NOTE
ILLUSTRATIONS ARE
KEYED WITH TMC
IDENTIFICATION NUMBERS

UNCLASSIFIED

INSTALLATION MANUAL

for

GENERAL PURPOSE TRANSMITTER

MODEL GPT-40KE4

AN/FRT-40C

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N.Y. OTTAWA, ONTARIO

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1 JUL 1964

NOTICE

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

Addendum

for

General Purpose Transmitter

Model GPT-40KEA4

The GPT-40KEA4 transmitter is similar to the synthesized GPT-40KE4 transmitter with the following modifications:

a. The auxiliary frame is wired to accommodate either Tone Intelligence Unit TIS or Transmitter Keyer-Monitor-Control Unit KMCU. The GPT-40K installation manual is written to accommodate the TIS. Unless your transmitter is equipped with Tone Intelligence Unit TIS, all reference to the TIS should be disregarded. Also, figure 3-4 of the installation manual should be replaced with the cabling diagram provided with this addendum.

b. Auxiliary Power Panel APP-8 is replaced by Auxiliary Power Panel APP-10. Figures 1-1 and 1-2 of the installation manual should be changed to include the APP-10.

c. Frequency Amplifier CHG-2A, RF Oscillator CSS-1B, and RF Amplifier RFC-1 are replaced by the CHG-2B, CSS-1C, and RFC-1A respectively. All references to any of these units should be changed accordingly.

RECORD OF CORRECTIONS MADE

Change No.	Date of Change	Date Entered	Entered By

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INTRODUCTION

This manual presents information for installing a TMC Model GPT-40KE4 General Purpose Transmitter (synthesized), commonly called the 40K transmitter. The manual is subdivided into three chapters: General Information, Installation, and Circuit Diagrams. If further information on the 40K transmitter is required, refer to the operation and maintenance manuals.

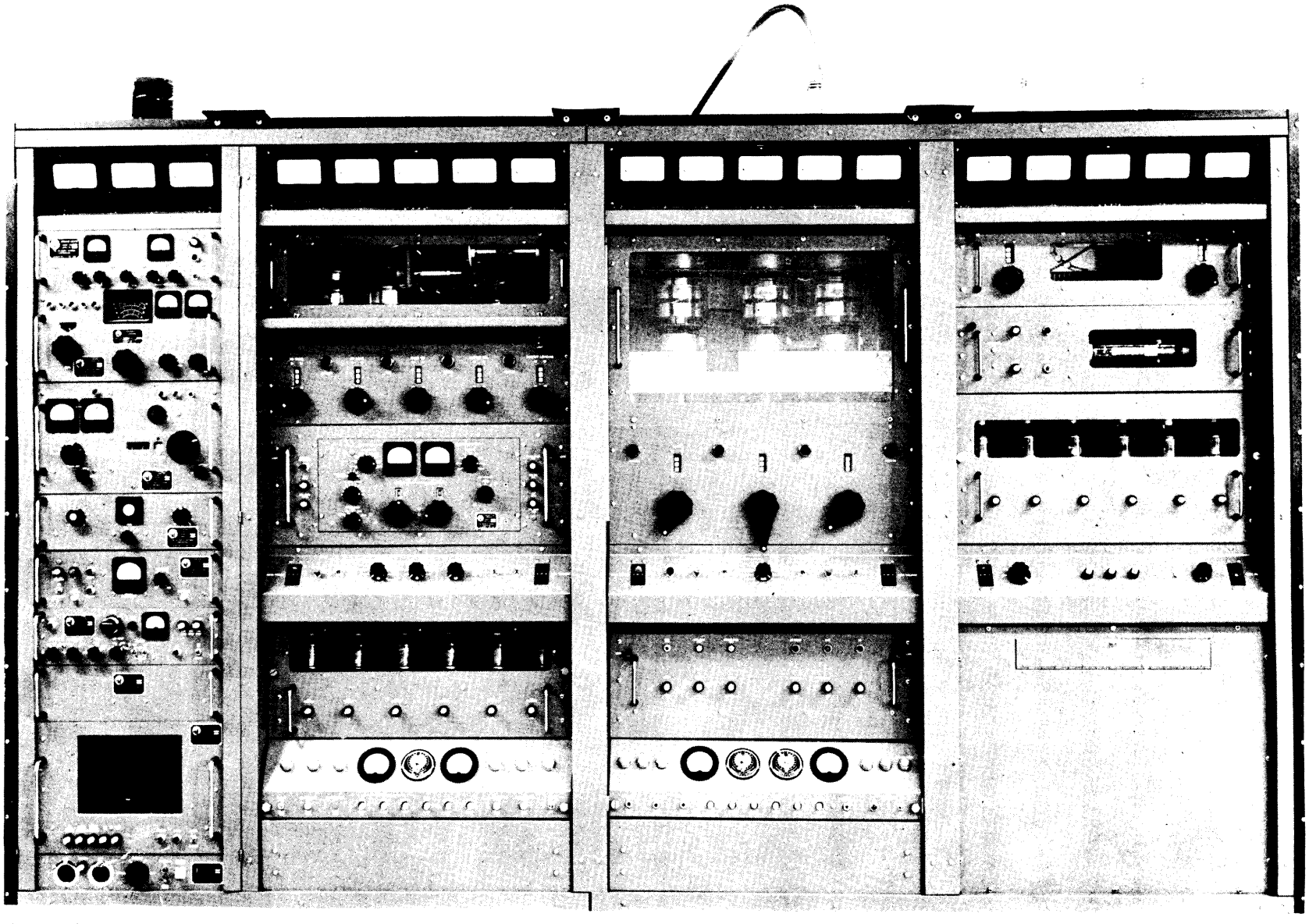

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Figure 1-1. TMC Model GPT-40KE4 General Purpose Transmitter (Synthesized).

CHAPTER 1

GENERAL INFORMATION

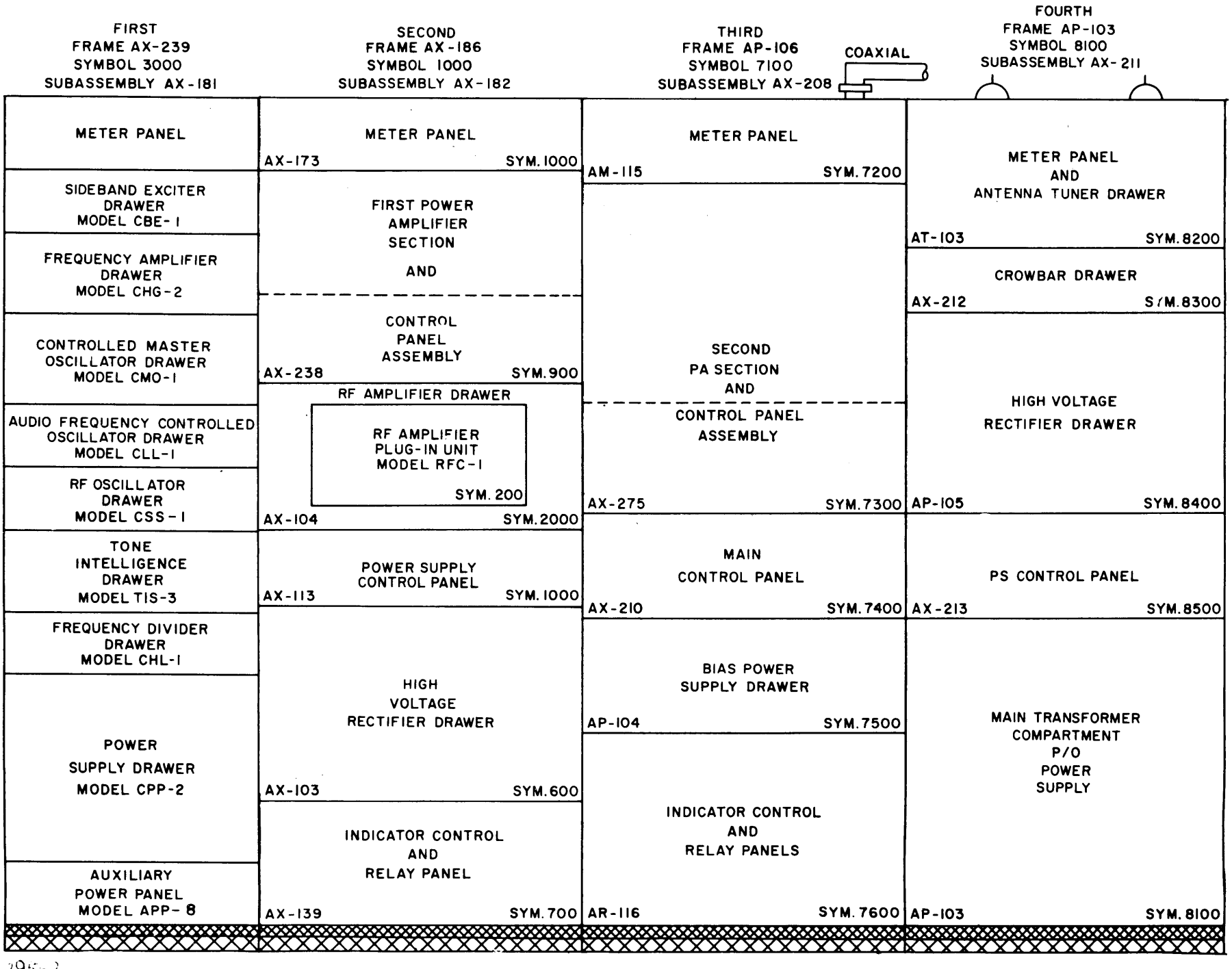
1-1. SCOPE.

This chapter presents general information concerning purpose and description of the 40K transmitter. Included in this information are leading particulars, capabilities and limitations, equipment supplied, equipment required but not supplied, and associated manuals.

1-2. PURPOSE AND DESCRIPTION.

The 40K transmitter, figure 1-1, is a general purpose synthesized transmitter having several modes of operation (SSB, ISB, AM, AM equivalent, CW, FSK, and FAX) in a frequency range of 2 to 28 megacycles. The 40K transmitter can be subdivided into three stages, namely: (1) A TMC-10K transmitter whose output is 10 kilowatts (kw) peak envelop power (PEP) which is modified to drive stage two; (2) A 40kw power amplifier and power supply whose output is 40kw PEP.

The two stages are physically housed in four mechanical frame assemblies. Each can be conveniently identified, figure 1-2 (from left to right), as the first, second, third, and fourth frames. The first frame is the exciter. The second frame is the 10kw power amplifier. The third frame is the 40kw power amplifier. The fourth frame is the 40kw power supply. However, for purposes of simplication, each frame assembly will be herein referred to as the first frame, second frame, third frame, or fourth frame, as applicable.



295-2

Figure 1-2. General Component Identification (sheet 1 of 2).

