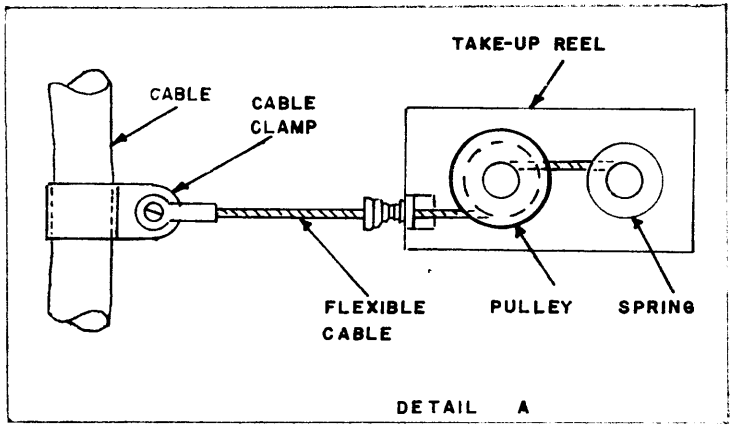
e. Power Supply, AP-133 (for 115-vac operation)
Power Supply, AP-134 (for 230-vac operation)

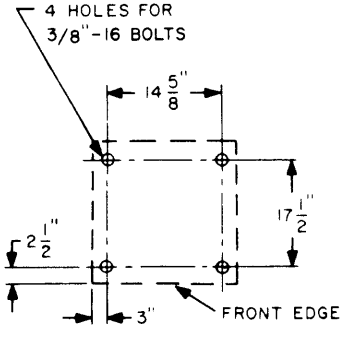
2. DESCRIPTION OF EQUIPMENT

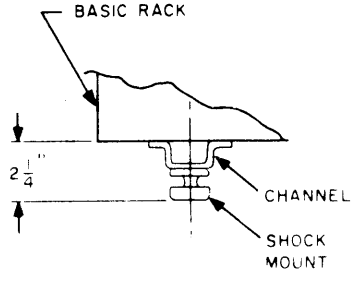
a. RAK-106-2. - The electrical equipment cabinet, Model RAK-106-2 (figure A), is a standard steel rack for mounting 19-inch wide units. The rack contains two sets of tilt-lock slide mechanisms for mounting the GPR and the MSR units. A hinged rear door is provided; the front mounting flange contains #10-32 threaded holes spaced in the standard rack pattern to facilitate the attachment of modular unit front panels. Reel-mounted retracting springs for the GPR and MSR cables (see figure A) are provided to prevent cable snagging when the units are drawn out for checking or servicing. Two intake blowers, used for the rack forced-air cooling system, are installed on the lower part of the rear door. Four holes, with cover plates, are located on the bottom, rear, and sides of the cabinet to facilitate connections of external wiring. The cabinet is supplied with a base-mount or a shock mount (refer to figure A). Four 5/8-inch diameter knockout plates, located near the top of the cabinet, are used for











366A-1

Figure A. Electrical Equipment Cabinet, RAK-106-2

antenna cable installation. Refer to paragraph 5 and RAK-106-2 Parts List.

b. AX-625. The Mode Selector Panel AX-625 consists of a microphone jack and a selector switch, providing remote control for an associated transmitter. Refer to the schematic diagram, figure F.

c. LPP-3-2. Line Patch Panel, Model LPP-3-2, provides for monitoring and flexibility in receiver output configuration (see figure D). Refer to the schematic diagram, figure E.

d. LSP-4. Loudspeaker Panel, Model LSP-4, consists of a single 4-inch PM speaker unit mounted to a 19-inch wide front panel, and a terminal board (located at the rear of the unit). The LSP is used to monitor the audio output. Refer to the schematic diagram, figure G.

e. HPP-1. Utility Panel, Model HPP-1, consists of two front-panel jacks for a-c line connection, and two protective fuses which are connected between the a-c input terminal board and the jacks. Refer to the schematic diagram, figure H.

f. AP-133 and AP-134. The 48-volt power source for remote telephone operation is provided by AP-133 (115-vac), and AP-134 (230-vac) power supplies. Refer to the schematic diagram, figure I.

3. INTERCONNECTION OF UNITS

To install DDR-7J cabling, refer to figures A, C, and I.

4. SHIPPING DATA

The DDR-7J is assembled at the factory and tested prior to shipment. When the DDR is shipped, certain units are removed from the cabinet and packaged separately in crates; the contents of the three crates containing the DDR-7J is described in table A.

