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UNCLASSIFIED

PRELIMINARY  
APPENDIX  
to  
TECHNICAL MANUAL  
for  
LF/MF RECEIVER SYSTEM



THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, N. Y.

OTTAWA, ONTARIO

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## NOTICE

THE CONTENTS AND INFORMATION CONTAINED IN THIS INSTRUCTION MANUAL IS PROPRIETARY TO THE TECHNICAL MATERIEL CORPORATION TO BE USED AS A GUIDE TO THE OPERATION AND MAINTENANCE OF THE EQUIPMENT FOR WHICH THE MANUAL IS ISSUED AND MAY NOT BE DUPLICATED EITHER IN WHOLE OR IN PART BY ANY MEANS WHATSOEVER WITHOUT THE WRITTEN CONSENT OF THE TECHNICAL MATERIEL CORPORATION.



# THE TECHNICAL MATERIEL CORPORATION

C O M M U N I C A T I O N S   E N G I N E E R S

700 FENIMORE ROAD

MAMARONECK, N. Y.

## W a r r a n t y

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



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## APPENDIX - LF/MF RECEIVER SYSTEM

### 1. INTRODUCTION

This appendix contains technical information pertaining to the electrical equipment cabinet RAK-44 used for the LF/MF receiver system.

### 2. DESCRIPTION OF EQUIPMENT

RAK-44 is a single, standard relay rack-type electrical equipment cabinet that provides an enclosure for the modular units constituting the LF/MF receiver system. Cabling for the units and line filter FL1001 are supplied with the cabinet; cable access openings with removable cover plates are located on both sides and bottom of the cabinet. RAK-44 is provided with three hinged doors: a solid door for the front lower section, a glass door for the front upper section, and a full length rear solid door (see figure 1). The cabinet acts as a shield to prevent radiation leakage. Two permanent-type washable air filters are fitted in the cabinet, one at the rear bottom and one on the roof. Line filter FL1001, mounted inside the cabinet, is a low pass filter that prevents the entry of r-f signals via the a-c power line. Refer to table 1 for mechanical and electrical characteristics.

#### NOTE

RAK-44 is shipped with Loudspeaker Panel, Model LSP, and Power Control Panel, Model DCP, installed in the cabinet. Refer to the appropriate manuals for information regarding the LSP and DCP units.