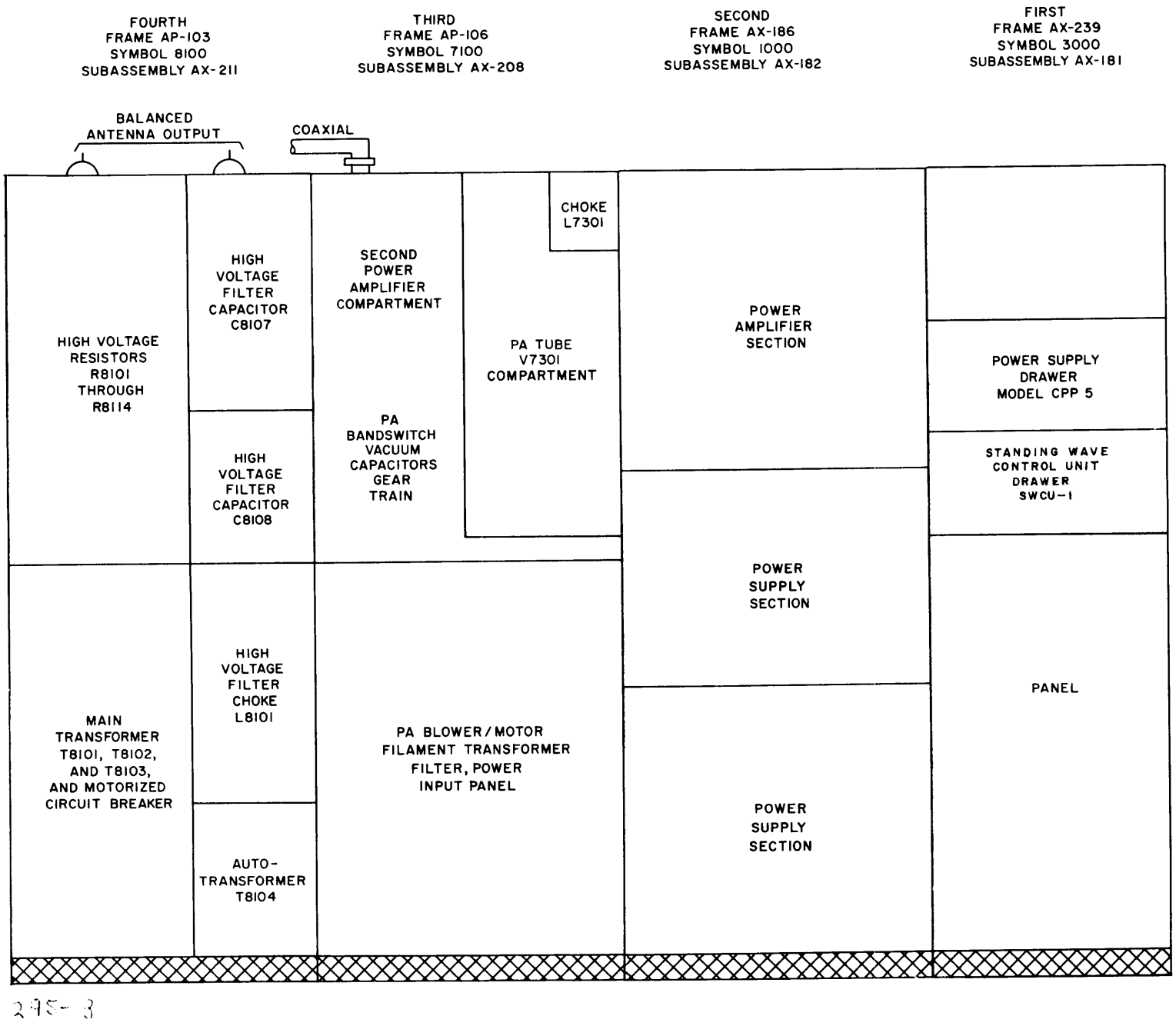


Figure 1-2. General Component Identification (sheet 2 of 2).

A more detailed subdivision of the transmitter is made by assigning formal nomenclature and part numbers to assemblies, subassemblies, components, and piece-parts. In addition to formal nomenclature and part numbers, common names are used and simplified reference symbol numbers are assigned. For example, the fourth frame and assemblies contained, figure 1-2, are assigned simplified symbol numbers in the 8100 to 8500 numerical series; so that high voltage rectifier tube V8401 is installed in the high voltage rectifier drawer 8400 which is then installed in the fourth frame 8100.

1-3. LEADING PARTICULARS.

Table 1-1 lists logistic type leading particulars of the 40k transmitter. Characteristics listed cover primary power, overall equipment dimensions, gross weight, and air cooling.

Table 1-1. Leading Particulars

NOMENCLATURE		POWER REQUIREMENTS					DIMENSIONS IN INCHES			WEIGHT IN LB	FORCED AIR COOLING REQUIREMENTS	
FORMAL	COMMON	VOLTS	AMP	W	PH	FREQ IN CPS	HGT	W	D		CFM	BP IN INCHES OF WATER
General Purpose Transmitter GPT-40KE4	40K Transmitter	230	225/PH	74K	3	50-60	90				10k	10.25
Cabinet, Electrical Equipment	First Frame	115			1	50-60	72	21	38-5/8	385		
Sideband Exciter Drawer Model CBE-1	Sideband exciter drawer	115			1	50-60	5-1/4	19	12-7/8	17		
Frequency Amplifier Drawer Model CHG-2A	Frequency amplifier drawer	a					10-1/2	19	19-1/4	40		
Controlled Master Oscillator Drawer Model CMO-1	Controlled master oscillator drawer	b					10-1/2	19	18	45		
Audio Frequency Controlled Oscillator Drawer Model CLL-1	Audio frequency controlled oscillator drawer	c					5-1/4	19	19	25		
RF Oscillator Drawer Model CSS-1B	Rf oscillator drawer	115		30-50	1	50-60	5-1/4	19	14-3/4	30		
Tone Intelligence Drawer Model TIS-3	Tone intelligence drawer	115	1	100	1	50-60	5-1/4	19	17-1/8	26		
Frequency Divider Drawer Model CHL-1	Frequency divider drawer	d					5-1/4	19	15	20		
Power Supply Drawer Model CPP-2	Power supply drawer	115		1k	1	50-60	12-1/4	19	16	67		
Auxiliary Power Panel Model APP-8	Auxiliary power panel						3-1/2	19	4	10		
Power Supply Drawer Model CPP-5	Power supply drawer	115			1		5-1/4	19	16-1/2	50		
Standing Wave Control Unit Model SWCU-1	Standing wave control unit drawer	115			1	50-60	3-1/2	19		15		

a. +150 vdc (regulated). +200 vdc (unregulated). 6.3 vac.
b. +160 and -6 vdc, and 6.3 vac (regulated). +380 vdc and 115 vac (unregulated).
c. +160, -75, and -6 vdc, and 6.3 vac (regulated). -400 and +380vdc, and 115 vac (unregulated).
d. +160 and -6 vdc, and 6.3 vac (unregulated)

Table 1-1. Leading Particulars (cont)

NOMENCLATURE		POWER REQUIREMENTS					DIMENSIONS IN INCHES			WEIGHT IN LB	FORCED AIR COOLING REQUIREMENTS	
FORMAL	COMMON	VOLTS	AMP	W	PH	FREQ IN CPS	HGT	W	D		CFM	BP IN INCHES OF WATER
Cabinet, Electrical	Second frame	230			3	50-60	72	32	33-5/8	835[e]		
Rf Amplifier drawer, with:	Rf amplifier drawer	230			3	50-60	11-3/4	28-3/4	20-1/2	100		
Rf Amplifier Plug-In Unit Model RFC-1	Rfc drawer	f										
High Voltage Rectifier Drawer	HVR drawer	3400			3	50-60	10-3/4	28-3/4	16-3/4	80		
Cabinet, Electrical Equipment	Third frame	230	3		3	50-60	73-1/2	32-1/8	38-5/8	650		
Bias Power Supply Drawer	Bias power supply drawer							28-3/4	10-3/4	75		
Cabinet, Electrical Equipment	Fourth frame	230			3	50-60	74	33	39	712		
Meter Panel and Antenna Tuner Drawer	Antenna tuner drawer						14-3/4	28-3/4	21	86		
Crowbar Drawer	Crowbar drawer						8	28-3/4	17-1/4	40		
High Voltage Rectifier Drawer	HVR drawer	5200			3	50-60	14	28-3/4	18-3/4	111		

e. Weight as shipped.
f. +400, +200, -150, and -100 dc. 230 vac, 3Ø, 50-60 cps 12 and 6.3 vac.

1-4. CAPABILITIES AND LIMITATIONS.

Table 1-2 lists operational type capabilities and limitations of the 40k transmitter. Data presented covers functional and environmental characteristics.

Table 1-2. Capabilities and Limitations

CAPABILITIES	LIMITATIONS
Functional Characteristics:	
Frequency range	2 to 28 megacycles.
Modes of operation	SSB, ISB, AM, AM equivalent, CW, FSK, and FAX.
Output power:	
Normal	40,000 watts peak envelop power (PEP).
Emergency	1,000 watts.
Output Impedance:	Pi-L network matches load with voltage standing wave ratio (VSWR) of 2:1 maximum.
Unbalanced	50 or 70 ohms.
Balanced	600 ohms.
Tuning	Synthesized frequency control with 100 cycles per second (cps) incremental front panel tuning through the entire frequency range.
Stability and accuracy	1 part in 10^8 per day for ambient temperature change of 15°C (59°F) within the range of 0° to 50°C (32° to 122°F).
Unwanted sideband rejection	500 cps single tone 60 db down from full PEP output.

Table 1-2. Capabilities and Limitations (cont)

CAPABILITIES	LIMITATIONS
Spurious signals	At least 60 db below full PEP output.
Carrier insertion	-55 db to full PEP output.
Audio response	CBE-1 crystal lattice filters flat within ±1.5 db 350 to 7500 cps.
Audio inputs	600 ohms balanced -20 to +10 dbm continuously adjustable to full PEP output. An unbalanced input can also be applied.
Heat dissipation	40 kw (maximum).
Keying:	
FSK	75 bauds (100 wpm) maximum 50v, 100v, 20ma, 60ma, all neutral, floating, or either side grounded. 12 to 1,000 cps shift.
CW	140 bauds maximum. Keying voltages same as FSK plus dry contact keying. -5 to +5vdc or 0 to +20vdc for linear shift of 12,000 cycles.
Environmental characteristics:	
Ambient operating temperature	Between 0°and 50°C (32° and 122°F).
Humidity	Maximum 90%.
Volume of air:	
Intake	7,350 CFM (est)
Exhaust	6,615 CFM (est)
Intake and exhaust openings:	
Intake	Three 12"x 26"
Exhaust	Two 14"x 24", three 13-7/8" x 28-7/8", and one 10-1/2"x 23-1/2"

Table 1-2. Capabilities and Limitations (cont)

CAPABILITIES	LIMITATIONS
Heat loss unducted:	
Standby	30.0kw (approximately)
Full power condition	42.0kw (approximately)
Temperature Rise:	
Standby	$15^{o}C$ ($59^{o}F$)
Full power condition	25^{o} to $30^{o}C$ (77^{o} to $86^{o}F$)

1-5. EQUIPMENT SUPPLIED.

Table 1-3 lists all major equipment supplied by crate number, contents, quantity, TMC part numbers, and reference symbol designations. Also a brief function of each item is provided. Subassemblies of assemblies presented are not callout; identification of subassemblies can be obtained by referring to the applicable operations and maintenance manuals. Spare parts are not included in the table.

Table 1-3. Equipment Supplied

CRATE NO.	CONTENTS	QTY	DESIGNATIONS		FUNCTION
			TMC P/N	SYM	
1	1. Bag 1:				Base to base mounting hardware (hdwr)
	Screw, Machine, Hex-head	3	SCHH3716SS/6		
	Washer, Lock	3	LWS37MRN		
	Washer, Flat	3	FW37HBN		
	2. Bag 2:				Ground strap mounting hdwr
	Screw, Machine, Hex-head	1	SCHH6211BN24		
	Washer, Lock	4	LWS62MRN		
	Washer, Flat	9	FW62HBN		
	Nut, Hexhead	3	NTH6211BN32		
	3. Bag 3:				First and second frame to base mounting hdwr
	Screw, Machine, Hex-head	10	SCHH3716SS24		
	Washer, Lock	10	LWS37MRN		
	Washer, Flat	10	FW37HBN		
	4. Bag 4:				Line filterboard mounting hdwr
	Screw, Machine, Binderhead	4	SCBP1032BN6		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATIONS		FUNCTION
			TMC P/N	SYM	
1 (cont)	4. (cont)				
	Screw, Machine, Binderhead	4	SCBP1032BN12		
	Screw, Machine, Binderhead	1	SCBP1032BN9		
	Screw, Machine, Binderhead	1	SCBP1032BN10		
	Washer, Flat	10	FW10MRN		
	Washer, External	10	LWE10MRN		
	Nut, Hexhead	4	NTH1032BN12		
	5. Bag 5:				Third and fourth frame to base mounting hdwr
	Screw, Machine, Hexhead	13	SCHH3716SS24		
	Washer, Lock	13	LWS37MRN		
	Washer, Flat	13	FW37HBN		