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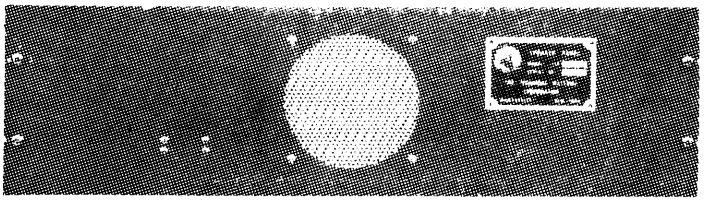

Figure B1. Loudspeaker Panel, Model LSP-4

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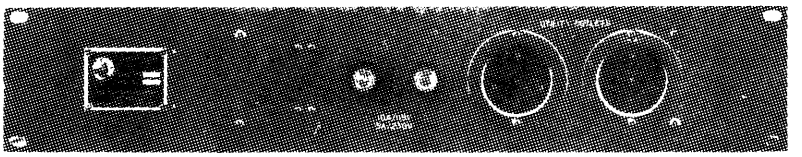

Figure B2. Utility Panel, Model HPP-1

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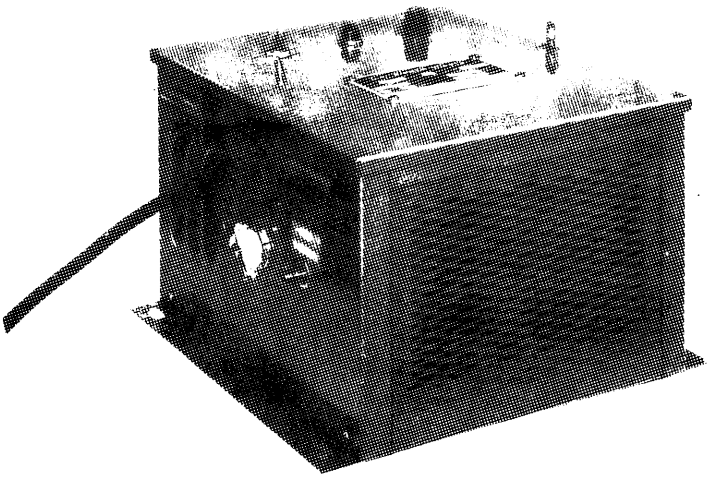

366A-2

Figure B3. Power Supply, Model AP-133/AP-134

Figure B. Loudspeaker Panel, Utility Panel, and 48V Power Supply

Crate identifications, sizes and weights are as follows:

Crate No.	Size of Crate (inches)	Weight (w/contents)
1	55-5/8 x 24-5/8 x 30-3/4	390 lbs.
2	27-1/4 x 23-7/8 x 30-3/4	182 lbs.
3	24-1/4 x 20-5/8 x 10	77 lbs.

TABLE A. SHIPPING LIST, DDR-7J

CRATE NO.	QTY.	TMC PART NO.	DESCRIPTION
1	1	RAK-106-2	Electrical equipment cabinet. Consists of rack structure and components listed in RAK-106-2 Parts List.
	1	AX-625	Mode Selector Panel. Consists of front panel, selector switch, jack, and terminal board.
	1	LSP-4	Loudspeaker Panel (installed in rack). Consists of front panel, 4-inch PM speaker, and terminal board TB 1501.
	1	LPP-3-2	Line Patch Panel (installed in rack). Consists of front panel and jacks.
	1	HPP-1	Utility Panel (installed in rack). Consists of two jacks and two fuses.
	1	AP-133	48V Power Supply unit.
	1	AP-134	48V Power Supply unit.
Note:	Instruction Manuals Test Data Loose Items	) See Table B.	

TABLE A. SHIPPING LIST, DDR-7J (CONT)

CRATE NO.	QTY.	TMC PART NO.	DESCRIPTION
2	1	GPR-90RXD	Communications Receiver. Consists of unit and parts as described in GPR-90RXD Technical Manual.
	1	MSR-4	Mode Selector, Receiving. Consists of unit and parts as described in MSR-4 Technical Manual.
3	1	CFA-1	Frequency Shift Converter. Consists of unit and parts as described in CFA-1 Technical Manual.

5. LOOSE ITEMS

Table B lists the items supplied with the DDR-7J; the items are packed in Crate No. 1.

TABLE B. LOOSE ITEMS, DDR-7J

QTY.	TMC PART NO.	PURPOSE
4	SC -142-C	(Eye Bolts)
3	TM-105-8AR	(Fanning-Strips)
1	TM-105-12AR	(Fanning-Strip)
1	PL-190	(Electrical Plug)
16	SCBP1032BN8	(Screws)
16	WA 101-5	(Washers)
4		(Patch Cables)
2	Instruction Manuals	
1	Test Data	