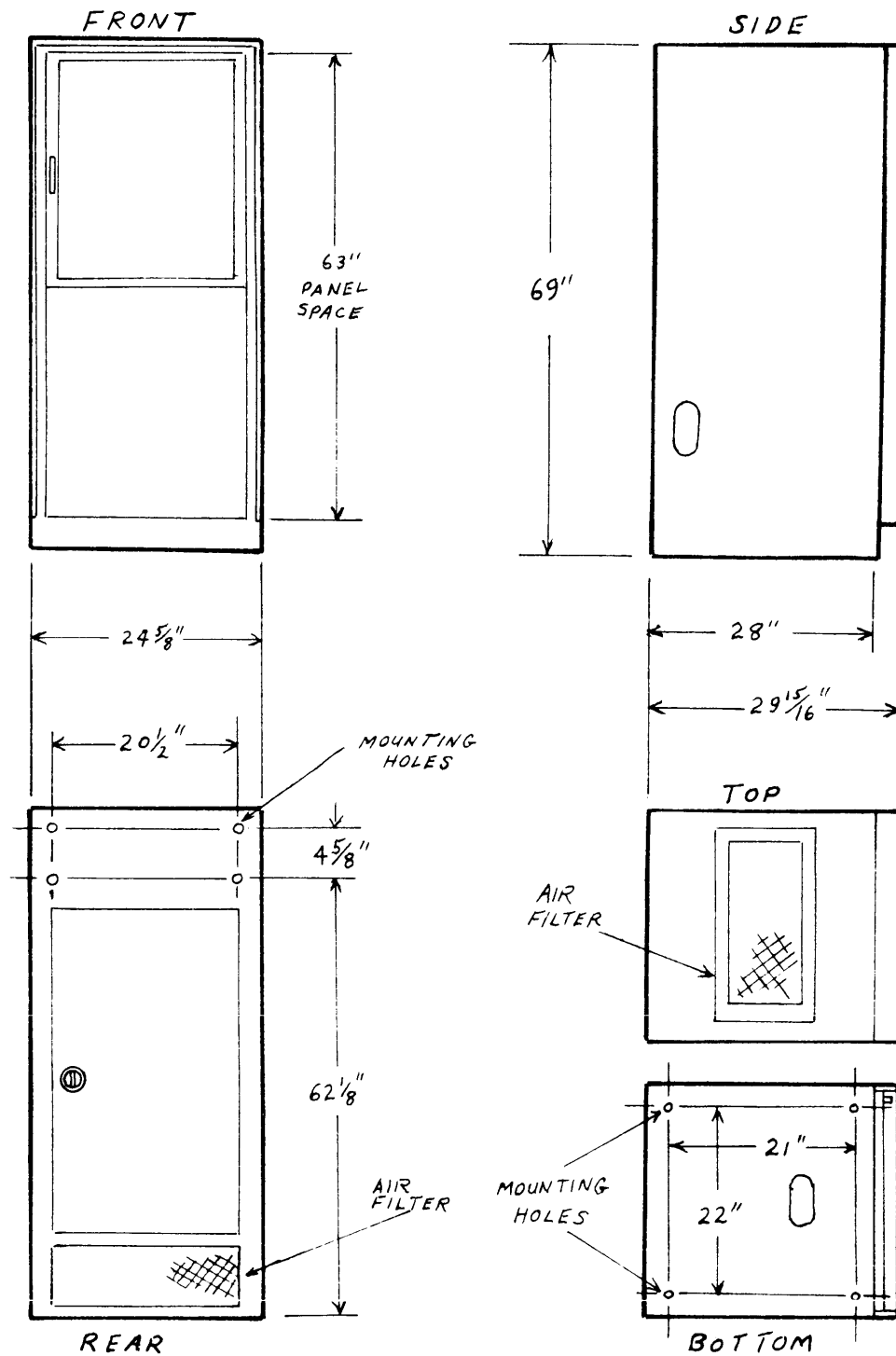


Figure 1. Dimensional Outline, RAK 44.

TABLE 1. MECHANICAL AND ELECTRICAL CHARACTERISTICS

EQUIPMENT CABINET RAK-44, with LINE FILTER FL1001	
Dimensions . . . . .	Height 69 inches Width 24 3/8 inches Depth 30 3/8 inches
Weight (including cables, slides and units normally shipped with cabinet)...	383 lbs.(approx.)
FILTER ASSEMBLY FL1001 (Part of RAK-44)	
A-C line input voltage . . . . .	115 volts at 10 amperes, or 230 volts at 5 amperes
Bandpass . . . . .	50 to 400 cps
Attenuation . . . . .	70 db at 5000 cps
Impedance . . . . .	72 ohms
Dimensions . . . . .	Height 5 1/2 inches Width 20 inches Depth 3 1/2 inches
Weight . . . . .	12 lbs. (approx.)

### 3. INSTALLATION

The equipment is inspected and tested at the factory, and is carefully packaged to prevent damage during shipment. Upon delivery at the operating site, unpack and inspect the equipment for possible damage that might have occurred during transit. Inspect all packing material for parts that 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 furnishing of replacement parts.

a. MECHANICAL INSTALLATION. RAK-44 is shipped with loudspeaker panel LSP, power control panel DCP, and blank panels mounted. The cabinet should be positioned to allow opening of front and rear doors (approximately two-foot clearances are needed front and rear). The cabinet may be mounted on the floor, or on wood or metal stringers. Four 23/32 inch holes in the base of the cabinet are provided to facilitate anchoring; four 5/16 inch holes in the upper rear wall of the cabinet facilitate additional bracing. (refer to figure 1.)

b. ELECTRICAL INSTALLATION. For a-c power connection, refer to installation section of DCP Technical Manual. For antenna input and audio output connections, refer to installation section of LRRRA System Manual.