TABLE 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATIONS		FUNCTION
			TMC P/N	SYM	
1 (cont)	6. Bag 6:				Frame to frame mounting hdwr
	Screw, Machine, Hex-head	30	SCHH3118SN16		
	Washer, Lock	30	LWS1MRN		
	Washer, Flat	30	FW31HBN		
	7. Bag 7:				Transformers T800 to frame mounting hdwr
	Screw, Machine, Hex-head	4	SCHH5013SS48		
	Washer, Lock	4	LWS50HBN		
	Washer, Flat	4	FW50MRN		
	8. Bag 8:				Transformers T801, T802, and T803 to frame mounting hdwr
	Screw, Machine, Hex-head	12	SCHH2520BN8		
	Washer, Lock	12	LWS25MRN		
	Washer, Flat	12	FW25HBN		
	9. Bag 9:				Drawer to frame mounting hdwr
	Screw, Machine, Binderhead	44	SCBP1032BN8		
	Washer, Fiber	44	WA-101-5		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATIONS		FUNCTION
			TMC P/N	SYM	
1 (cont)	10. Bag 10:				Door latch plates and brackets to frame mounting hdwr
	Screw, Machine, Binderhead	24	SCBP1032BN10		
	Screw, Flat	24	SCFP1032BN8		
	Washer, Lock External	24	LWE10MRN		
	Washer, Lock	24	LWS10MRN		
	Washer, Flat	24	FW10HBN		
	Washer, Flat	24	FW25HBN		
	Nut, Hexhead	24	NTH1032BN12		
	11. Bag 11:				Rear door hinges to frame mounting hdwr
	Screw, Machine, Hexhead	12	SCHH2520BN8		
	Washer, Lock	12	LWS25MRN		
	Washer, Flat	12	FW25HBN		
	12. Bag 12:				Trim strips to frame mounting hdwr
	Screw, Machine, Binderhead	67	SCBP0832BN6		
	Nut, Speed	32	NT-108-5		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATIONS		FUNCTION
			TMC P/N	SYM	
1 (cont)	13. Bag 12:				Side panels to frame mounting hdwr
	Screw, Machine, Hexhead	20	SCHH3118SS24		
	Washer, Lock	20	LWS31MRN		
	Washer, Flat	20	FW31HBN		
	14. Bag 14:				Cover top to frame mounting hdwr
	Screw, Machine, Hexhead	22	SCHH2520SS24		
	Washer, Lock	22	LWS25MRN		
	Washer, Flat	22	FW25HBN		
	15. Line Filterboard	1	A-3479		Filter ac input line voltage
	16. Line Filterboard				Brackets for mounting cover
	Bracket, Cover Support	2	MS-3689		
	17. Cover, Line Filterboard	1	LD-1392		Safety Cover

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATIONS TMC/PN	DESIGNATIONS SYM	FUNCTION
1 (cont)	18. Manuals, Technical	1 set			
	19. Data, Test	1 set			
	20. Eitel McCulloch Warranty	1			Warranty for tube TMC P/N 4CX5000A
	21. Machlett Tube (ML-6697) Warranty	1			Warranty for tube V7301
	22. Penta Laboratory Warranty	1			Warranty for Tube TMC P/N TV-100
	23. Sola Voltage Regulator	1			Warranty for voltage regulator
	24. Straps, Gounding				Ground first and second frames
		2	MS-1753-2-18		
		2	MS-1753-2-30		
	25. Resistors, Fixed				High wattage power supply bleeder resistors, rear second frame
		8	RW-118F-183	R802 thru R809	
		3	RW11-118F-502	R816,R819, R820	
		2	RW-1196-181	R812,R813	
		2	RW-12 3-604	R814,R815	
		2	RW-122-1-405	R810,R811	

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
1 (cont)	26. Capacitor, Variable				
	with PO-185-1 and MS-1696	1	AM-103	C916	Output balance, second frame
		1	AM-113	C927	Tuning second frame
	with PO-185-6 and MS-2368	1	AM-114	C928	Load second frame
	27. Tube, Electron				
		1	TV-100	V203	Output tube, second frame
		6	872-A	V600 thru V605	H.V. rectifier, second frame
		1	4CX5000A	V900	PA tube, second frame
	28. Lamp Socket Assembly, High Voltage	1	AX-124		H.V. indicator, top first frame
	and Lamp	1	BI-106-1	I300	Lamp for indicator
	29. Plugs, Electrical	1	PL-134		Female plug for customer use in connecting to convenience ac outlet jack, bottom front panel, first frame
		2	PL-149		Universal connector plug for customer use, in connecting to jack J904, top second frame
		1	PL-157		Connector plugs for customer use in connecting to MONITOR OUTPUT jack, bottom front panel, first frame
		2	PL-218		Male plug for customer use in making an extension cord in conjunction with plug PL-134

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
1 (cont)	30. Hinges, Rear Door				Rear door hinges, third frame
		3	MS-2041		
		3	MS-2042		
	31. Door Latch Plates:				Securing doors to first through fourth frames
	Bottom Front and Rear	6	MS-2122		
	Top Front and Rear	6	MS-1660		
	32. Door Latch Brackets				Same as item 31
	Top, Front, and Rear	6	MS-1661		
		6	MS-2123		
	33. Plugs, Button:				Dress side panels and covers
	1/2 inch	8	HB-101-3		
	7/8 inch	48	HB-101-6		
	34. Cable, Emergency Output	1	CA-582-1		Emergency output cable
	Cable, Interconnect	1	CA-615		Ac input power buss connects between power distribution terminal board on inside rear of base for third and fourth frames and terminal board in bottom rear of second frame
	35. Wrenches, Allen:				Special installation tools
		1	WR-100-12		
		1	WR-100-20		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
2	1. Capacitors:	3	CB-160	C7330, C7331, and C7332	Tune and load, third frame
		3	CO-106-1000-30C	C7325 and C7328, and C8207	Fixed capacitors in PA, third frame Antenna tuning, fourth frame
		1	CX-103	C7316	Fixed capacitor in PA circuit, third frame
		1	CO-107-6-30C	C7326	Same as above
	2. Choke	1	CL-271	L7312	Choke in PA circuit, third frame
	3. Connector	1	JJ-137	J902	
	4. Contact Assembly	2	AX-223	E8115 and E8116	Threaded metal rods for bowl assemblies, top fourth frame
	5. Insulators:	1	NS-128	E8114	Insulated electrical feed throughs
		1	NS-107	E7304	

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
2 (cont)	6. Resistors	1	RW-119GIRO	R8101	Power supply circuit, fourth frame
		10	RW-118F183	R8102 thru R8111	
		6	RW-118F5RO	R8112 thru R8114 and	
		2		R8301 thru R8303	
	7. Tubes, Electron	1	7568	V8301	Crowbar drawer circuit, fourth frame
		6	6895	V8401 thru V8406	H V R drawer circuit, fourth frame
3	Mounting Base Assembly, with shield and access doors	1			Metal structure that can be bolted to floor and, first and second frames are bolted on
4	Mounting Base Assembly, with shield and access doors	1			Metal structure that can be bolted to floor and, third and fourth frames are bolted on

Table 1-3. Equipment Supplied (cont)

CRATE No.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
5	First Frame Assembly, with:	1	AX-239	3000	Metal cabinet that houses electrical equipment
	Meter Panel Assembly	1			Equipment status indicators, top first frame
	Power Distribution panel	1	Model APP-8 Ser. No. 6275		
	Standing Wave Control Unit Drawer	1	Model SW-CU-1		
6	Second Frame Assembly, with:	1	AX-186	1000	Metal cabinet that houses electrical equipment
	Power Amplifier	1	AX-238		Power amplifier
	Main Power Panel	1			
	Relay Panel	1	AX-139	700	Indicator control and relay panel
7	Third Frame Assembly, with:	1	AP-106	7100	Metal cabinet that houses electrical equipment
	Power Amplifier Control, Front Panel and Power Amplifier Section	1	AX-275	7300	
	Panel Main Control	1	AX-210	7400	Main control panel
	Relay Panel	1	AR-116	7600	Indicator control and relay panel

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
8	Fourth Frame Assembly, with:	1	AP-103	8100	Metal cabinet that houses electrical equipment
	Power Supply Control Panel	1	AX-213	8500	Power supply control panel
	Spare Fuse Panel	1	MS-2095		
9	Power Transformer	1	TF-203	T800	Power transformer, second frame
10	Power Transformer	1	TF-211	T8101	Power transformer, fourth frame
11	Power Transformer	1	TF-211	T8102	Power transformer, fourth frame
12	Power Transformer	1	TF-211	T8103	Power transformer, fourth frame
13	Power Transformer	1	TF-215	T7101	Power transformer, fourth frame
14	Power Transformer	1	TF-5016	L8101	Filter in power supply circuit, fourth frame
15	Capacitors	2	CP-107	C8107 and C8108	Filters in power supply circuit, fourth frame

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
16	Band Switch	1	AS-120		Tuning band switch, third frame
17	1. Power Supply, Drawer Assembly	1	Model CPP-5 Ser. No. 6275		Power supply drawer, rear first frame
	2. Frequency Divider, Drawer Assembly	1	Model CHL-1 Ser. No. 6275		Frequency divider drawer, first frame
	3. R F Oscillator, Drawer assembly	1	Model CSS-1A Ser. No. 6275		R F oscillator drawer, first frame
18	1. A F Controlled Oscillator Assembly	1	Model CLL-1 Ser. No. 6275		A F oscillator drawer, first frame
	2. Tone Intelligence, Drawer Assembly	1	Model TIS-3 Ser. No. 6275		Tone intelligence drawer, first frame
	3. Sideband Exciter, Drawer Assembly	1	Model CBE-1 Ser. No. 6275		Sideband exciter drawer, first frame
19	1. Controlled Master Oscillator, Drawer Assembly	1	Model CMO-1 Ser. No. 6275		Controlled master oscillator drawer, first frame
	2. Frequency Amplifier, Drawer Assembly	1	Model CHG-2 Ser. No. 6275		Frequency amplifier drawer, first frame
20	Power Supply	1	Model CPP-2 Ser. No. 6275		Power Supply drawer, first frame

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
21	RF Amplifier Drawer Assembly with plug-in RF Amplifier unit Model RFC-1	1	AX-104	2000	RF amplifier and control panel, second frame
22	High-Voltage Rectifier, Drawer Assembly	1	AX-103	600	H.V.R., second frame
23	Bias Power Assembly Supply, Drawer	1	AP-104	7500	Bias power supply drawer, third frame
24	High-Voltage Rectifier, Drawer Assembly	1	AP-105	8400	H.V.R. drawer, fourth frame
25	Crowbar Circuit Drawer	1	AX-212	8300	Crowbar drawer, fourth frame
26	Antenna Tuner Drawer	1	AT-103	8200	Meter panel and antenna tuner drawer, fourth frame
27	Tube, Electron	1	ML-6697	V7301	Power amplifier tube, third frame
28	Exterior Covers and Trim strips:	1			Exterior doors, covers, and trim strips for frames one through fourth.
	1. Second Frame Trim, Front Left Side	1	MS-1634		
	2. First and Second Frame Trim, Front top		MS-1635		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION TMC/PN	DESIGNATION SYM	FUNCTION
28 (cont)	3. First and Second Frame Trim, Front Bottom	1	MS-1636		
	4. First Frame Trim, Front Hinged Right Side	1	MS-1637		
	5. First Frame Door, Rear	1	MS-1648		
	6. First and Second Frame Trim, Rear Center	1	MS-1669		
	7. First Frame Trim, Rear Right Side	1	MS-1670		
	8. Fourth Frame Trim, Rear Left Side	1	MS-1671		
	9. First and Second Frame Trim, Rear Top and Bottom	2	MS-1672		
	10. First and Second Frame Cover, Top	1	MS-1699		
	11. First Frame Trim Front Hinged Left Side	1	MS-1920		
	12. Fourth Frame Trim, Front Right Side	1	MS-2025		
	13. Second and Third Frame Trim, Front	1	MS-2026		
	14. Third and Fourth Frame Trim, Front	1	MS-2027		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
28 (cont)	15. Third and Fourth Frame Trim, Front Top	1	MS-2028		
	16. Third and Fourth Frame Trim, Front Bottom	1	MS-2029		
	17. Second Frame Door, Rear	1	MS-2037		
	18. Third and Fourth Frame Trim, Rear	1	MS-2051		
	19. Second and Third Frame Trim, Rear	1	MS-2052		
	20. Third and Fourth Frame Trim, Rear Top and Bottom	2	MS-2053		
	21. Fourth Frame Cover, Right Side	1	MS-2116-2		
	22. First Frame Cover, Left Side	1	MS-2117		
	23. First Frame Door, Front	1	MS-2119		
	24. Fourth Frame Door, Front	1	MS-2118		
	25. Third Frame Trim, Center Rear	1	MS-2300		

Table 1-3. Equipment Supplied (cont)

CRATE NO.	CONTENTS	QTY	DESIGNATION		FUNCTION
			TMC/PN	SYM	
29	Exterior Covers and Doors: 1. Fourth Frame Door, Rear	1	MS-1647		Exterior covers and doors, second and third frames
	2. Third and Fourth Frame Cover, Top	1	MS-1997		
	3. Third Frame Door, Rear	1	MS-2037		
	4. Second Frame Door, Front	1	MS-2120-1		
	5. Third Frame Door, Front	1	MS-2120-2		

1-6. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

Table 1-4 lists equipment required to install the 40k transmitter. Although items are required, they are not supplied.