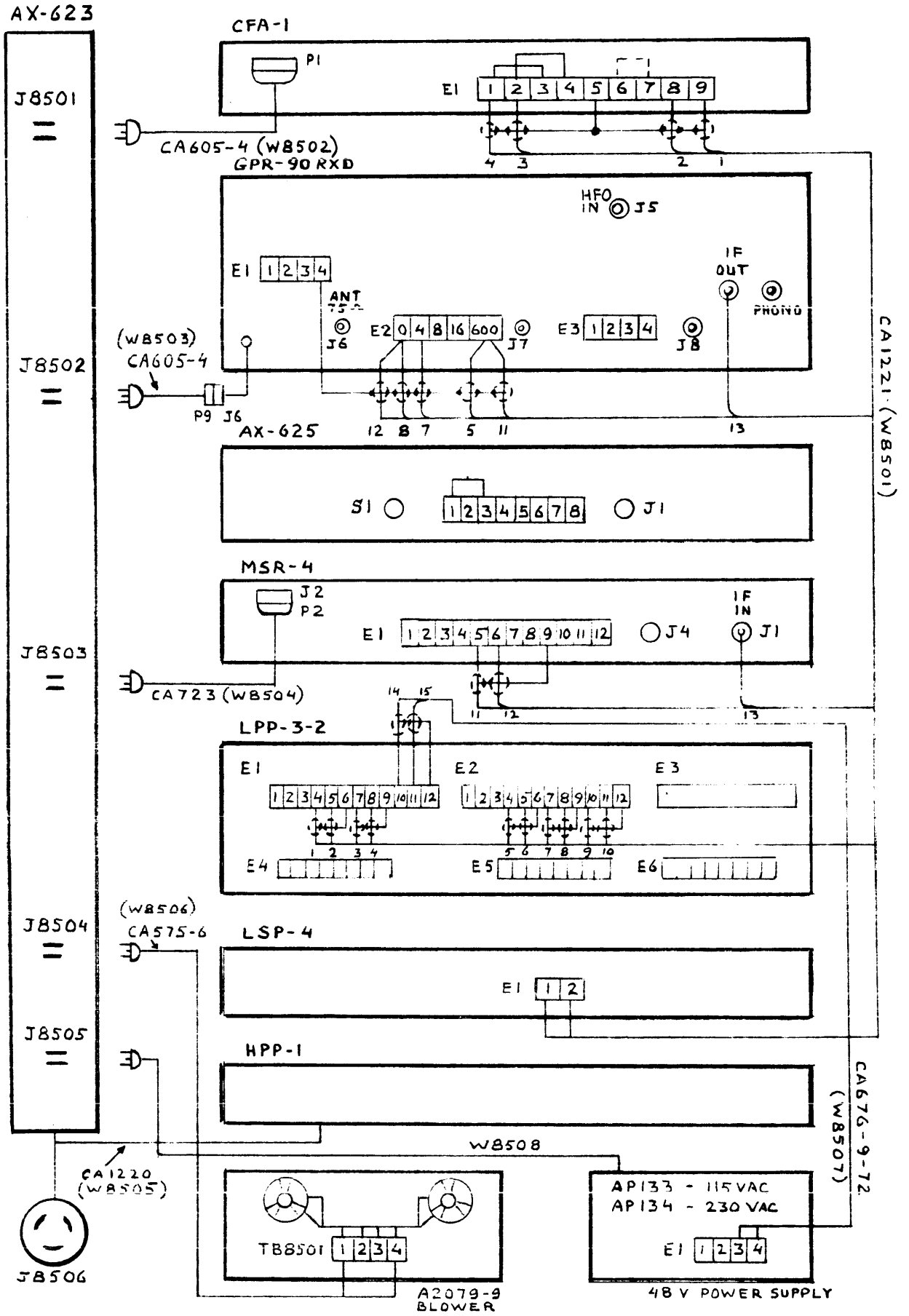

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Figure C. Interconnect Cabling Diagram, CK-1093