P A R T S   L I S T

CABINET, ELECTRICAL EQUIPMENT

Model LRRA-1

FL1001	FILTER ASSEMBLY: radio interference; input voltage rated at 115 VAC at 10 amps or 230 VAC at 5 amps, bandpass power frequency 50-400 cps, attenuation- 70 db at 5,000 cps, min. impedance 22 ohms; supplied with conduit fittings and plug button.	A3730
J1	ADAPTER, CONNECTOR: RF type; 1 female coaxial contact; straight type; series QDS to BNC.	JJ213
MP1001	FILTER, AIR CONDITIONING: replaceable type, medium filtering, steel mesh, steel frame; 640 cfm capacity; o/a dim. 16-7/8" x 7-5/8" x 1/2".	AD103-5
MP1002	RETRACTING ASSEMBLY, SPRING: module.	A3715
MP1003 thru MP1006	Same as MP1002.	
P1005	CONNECTOR, PLUG, ELECTRICAL: 4 number 16 male contacts; straight type. Used on Cable, W1001.	MS3106A14S-2P
P1006	CONNECTOR, PLUG, ELECTRICAL: 6 number 16 male contacts; straight type. Used on Cable, W1001.	
P110-1	NOT USED	
P110-2	CONNECTOR, PLUG, ELECTRICAL: accommodates RG174/U coaxial cable; one male pin type contact rated at 500 volts peak; bayonet polarization; twist lock; 50 ohms nom. impedance; BNC crimp type. Used on Cable W1001.	PL244-1
P111-1	CONNECTOR, PLUG, ELECTRICAL: 3 number 16 female contacts; straight type. Used on Cable, W1002.	MS3106A14S-1S
P111-2	Same as P110-2. Used on Cable, W1001.	
P112-1	CONNECTOR, PLUG, ELECTRICAL: 4 number 16 female contacts; straight type. Used on Cable, W1001.	MS3106A14S-2S
P112-2	Same as P110-2. Used on Cable, W1001.	
P113-1	Same as P110-2. Used on Cable, W1001.	
P113-2	Same as P111-1. Used on Cable, W1004.	
P114-1	Same as P110-2. Used on Cable, W1001.	
P114-2	Same as P112-1. Used on Cable, W1001.	
P115	Same as P110-2. Used on Cable, W1001.	
P116	Same as P110-2. Used on Cable, W1001.	
P118	Same as P110-2 Used on Cable, W1001.	
P122	Same as P110-2. Used on Cable, W1001	
P451	Same as P111-1 Used on Cable, W1003	
P452	Same as P110-2. Used on Cable, W1001.	

P453	Same as P110-2. Used on Cable, W1001.	
P454	Same as P110-2. Used on Cable, W1001.	
P455	Same as P110-2. Used on Cable, W1001.	
P456	Same as P112-1. Used on Cable, W1001.	
P484	Same as P110-2. Used on Cable, W1001.	
P903-1	CONNECTOR, PLUG, ELECTRICAL: RF type; 1 round male coaxial contact; straight type; series BNC to BNC. Used on Cable, W1007.	UG260/U
P903-2	CONNECTOR, PLUG, ELECTRICAL: RF type; 1 round male contact; straight type; series BNC to BNC. Used on Cable, W1007.	PI243
P903-3	Same as P903-2. Used on Cable, W1007.	
P903-4	Same as P110-2. Used on Cable, W1001.	
P904	Same as P110-2. Used on Cable, W1001.	
P910	Same as P111-1. Used on Cable, W1005.	
P911	Same as P112-1. Used on Cable, W1001.	
P913	Same as P110-2. Used on Cable, W1001.	
TB1001	TERMINAL BOARD, BARRIER: 12 terminals; 6-32 thd. x 1/4" long binder head screws; phenolic black bakelite. Used on Cable, W1001.	TM100-12
TB101-1	NOT USED	
TB101-2	TERMINAL BOARD, FANNING: 14 terminals; angle type, right end feed. Used on Cable, W1001.	TM105-14AR
TB1501	TERMINAL BOARD, FANNING: 3 terminals; angle type, right end feed. Used on Cable, W1001.	TM105-3AR
W1001	WIRING HARNESS, BRANCHED, ELECTRICAL: consists of various lengths and colors of MWC and RG174/U wires; insulation sleeving; hardware; 23 connectors, P1005, P1006, P110-2, P111-2, P112-1, P112-2, P113-1, P114-1, P114-2, P115, P116, P118, P122, P452, P453, P454, P455, P456, P484, P903-4, P904, P911, P913, 2 terminal boards, TB101-2, TB1501; cable assemblies, W1002, W1003, W1004, W1005.	CA931
W1002	CABLE ASSEMBLY, AC POWER: consists of 98" lengths of insulated wire rubber covered; 1 connector, P111-1 and terminal lugs. Part of W1001.	CA907-5
W1003	Same as W1002. Consists of 1 connector, P451. Part of W1001.	
W1004	CABLE ASSEMBLY, AC POWER: consists of 111" lengths of insulated wire rubber covered; 1 connector, P113-2 and terminal lugs. Part of W1001.	CA907-3
W1005	Same as W1004. Consists of 1 connector, P910. Part of W1001	
W1006	CABLE ASSEMBLY, AC POWER: consists of 52" lengths of insulated wire rubber covered and various insulated terminal lugs.	CA795-5

W1007

CABLE ASSEMBLY, RADIO FREQUENCY: consists of RG174/U coaxial cable; insulation sleeving and 3 connectors P903-1, P903-2, P903-3.

CA864