Table 1-4. Equipment Required But Not Supplied

Equipment	Purpose
1. Box Wrenches, assorted sizes	Fastening mounting hardware
2. Open End Wrenches, Assorted sizes	Same as item 1
3. Spin Tights, sizes: 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16	Same as item 1
4. Socket Wrench Set, socket sizes to 1-1/8	Same as item 1
5. Screw Drivers, Flat Head, assorted sizes	Same as item 1
6. Screw Drivers, Phillips-head, assorted	Same as item 1
7. Crowbar	Open packing crates
8. Fork-Lift or equivalent	Moving heavy objects (e.g. packing crates and voltage transformers)
9. Low-Speed Electric Drill and carborundum bit or equivalent	Drilling equipment anchoring holes
10. Case cutter	Open cardboard packing cases
11. Nail puller	Open packing crates
12. Pair of snips	Cutting strap bands

1-7. ASSOCIATED MANUALS.

Table 1-5 presents a list of associated equipment manuals. This list provides a convenient reference for readily obtaining information on the 40k transmitter.

Table 1-5. Associated Manuals

EQUIPMENT	MANUAL
First Frame	Maintenance Instructions for transmitting Set, Radio, Model GPT-10K.
Sideband exciter drawer	
Frequency amplifier drawer	
Controlled master oscillator drawer	
Audio frequency controlled oscillator drawer	
Rf oscillator drawer	
Tone intelligence drawer	Transmitting Radio Set, Model GPT-10K, Vol IS.
Frequency divider drawer	
Power supply drawer CPP-2	
Auxiliary power panel	
Power Supply drawer CPP-5	
Standing wave control unit drawer	
Second Frame	
Rf amplifier drawer	
Rfc drawer	
HVR drawer 600	
Third Frame	Maintenance Instructions for transmitting Set, Radio, Model GPT-40K.
Bias power supply drawer	
Fourth Frame	
Antenna tuner drawer	
Crowbar drawer	
HVR drawer 8400	

CHAPTER 2

INSTALLATION

2-1. INTRODUCTION.

The intent of this chapter is to present three sections of installation information. Section I discusses pre-installation considerations. Section II presents logistic data. Section II is the installation procedure.

SECTION I

PRE-INSTALLATION

2-2. SCOPE.

This section presents pre-installation considerations that warrant planning before undertaking transmitter assemblage. Although information presented is for a 40k transmitter land installation, it may be applicable to a mobile-van or shipboard installation.

2-3. ENVIRONMENT.

The 40k transmitter operates under a broad range of environmental conditions (refer to table 1-2). These conditions must be taken into consideration when selecting the equipment location.

2-4. LOCATION OF PERIPHERAL EQUIPMENT.

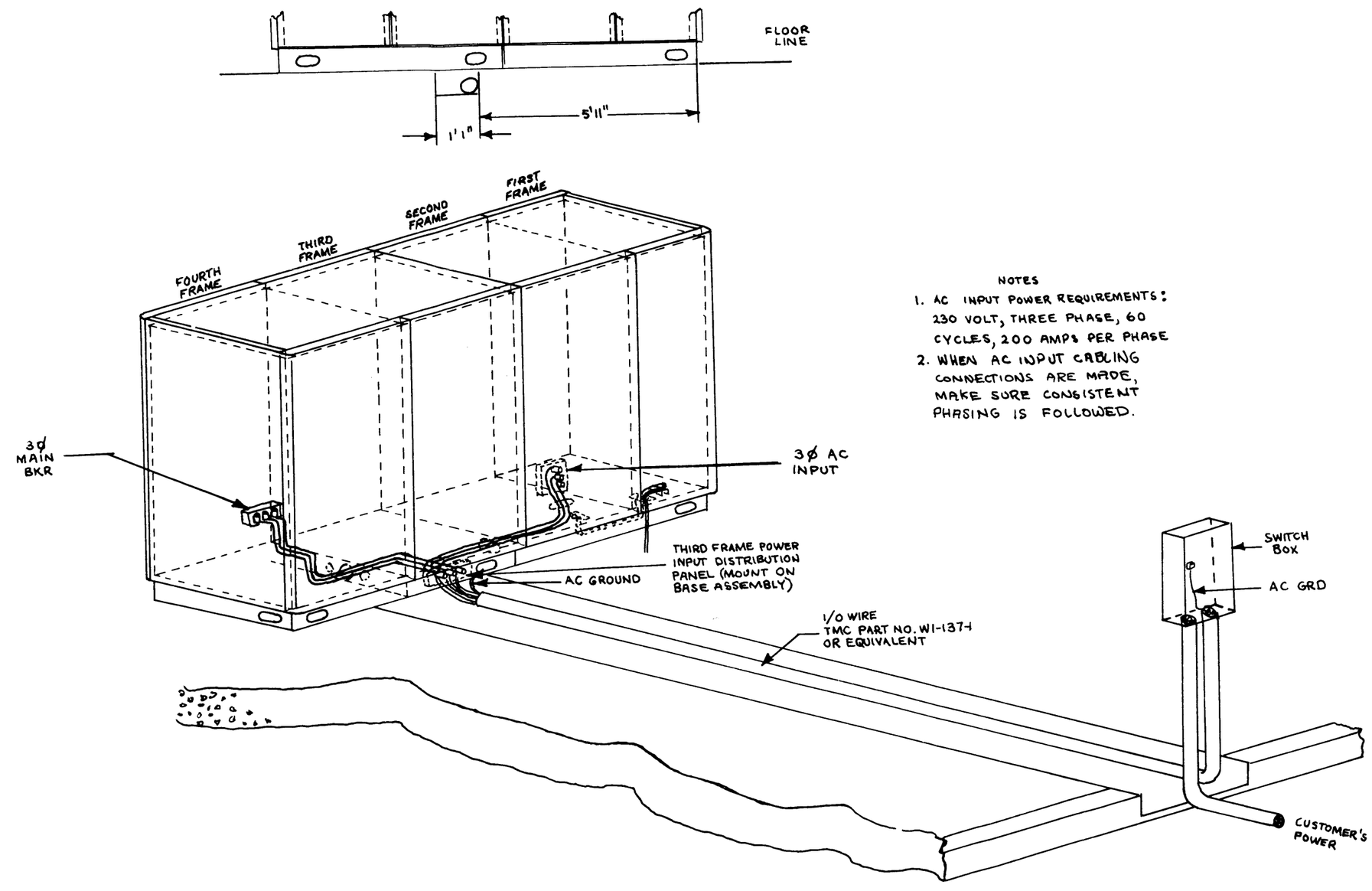
There is no distance limitation governing the location of peripheral equipment (i.e. facsimile and teletype machines microphones, keys, test equipment, etc.) other than providing practical and compatible interequipment operation (refer table 1-2).

Consideration should be given to the routing and length of input signal cables before assembling the transmitter. Signal input cable entry is made through the base assemblies of the equipment during installation. All signal inputs are spade lug connections terminating inside the rear of the first frame. This point can be used as a reference in determining exact input signal cable lengths.

2-5. AC INPUT POWER REQUIREMENTS.

Three methods of laying out input power cables can be used. Figure 2-1 illustrates the sub-floor-level cable raceway method, which requires provisioning for troughs during construction of the building. If these provisions have not been made, removable access plates are located on the base assemblies to permit cable entry in the floor-level and ceiling routing methods.

It should be noted that input power under full power output conditions is based on the maximum allowable plate dissipation of the final amplifier rather than on various modes of operation. Primary input power under standby and full power conditions are 38.5 kw and 73.5 kw, respectively. In fulfilling practical and adequate ac input power requirements, consider the transmitter draws 100 kw. This requirement can be used in providing the appropriate size peripheral ac input power line, switch or breaker boxes and etc. for the transmitter. Under maximum current conditions the transmitter draws 200 amperes per phase. Ac input feeder cables must be 1/0 wire.



NOTES

1. AC INPUT POWER REQUIREMENTS: 230 VOLT, THREE PHASE, 60 CYCLES, 200 AMPS PER PHASE
2. WHEN AC INPUT CABLING CONNECTIONS ARE MADE, MAKE SURE CONSISTENT PHASING IS FOLLOWED.

245-4

Figure 2- 1. Typical Input Power Cabling Requirements, Installation Diagram.

2-6. STATION GROUND.

The 40k transmitter must be grounded to station ground. Accordingly, a 5/8-11 nut has been centered and welded to the base assembly of the transmitter. The exact location of the nut is 11-1/4 inches in from the rear corner on the inside of the base assembly, under the first frame. If the station ground has not been established, locate an appropriate station ground cable in this vacinity before starting the installation procedure. Complementary hardware for the welded nut is provided to connect station ground to the transmitter during installation.

2-7. EQUIPMENT ANCHORING.

Anchoring the transmitter to the floor in a land installation should not be necessary to maintain stability, since gross equipment weight is approximately 7,000 lbs. However in a shipboard or mobile-van installation, anchoring the transmitter may be employed. Using the base assemblies drilled holes as a template during assembly, the desired anchor techniques (including shock mounting) may be used.

2-8. ANTENNA TRANSMISSION LINE.

The output impedance or load for the 40k transmitter is 50 ohms (unbalanced output) or 600 ohms (balanced output). When working into either load, it is not necessary to use a rigid transmission line. A flexible 3-1/8 inch (recommended or 1-5/8 inch minimum) coaxial line for unbalanced operation or a pair of insulated #6 copper wires for balanced operation are required. The length of the transmission line(s) is governed by the physical routing distance between the transmitter and antenna.

A 3-1/8 inch standard EIA (Electronics Industry Association) flange connector is used as the unbalanced output jack of the transmitter. Any compatible connector plug may be used on the end of the transmission line.

2-9. PERIPHERAL AIR CONDITIONING.

The transmitter cabinets are semi-pressurized and forced-air cooled, refer to table 1-2, by self-contained blowers. Approximately 90 percent of the heat generated by the transmitter is dissipated through exhaust air-ducts. The remaining 10 percent (maximum) of the heat is radiated by the surface area of the transmitter. This 10 percent will load the room air conditioning system. The load imposed upon the room air conditioner and subsequently room-temperature should be taken into consideration.

2-10. DIMENSIONAL CLEARANCES.

Figure 2-2 illustrates minimum dimensional clearances required for typical 40k transmitter installation. Additional clearance considerations are discussed in following paragraphs.

Physically, the largest single part of the transmitter is an uncrated frame assembly, measuring three feet wide, three and a half feet deep, and six and a half feet high (approximately). These dimensions necessitate entrance door(s) sizes, leading to the intended installation point, which will allow adequate frame passage.