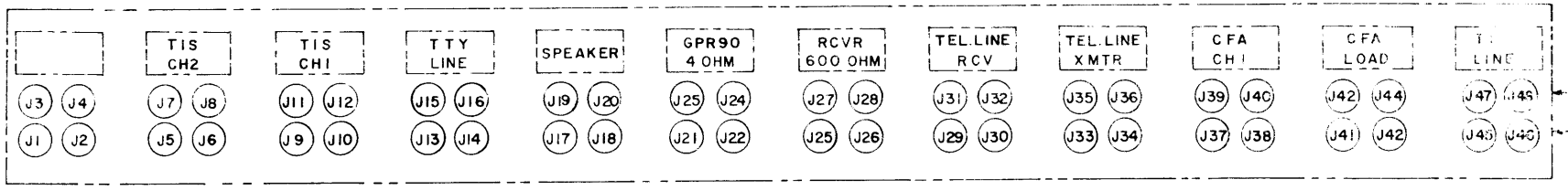


Figure D. Front Panel, LPP-3-2

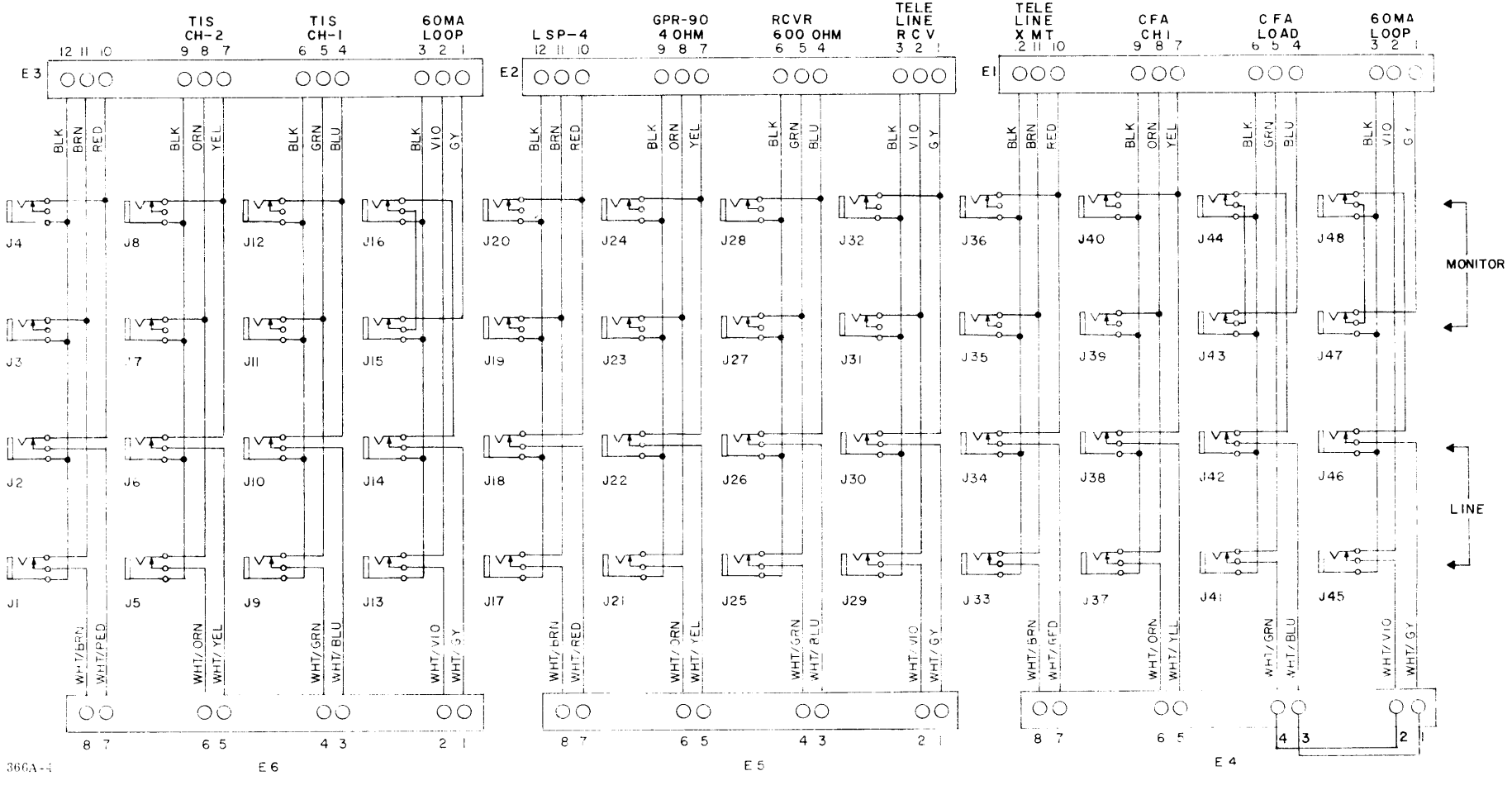


Figure E. Schematic Diagram, LPP-3-2