Figure 2-2 also presents air intake and exhaust port dimensions for transmitter top covers and side panels. After planning final transmitter location, these dimensions can be used as a reference point in and for fabricating the desired air duct system. Location and sizes of exterior wall cut-outs for

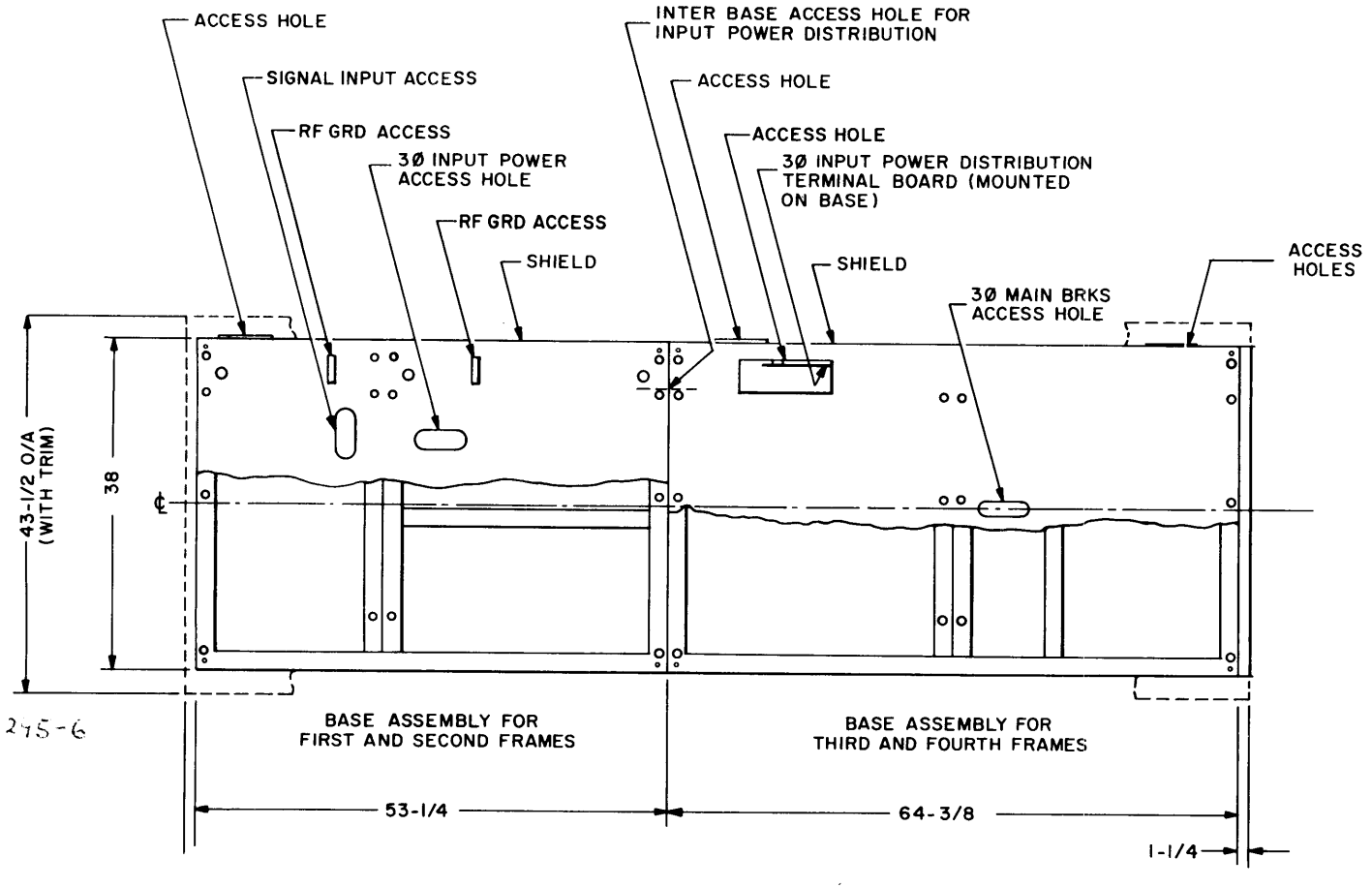


Figure 2-2. Dimensional Clearance Requirements, Installation Diagram (sheet 2 of 2).

the air duct system will ultimately be determined by ducting used.

The type of output transmission line (transmitter to antenna) is another clearance consideration. Construction of necessary hole sizes in the exterior walls between transmitter and antenna will be governed by type selected.

It may be practical to outline overall dimensions of the transmitter on the floor with a piece of soft chalk or a plumbline, before starting the installation procedures. After using this outline as a guide to position transmitter base assemblies, in the installation procedure, these lines could be removed.

2-11. TRANSMITTER LOCATION.

All of the proceeding data should be taken into account when locating the 40k transmitter. In addition, some practical and obvious things to consider would be: accessibility and work space; heat zones; and, habitability.

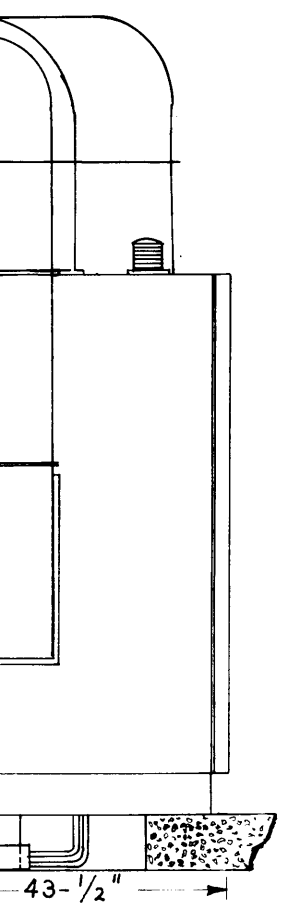
Equipment accessibility and work space should be provided for personnel to facilitate ease in installing, operating, or maintaining the transmitter. Since installation requires the greater amount of working floor area, it might be used as a criteria for locating the transmitter.

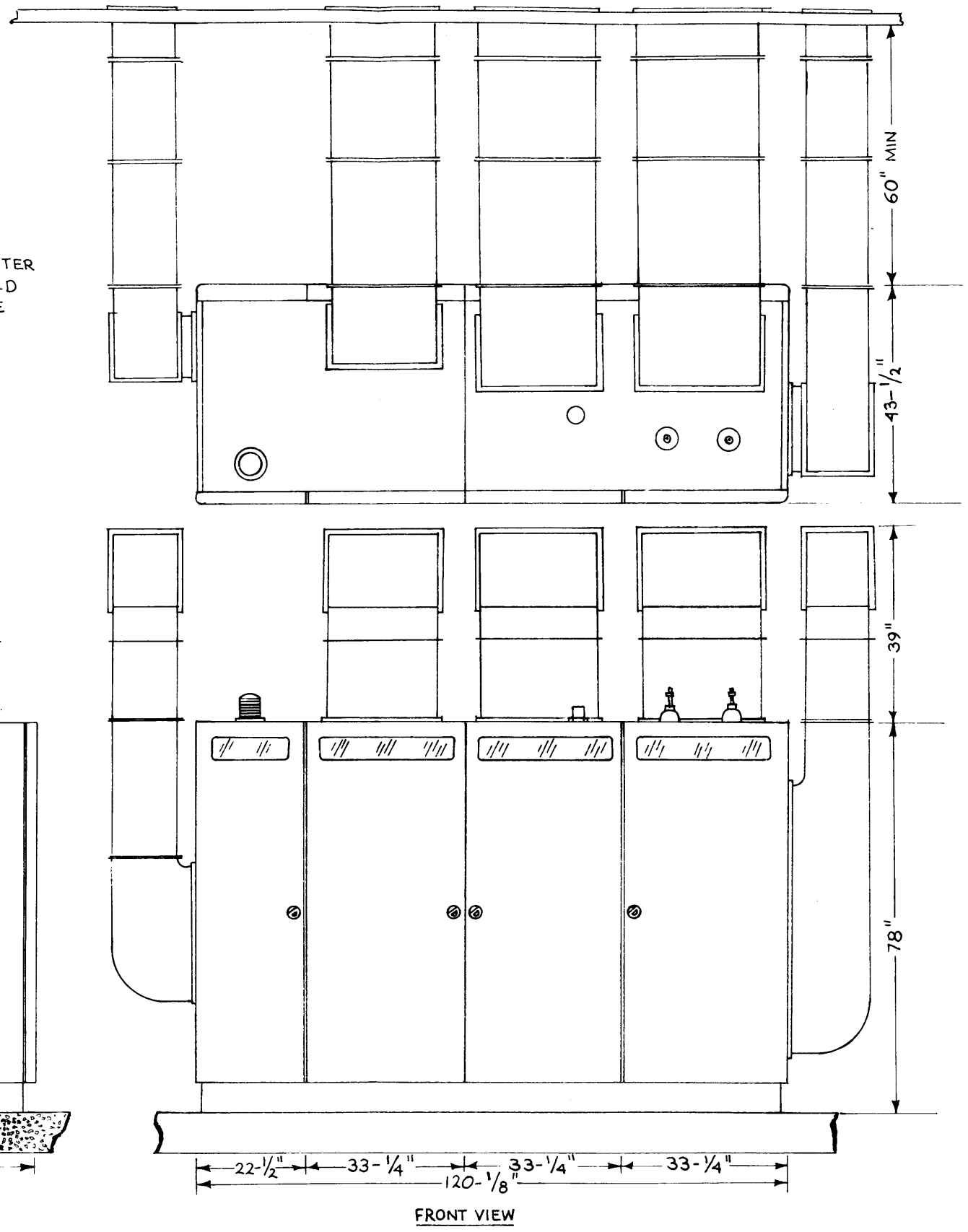
Heat zones should be avoided. These zones would be spaces above or adjacent to heating or heat producing apparatus or piping ducts.

Habitability features with respect to locating might be: neat peripheral wiring for personnel safety; and, passageway clearance for personnel in the case of co-located equipments.

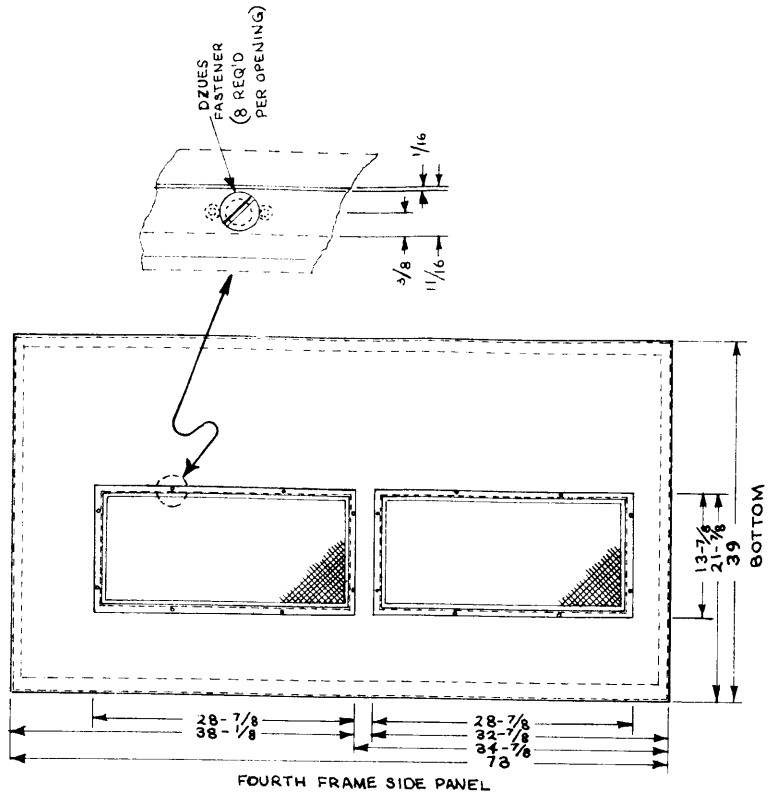
NING

EN TRANSMITTER
WALLS SHOULD
WALK SPACE
HES.

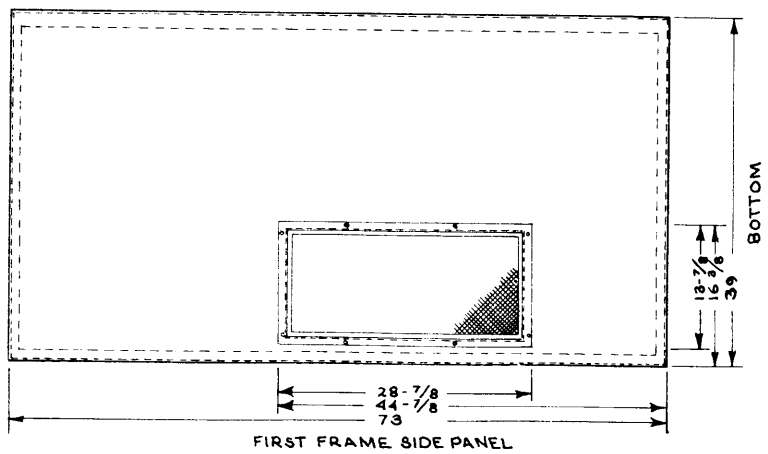




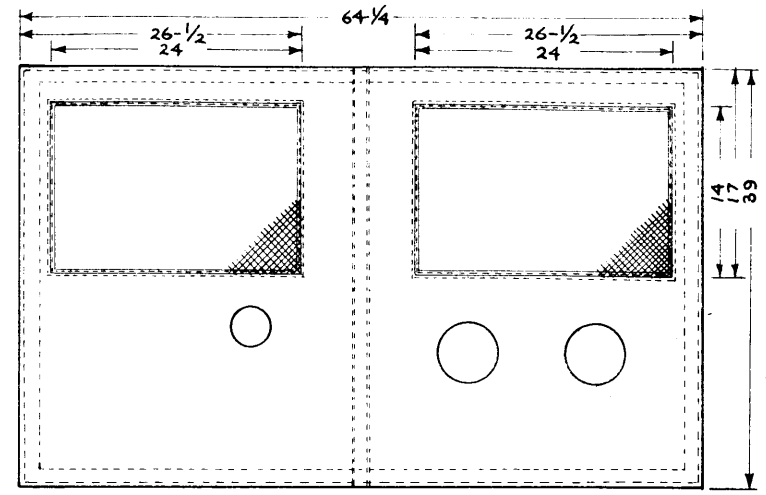
FRONT VIEW



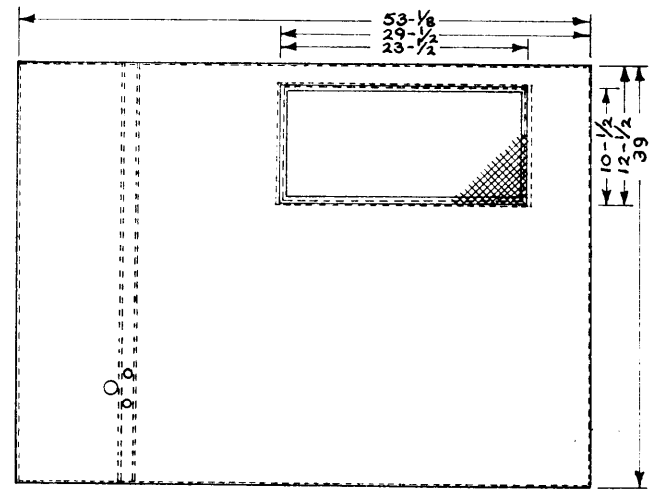
FOURTH FRAME SIDE PANEL



FIRST FRAME SIDE PANEL



FRONT
THIRD AND FOURTH FRAMES

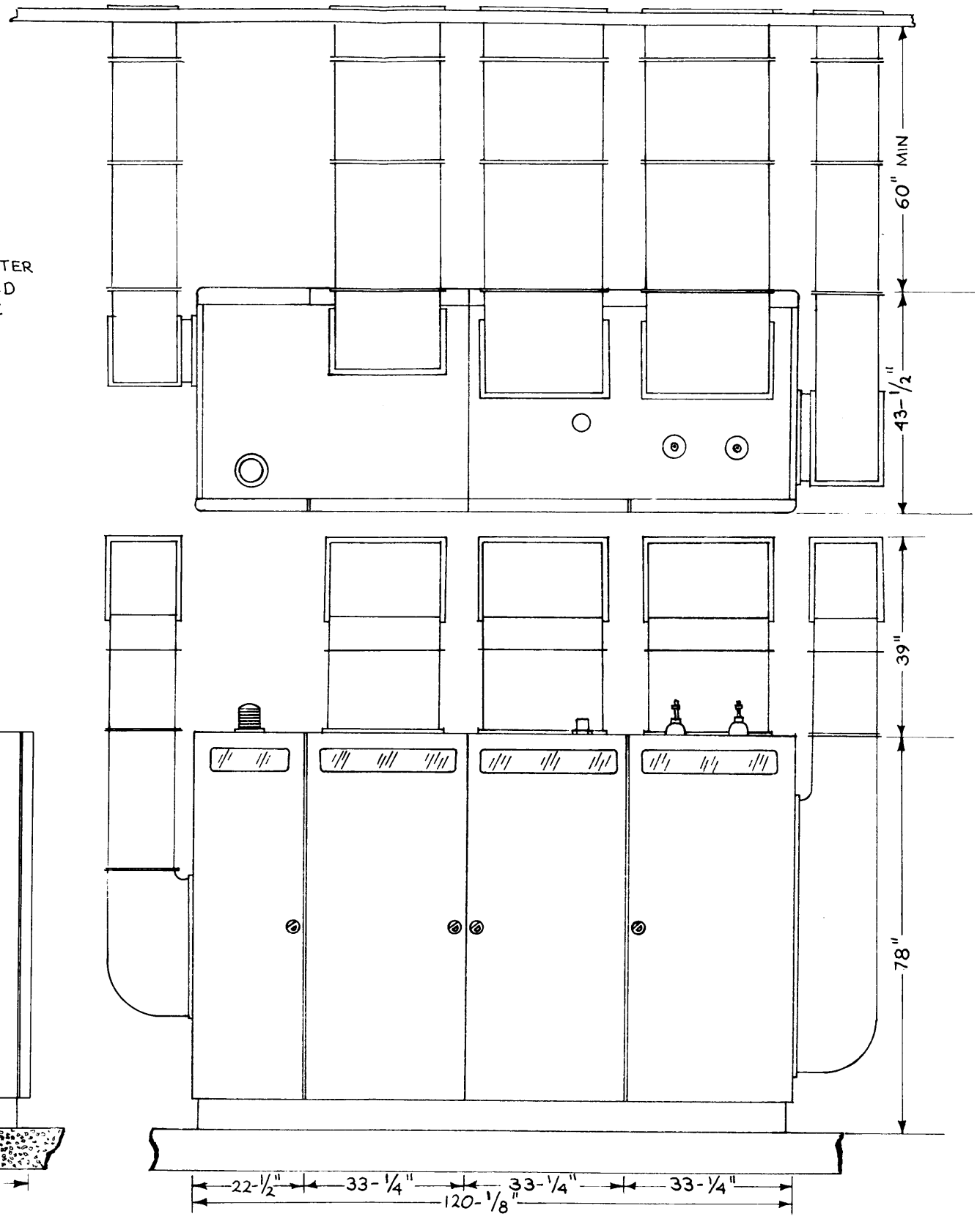


FRONT
FIRST AND SECOND FRAMES

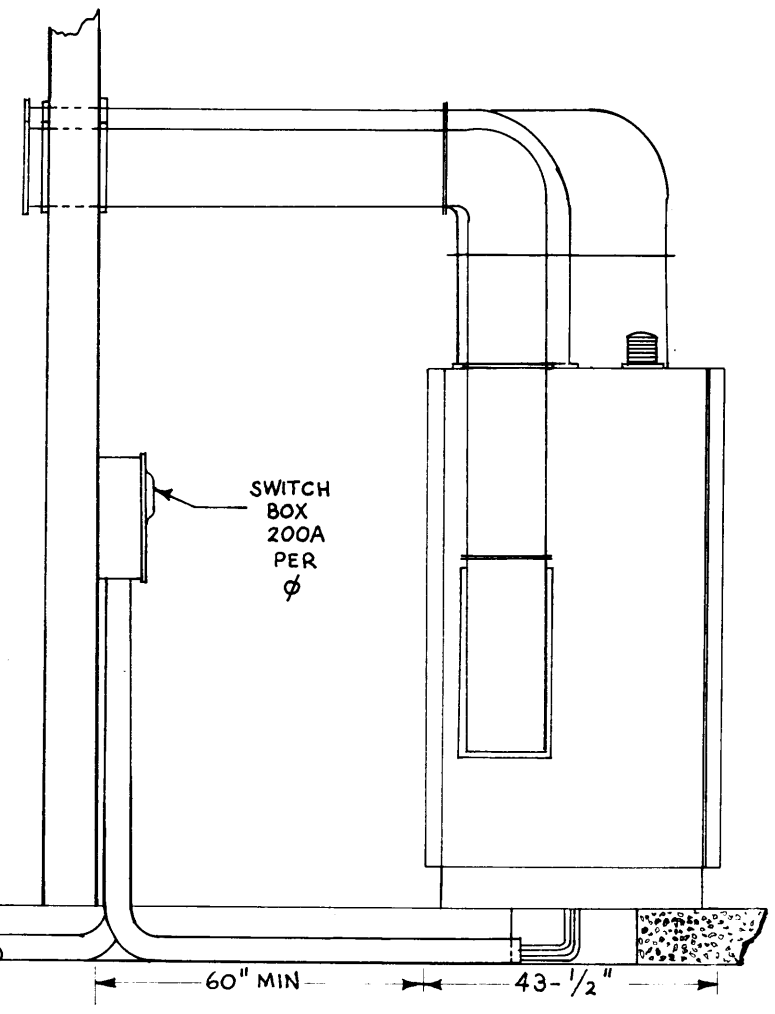
Figure 2-2. Dimensional Clearance Requirements, Installation Diagram (sheet 1 of 2).

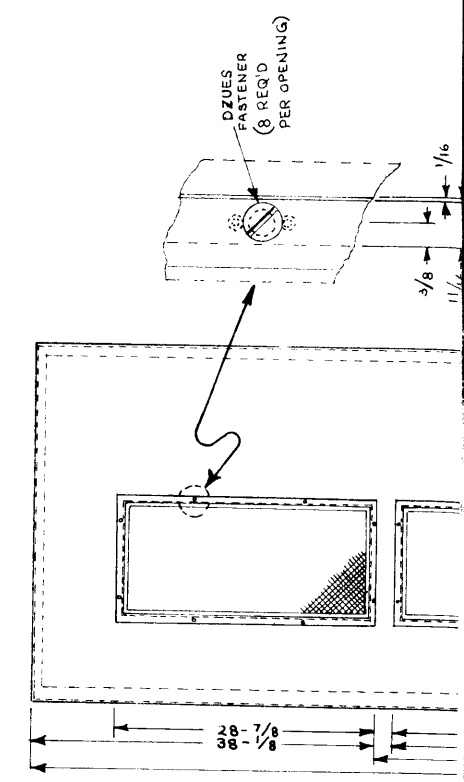
NOTES

1. MAXIMUM DOOR OPENING IS: 33-1/4 INCHES.
2. DIMENSIONS BETWEEN TRANSMITTER SIDES AND BUILDING WALLS SHOULD PERMIT PERSONNEL WALK SPACE OF AT LEAST 48 INCHES.

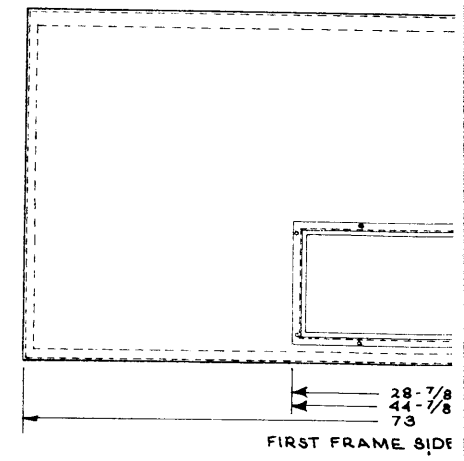


FRONT VIEW





FOURTH FRAME SIDE



FIRST FRAME SIDE

295-5

SECTION II

LOGISTICS

2-12. SCOPE.

This section presents logistic information. Information covered includes materiel handling, packaging data, equipment inspection, and uncrating methods.

2-13. MATERIEL HANDLING.

Whether the equipment is crated or uncrated, various precautions must be observed in materiel handling.

CAUTION

Crates must never be rolled, crushed, dropped, or struck— they contain delicate electronic apparatus that can be damaged.

General safety precautions should be adhered to when moving the equipment to prevent damage to equipment or injury to personnel. Weight alone is not an indication that equipment can be moved safely by personnel. Size is also an important consideration. A light-weight, large, and bulky item cannot easily be handled by one man. When personnel are involved in handling, a good rule-of-thumb to follow is: 50 pounds for one man; or 100 pounds for two men is considered a safe limit for carrying. When lifting an item, bend the knees, keep back straight and lift with the legs. Before handling materiel, refer to tables 1-1 and 2-1 for crated and uncrated weights and dimensions.

2-14. PACKAGING DATA.

The 40k transmitter is packed in 29 crates (not including running spares). Each crate is assigned a number from one to twenty-nine and appears on the crate. Now that crate 1 has been opened and before starting the actual installation procedure, physically locate crate 1 closest to the intended point of installation; locate the other crates according to their numerical sequence such that crate 29 is placed farthest away from crate 1. Arranging crates in this manner makes unpacking and assembling the transmitter easier.

The transmitter is cleaned, preserved, packaged, and marked in accordance with MIL-P-116, PMD-40, and MIL-STD-129. Figure 2-3 illustrates typical equipment packing methods.

Table 2-1 lists the crated weights and dimensions of the 40k transmitter. Additional reference can be made to table 1-1 for uncrated weights and dimensions.