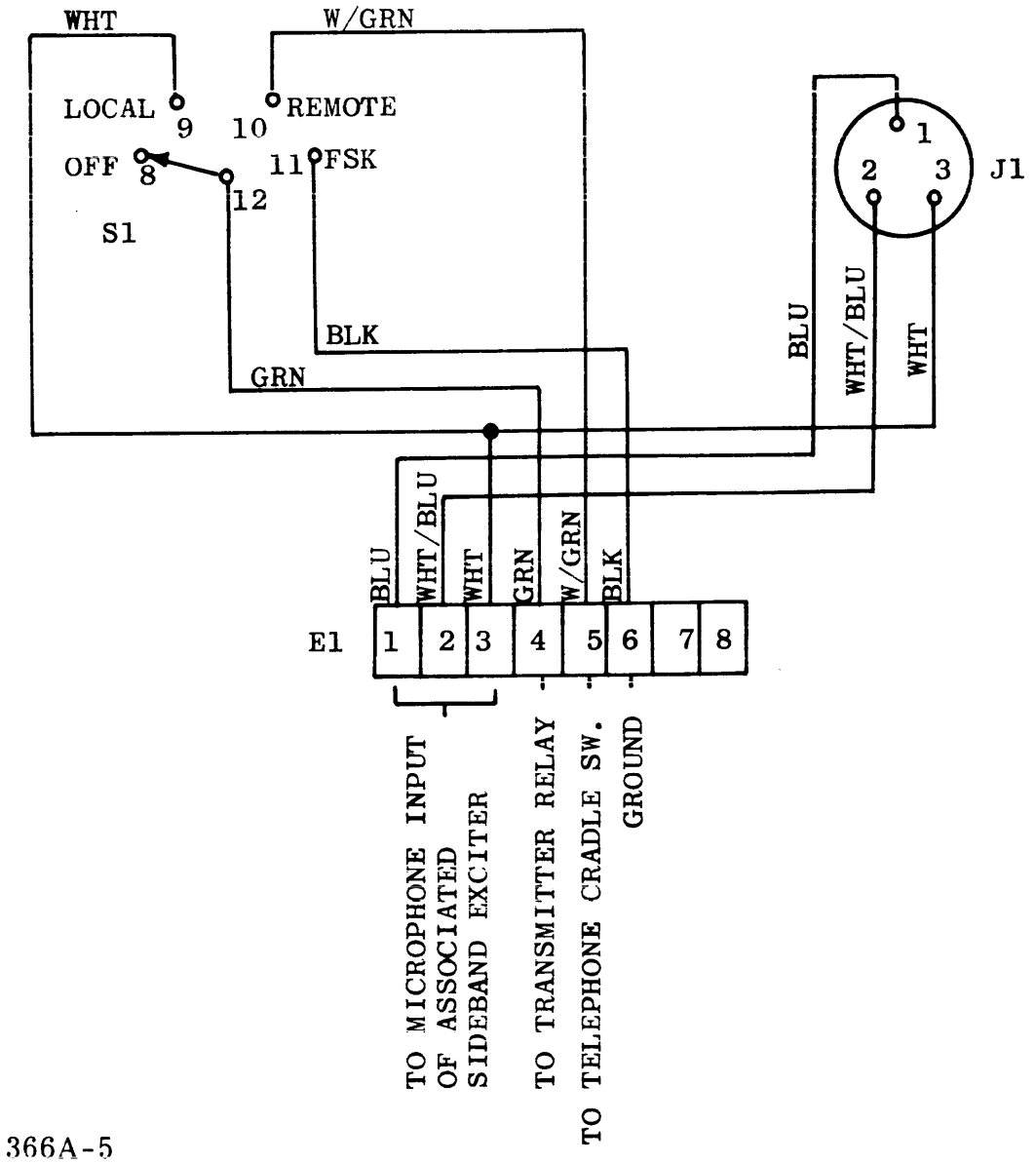


Figure F. Schematic Diagram, AX-625

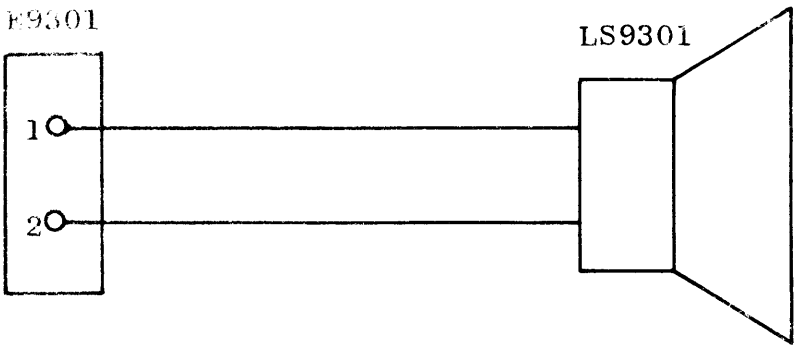
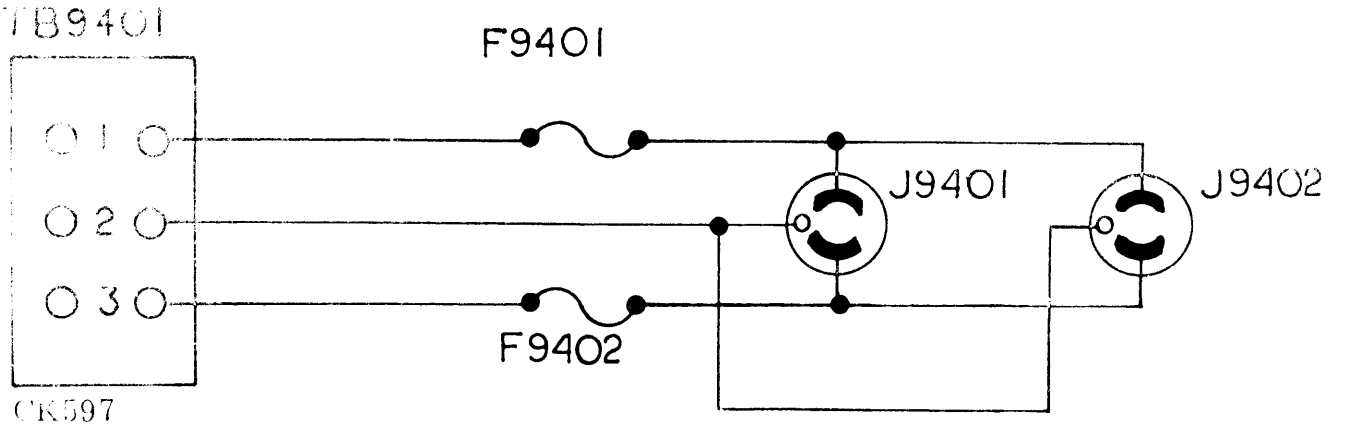