Table 2-1. Crated Weights and Dimensions

CRATE NO.	GROSS WEIGHT IN LBS.	DIMENSIONS IN INCHES		
		HGT	W	D
1	201	32	23-7/8	30-3/4
2	263	45-1/8	38-3/8	22-1/4
3	234	56-3/8	40-1/8	8
4	273	67-3/4	40-1/8	8
5	768	82-1/8	50-1/4	32-1/4

Table 2-1. Crated Weights and Dimensions (cont)

CRATE NO.	GROSS WEIGHT IN LBS.	DIMENSIONS IN INCHES		
		HGT	W	D
6	1298	31-1/8	23	51-1/2
7	1130	21-3/8	42	50-1/4
8	1166	81-3/8	42	51-1/4
9	539	28-3/4	19-3/4	24
10	654	26-3/8	16-5/8	38
11	654	26-3/8	16-5/8	38
12	654	26-3/8	16-5/8	38
13	150	16-1/4	10-1/2	16-7/8
14	149	23-1/4	13-1/4	12-1/4
15	210	24-3/4	15-1/4	21-1/8
16	201	40-3/4	27	28-3/4
17	212	32	23-7/8	30-3/4
18	202	32	23-7/8	30-3/4
19	214	32	23-7/8	30-3/4
20	143	27-1/4	21-5/8	17-1/4
21	240	40	30-3/4	22
22	233	40	30-3/4	22
23	217	39-7/8	30-3/4	22
24	289	40-3/4	34-5/8	27-3/4
25	187	40	30-3/4	22
26	250	40-3/4	34-5/8	27-3/4
27	146	28-1/2	26-3/4	24-3/4
28	643	77-5/8	27-1/2	44-1/4
29	648	77-5/8	22-1/4	44-1/4

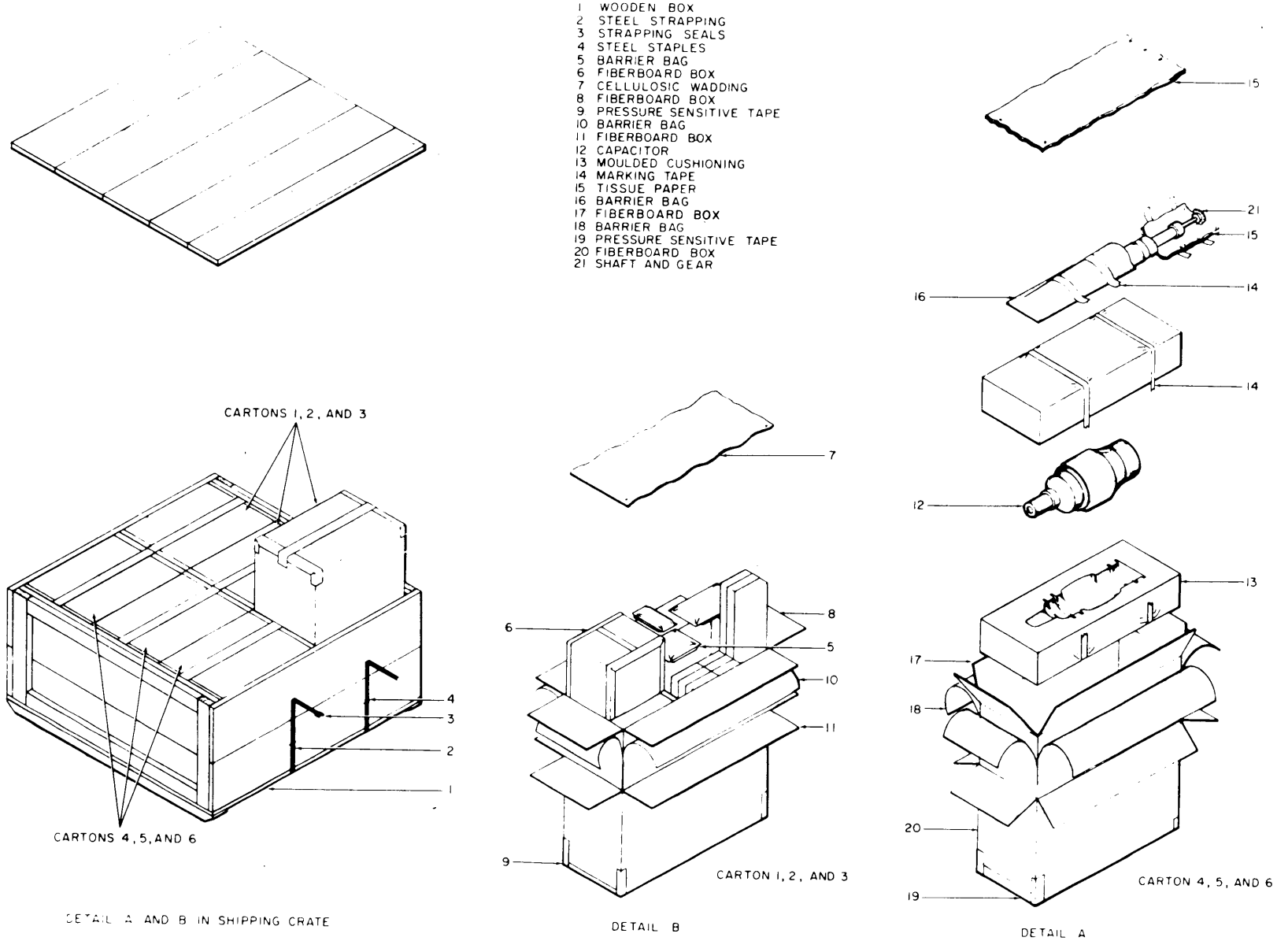


Figure 2- 3. Typical Equipment Packaging (sheet 1 of 5)

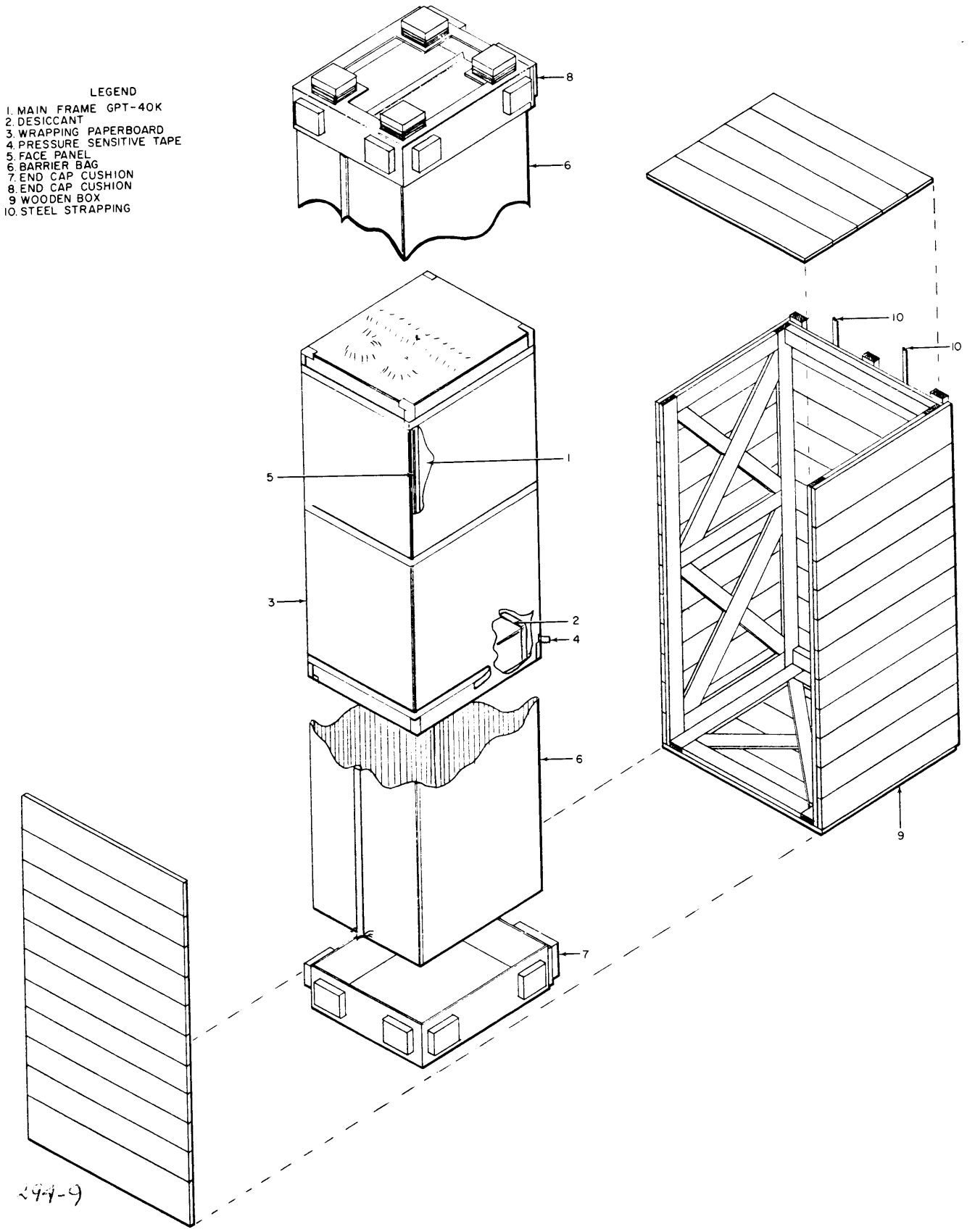


Figure 2-3. Typical Equipment Packaging (sheet 2 of 5)

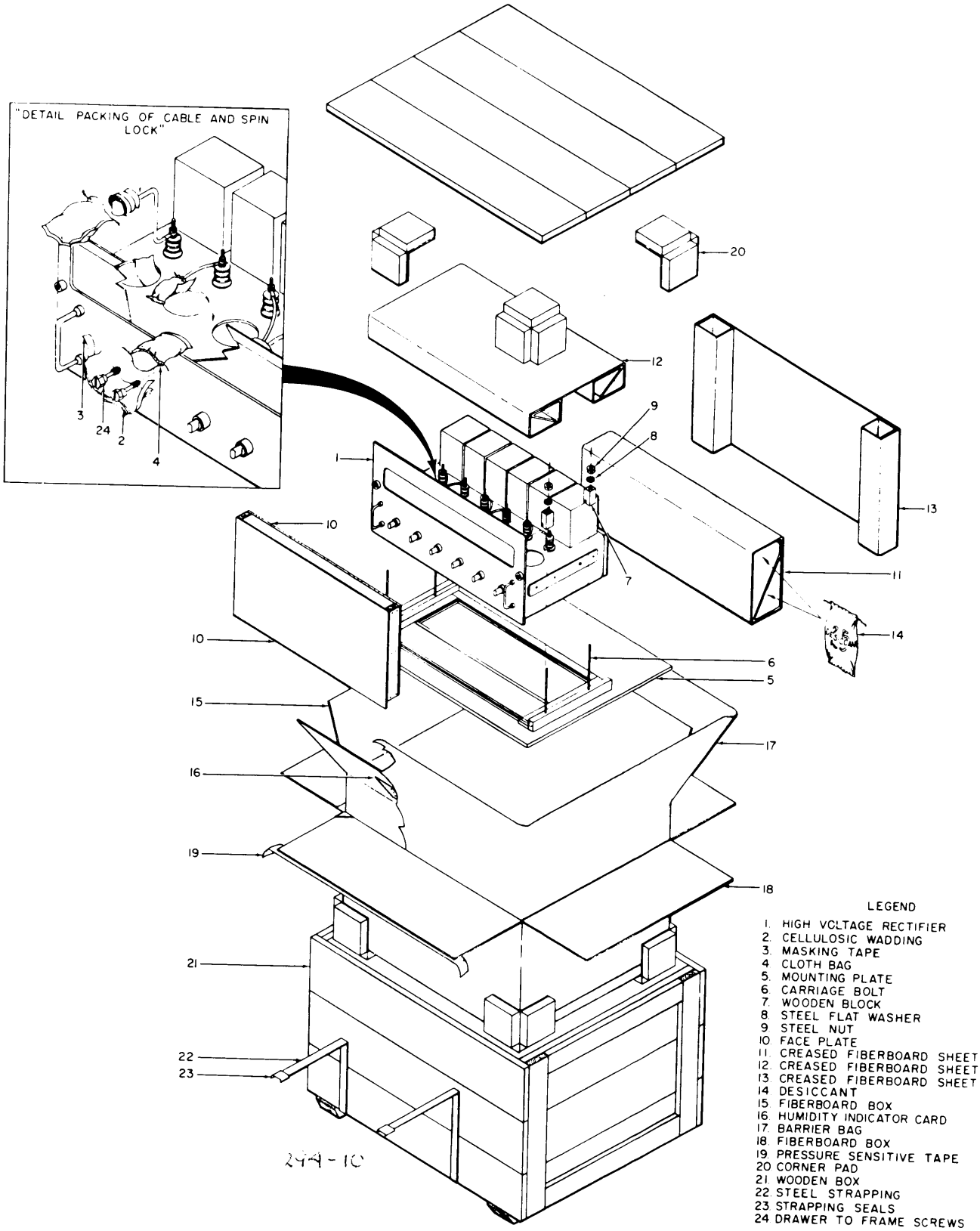


Figure 2- 3. Typical Equipment Packaging (sheet 3 of 5)