Figure G. Schematic Diagram, LSP-4



NOTE
VALUES FOR F9401 AND F9402 ARE 10A FOR 115V OPERATION AND 5A FOR 230V OPERATION

Figure H. Schematic Diagram, HPP-1

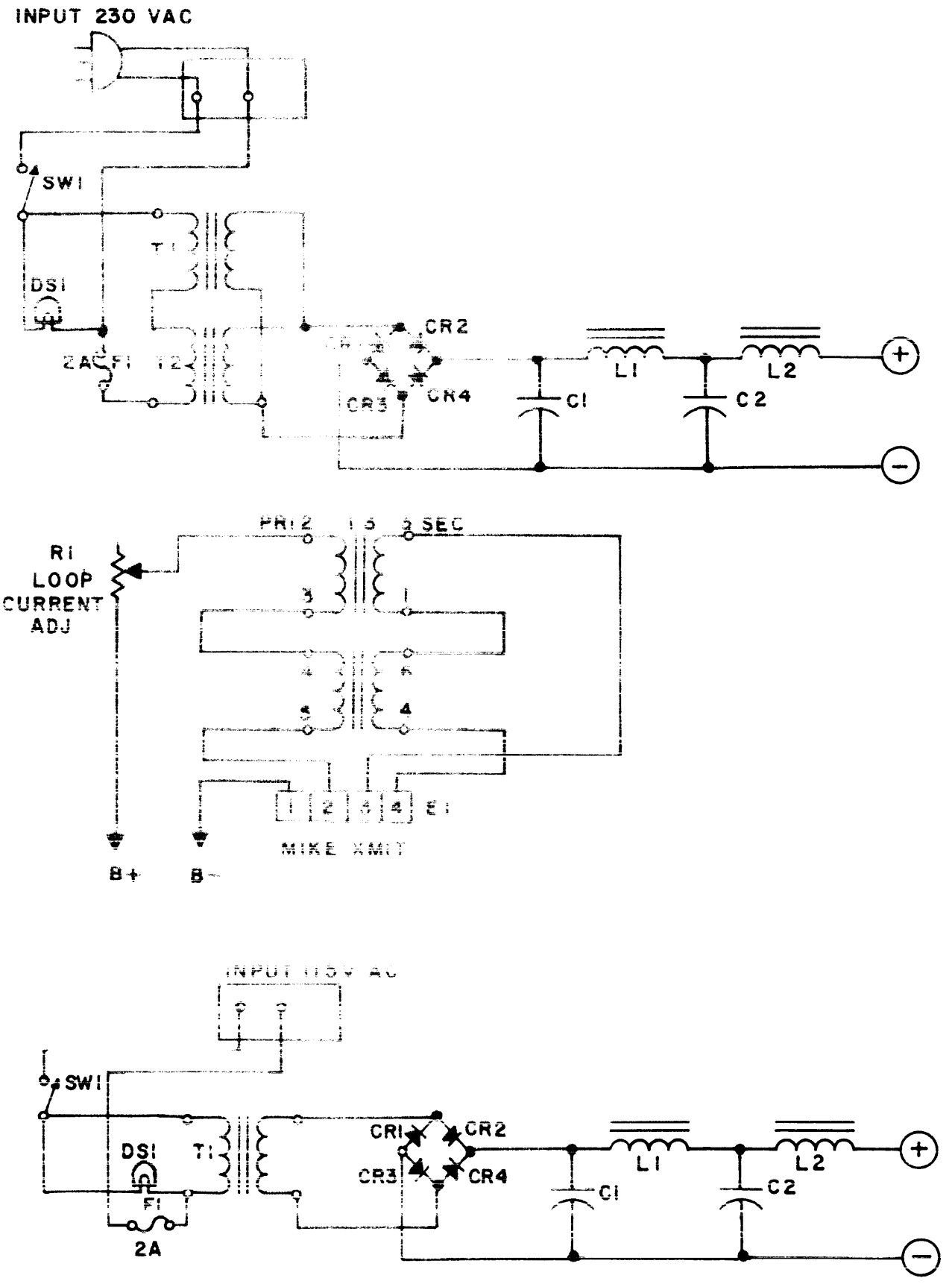


Figure 1. Schematic Diagram, AP-133/AP-134

6. PARTS LIST

The parts list presented in this section is a cross-reference list of parts identified by reference designation and TMC part number. In most cases, parts appearing on schematic diagrams are assigned reference designations in accordance with MIL-STD-16. Wherever practicable, the reference designation is marked on the equipment, close to the part it identifies. In most cases, mechanical and electro-mechanical parts have TMC part numbers stamped stamped on them.

To expedite delivery when ordering any part, specify the following:

a. Generic name.

b. Reference designation.

c. TMC part number.

d. Model and serial numbers of the equipment containing the part being replaced; this can be obtained from the equipment nameplate.

For replacement parts not covered by warranty (refer to the warranty sheet in front of manual), address all purchase orders to:

THE TECHNICAL MATERIEL CORPORATION
Attention: Sales Department
700 Fenimore Road
Mamaroneck, New York

Assembly or Subassembly — Page

PARTS LIST

ELECTRICAL EQUIPMENT, RAK-106-2
MODEL DDR-7J

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
B8501	FAN, AXIAL: ventilating; 100 CFM free delivery; impedance protected; 115 VAC, 50/60 cps, 1 phase; 14 watts; solder type terminals to accommodate plug and cord; black phenolic or die cast zinc with black finish venturi block. Part of Blower Assembly, TMC part number A2079-9.	BL106-2
B8502	Same as B8501. Part of Blower Assembly, TMC part number A2079-9.	
J8501	CONNECTOR, RECEPTACLE, ELECTRICAL: AC power, female. Part of Strip Assembly, TMC part number AX623.	JJ294-1
J8502 thru J8504	Same as J8501. Part of Strip Assembly, TMC part number AX623.	
J8505	CONNECTOR, RECEPTACLE, ELECTRICAL: AC power, male. Part of W8505.	JJ297-1
P1-1	CONNECTOR, PLUG, ELECTRICAL: AC power, female. Part of W8502.	PL100
P1-2	PLUG, TIP: cadmium plated brass shell, nickel plated brass pin, grey fiber washer. Part of W8501.	PL147-2
P1-3	CONNECTOR, PLUG, ELECTRICAL: one male pin type contact, rated for 500 V peak; bayonet polarization; twist lock, BNC crimp type. Part of W8501.	PL244-1
P2-1	NOT USED	
P2-2	NOT USED	
P2-3	CONNECTOR, PLUG, ELECTRICAL: female. Part of W8504.	MS3106A16S-5S
P3 thru P8	NOT USED	
P9-1	NOT USED	

ELECTRICAL EQUIPMENT, RAK-106-2
MODEL DDR-7J

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
P9-2	Same as P1-1. Part of W8503.	
P8501	CONNECTOR, PLUG, ELECTRICAL: AC; 3 prong male, with removeable ground connection. Part of W8502.	PL218
P8502	Same as P8501. Part of W8503.	
P8503	Same as P8501. Part of W8504.	
P8504	Same as P8501. Part of W8506. Supplied as part of Bloer Assembly, TMC part number A2079-9.	
TB1-1	TERMINAL BOARD, FANNING: 9 terminals, angle type, right end feed. Part of W8501.	TM105-9AR
TB1-2	NOT USED	
TB1-3	NOT USED	
TB1-4	TERMINAL BOARD, FANNING: 12 terminals, angle type, right end feed. Part of W8501.	TM105-12AR
TB1-5	TERMINAL BOARD, FANNING: 2 terminals, angle type, right end feed. Part of W8501.	TM105-2AR
TB2-1 thru TB2-3	NOT USED	
TB2-4	Same as TB1-4. Part of W8501.	
TB8501	TERMINAL BOARD, BARRIER: 4 terminals; 6-32 thd x 1/4" long binder head screws; phenolic body. Part of Blower Assembly, TMC part number A2079-9.	TM102-4
W8501	WIRING HARNESS, BRANCHED, ELECTRICAL: consists of various lengths and colors of MIL type MWC wire, insulation sleeving, hardware, 2 connectors P1-2, P1-3, 4 fanning strips TB1-1, TB1-4, TB1-5, TB2-4.	CA1221

ELECTRICAL EQUIPMENT, RAK-106-2
MODEL DDR-7J

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
W8502	CABLE ASSEMBLY, POWER ELECTRICAL: AC; consists of 2 conductor cable, 2 connectors P1-1, P8501.	CA605-4
W8503	Same as W8502. Consists of 2 connectors P9-2, P8502.	
W8504	CABLE ASSEMBLY, POWER ELECTRICAL: consists of 3 conductor cable, cable clip, hardware, 2 connectors P2-3, P8503.	CA723-1
W8505	WIRING HARNESS, BRANCHED, ELECTRICAL: consists of 2 power cable assemblies, 1 connector J8505.	CA1220
W8506	CABLE ASSEMBLY, POWER ELECTRICAL: AC; 3 conductor coiled cable, terminal lugs, 1 connector P8504. Supplied as part of Blower Assembly, TMC part number A2079-9.	CA575-6

LOUDSPEAKER PANEL, MODEL LSP-4

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
E9301	TERMINAL BOARD, BARRIER: two double screw terminals; 6-32 thd.; phenolic body.	TM102-2
LS9301	LOUDSPEAKER, PERMANENT MAGNET: impedance 3.2 ohms; input wattage 4.5 watts; overall dimensions 4-3/16" square x 2-1/4" deep.	LS101

UTILITY PANEL, MODEL HPP-1

F9401	FUSE, CARTRIDGE: 10 amps, 250 V; 1-1/4" lg. x 1/4" dia.; medium time lag. (For 115 V operation)	FU103-10
F9401	FUSE, CARTRIDGE: 5 amps, 250 V; 1-1/4" lg. x 1/4" dia.; medium time lag. (For 230 V operation)	FU103-5
F9402	Same as F9401. (For 115 V operation)	
F9402	Same as F9401. (For 230 V operation)	
J9401	CONNECTOR, RECEPTACLE, ELECTRICAL: 3 contacts, 2 flat, straight male contacts; 1 U-shaped male grounding contact; rated for 250 V at 10 amps or 125 V at 15 amps.	JJ173
J9402	Same as J9401.	
TB9401	TERMINAL BOARD, BARRIER: three double screw terminals; 6-32 thd.; phenolic body.	TM102-3
XF9401	FUSEHOLDER: extractor post type; for 1-1/4" lg. x 1/4" dia. fuse; neon indicator lamp and 220K ohm lamp resistor; clear octagonal lens; 100 - 250 V, 20 amps.	FH104-2
XF9402	Same as XF9401.	

MODE SELECTOR, MODEL AX-625

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
J1	CONNECTOR, RECEPTACLE, ELECTRICAL: 3 female contacts, chassis type.	JJ133-3
S1	SWITCH, ROTARY: 1 section, 4 positions, 30° angle of throw; non-shorting type contacts; mycalex insulation.	SW105
TB1	TERMINAL BOARD, BARRIER: eight double screw terminals; 6-32 thd.; phenolic body.	TM102-8

LINE PATCH PANEL, MODEL LPP-3-2

E1	TERMINAL BOARD, BARRIER: 12 terminals; 6-32 thd. x 1/4" long binder head screws; phenolic black bakelite.	TM100-12
E2	Same as E1.	
E3	Same as E1.	
E4	TERMINAL BOARD, BARRIER: 8 terminals; 6-32 thd. x 1/4" long binder head screws; phenolic black bakelite.	TM100-8
E5	Same as E4.	
E6	Same as E4.	
J1	JACK ASSEMBLY, TELEPHONE	JJ124
J2 thru J48	Same as J1.	

PARTS LIST (CONT)

POWER SUPPLY, MODEL AP-133 (48V/115V)
POWER SUPPLY, MODEL AP-134 (48V/230V)

REF SYMBOL	DESCRIPTION	MANUFACTURER	MANUFACTURER PART NUMBER
C1	CAPACITOR	Mallory	8K-55WVDC
C2	Same as C1.		
CR1	RECTIFIER, SILICON	Gates	G6S1-5
CR2 thru CR4	Same as CR1.		
DS1	PILOT LIGHT	Gates	AD10
E1	TERMINAL BOARD, BARRIER: four double screw terminals; 6-32 thd.; phenolic body.	Technical Materiel Corporation	TM102-4
F1	FUSE, CARTRIDGE	Bussman	2 AMP
L1	FILTER	Gates	GH1A
L2	Same as L1.		
R1	RESISTOR, VARIABLE, COMPOSITION: 2,500 ohms, ±10%; 25 watts; linear taper.	Technical Materiel Corporation	RA75ASA252-AK25
S1	SWITCH, TOGGLE: SPST.	Carling	FA2
T1	TRANSFORMER	Gates	GT36-2
T2	Same as T1. (Used on Model AP-134)		
T3	TRANSFORMER	Stancor	A4350