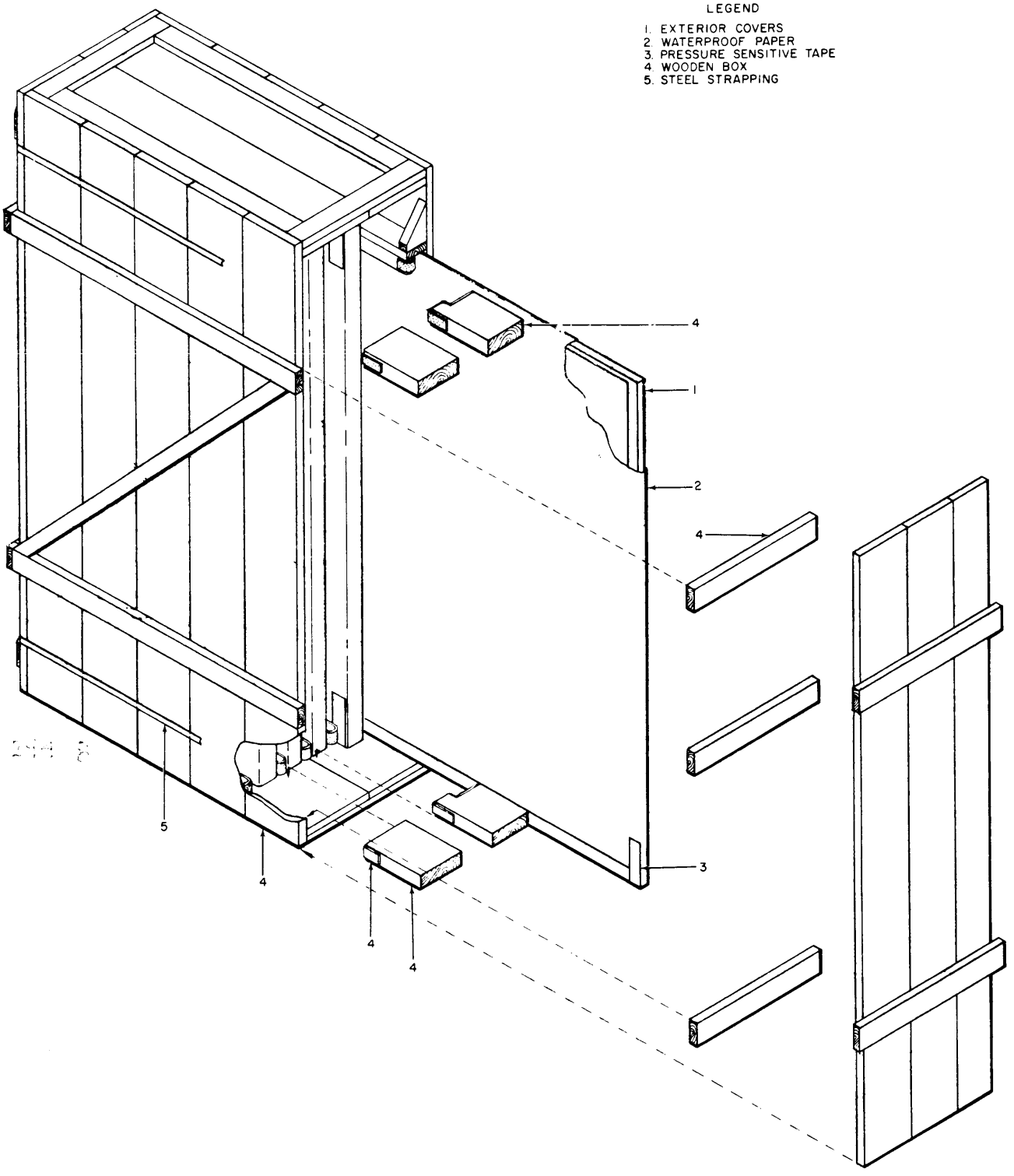


Figure 2-3. Typical Equipment Packaging (sheet 4 of 5)

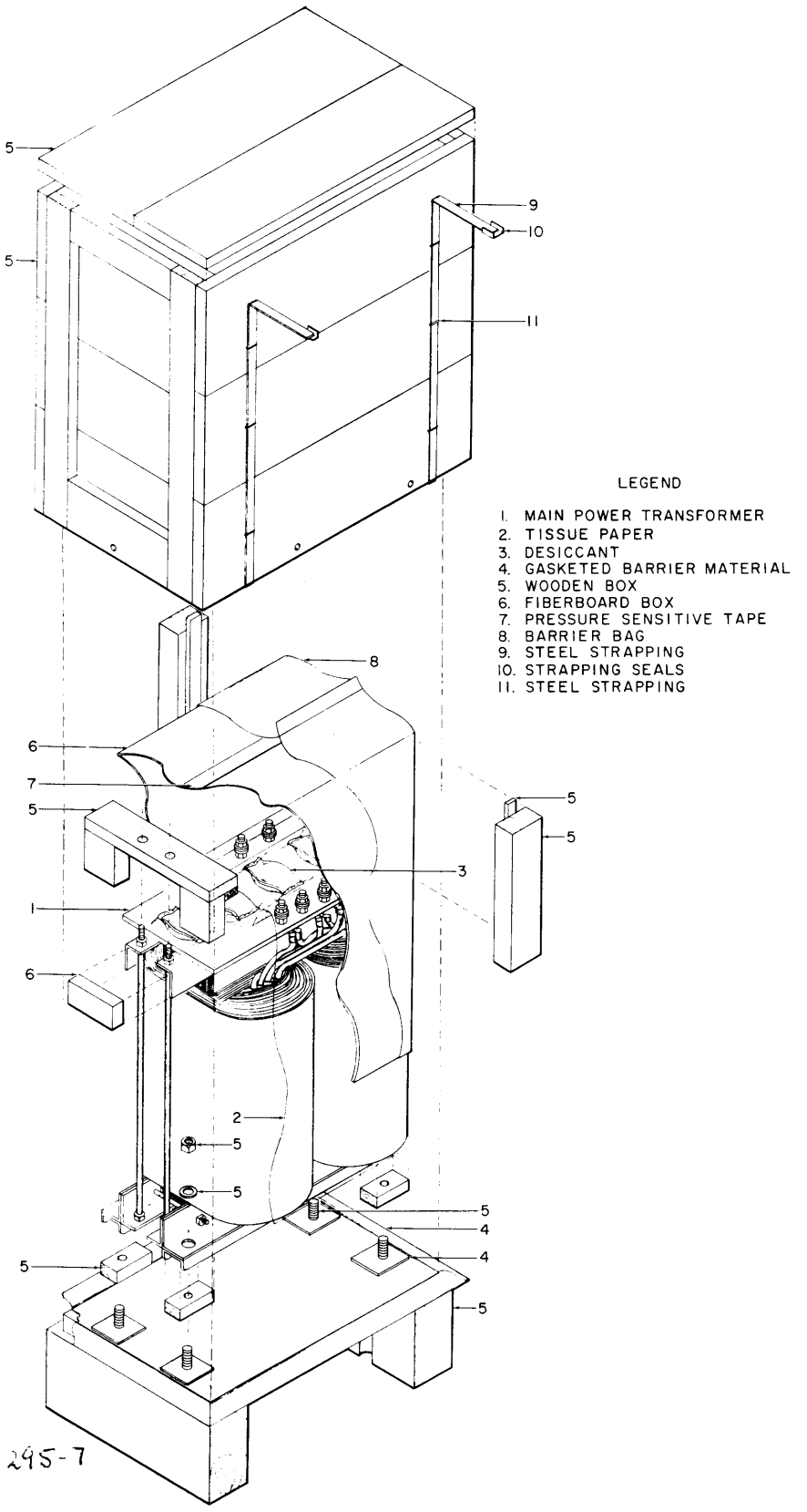


Figure 2- 3. Typical Equipment Packaging (sheet 5 of 5)

2-15. EQUIPMENT INSPECTION.

The 40K transmitter has been assemblied, calibrated, and tested at the factory before shipment. Inspect all packages for possible transit damage. While following the procedural installation instructions, carefully unpack each crate as indicated. Inspect all packing materiel for parts which may have been shipped as loose items.

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

2-16. UNCRATING METHODS.

The following information briefly outlines general uncrating methods. These methods must be adhered to when unpacking the transmitter to prevent equipment damage. Keep in mind the information, previously discussed, on materiel handling, packaging data and equipment inspection.

a. Remove wire straps or bands from around crates with a pair of snips.

b. Unless otherwise specified, remove nails from three sides of the crates with a nail puller. Do not use a claw hammer, pinch bar, or etc.

c. When the sides of a crate have been removed, the moisture-proof paper must be ripped off. If a knife is used, care should be exercised not to mar equipment.

d. If equipment is not packed in a cardboard carton, it may be removed from the crate as prescribed in the

installation procedure.

e. If after removing moisture-proof paper a cardboard carton is encountered, carefully open with a case cutter.

f. Where applicable, remove the following:

(1) Creased cardboard blocking pieces.

(2) Barrier bags.

(3) Tape.

(4) Molded cushioning.

(5) Cellulose wadding.

(6) Tissue paper.

g. An inventory of the equipment should be made at this time. As parts are unpacked, they should be marked off on the packing list or equipment supplied list. If anything is damaged refer to paragraph 2-15.

SECTION III

INSTALLATION PROCEDURE

2-17 SCOPE.

A minimum number of assemblies, subassemblies, components and hardware have been disassembled from the 40k transmitter and separately packaged. Thus reducing the possiblity of equipment damage in transit. The method of disassembly and separate packaging of the transmitter also permits realistic equipment handling. This section presents logical step-by-step instructions for unpacking the shipping crates containing the transmitter and subsequent assembly.

2-18 GENERAL INSTRUCTIONS.

Carefully read the instructions in each step. After reading, consider the complexity involved in performing the instruction. It may be advisable to simulate a complex step before actually doing it. Make sure each step has been completed before proceeding to the next. Where instructions are not readily obvious, illustrations are provided to complement the procedure.

Cables, wires, and other miscellaneous items that are disconnected during transmitter disassembly are tagged and taped to the equipment. To properly install the transmitter, this tape must be removed as encountered. The information on a given tag indicates the designated terminal on a component to which the tagged item must be connected. Make sure all cables and wires have been connected, as des-

ignated on tags, before sealing-up a frame or section of a frame with an r-f shield, front panel, drawer, or piece of exterior trim (a door, cover, etc.) If any confusion arises regarding cable or wire connections that must be made, refer to the applicable circuit diagram in Chapter 3 of this manual.

Temporary removal and replacement of panels, r-f shields, and component mounting assemblies are specifically called-out in the procedure inorder to install various items. To prevent unnecessary removal and replacement, follow the installation instructions. Do not anticipate instructions.

A list of equipment required to install the transmitter is presented in table 1-4. These non-specialized tools are not supplied with the equipment since items should be contained in an equipped maintenance shop.

Make sure installation personnel adhere to previously outlined techniques on uncrating and materiel handling.

2-19. PROCEDURE.

The following procedure is for installing the 40k transmitter. The transmitter may be operated with a balanced or unbalanced output. Refer to the operation and maintenance manuals, see table 1-5, for necessary changes that must be made to operate the transmitter with desired output.

STEP 1

a. Unpack assorted loose items from crate 1.

b. Check each item contained against equipment supplied list.

STEP 2

a. Unpack assorted loose items from crate 2.

b. Same as step 1b.

STEP 3

a. Unpack crate 3.

b. Remove shield from base assembly, figure 2-4 , for the first and second frames. Shield will be replaced later.

c. Position base assembly in accordance with pre-installation planning (see figure 2- 2).

STEP 4

a. Unpack crate 4.

b. Remove shield from base assembly for the third and fourth frames. Shield will be replaced later.

NOTE

Make sure both base assemblies are correctly positioned. This can be determined by locating access holes on the long side of base assemblies toward the intended rear side of the transmitter.

c. Position base assembly adjacent to base assembly positioned in step 3 (see figure 2- 4).

d. Using hardware from crate 1 bag 1, tightly bolt two base assemblies together (see figure 2-4).

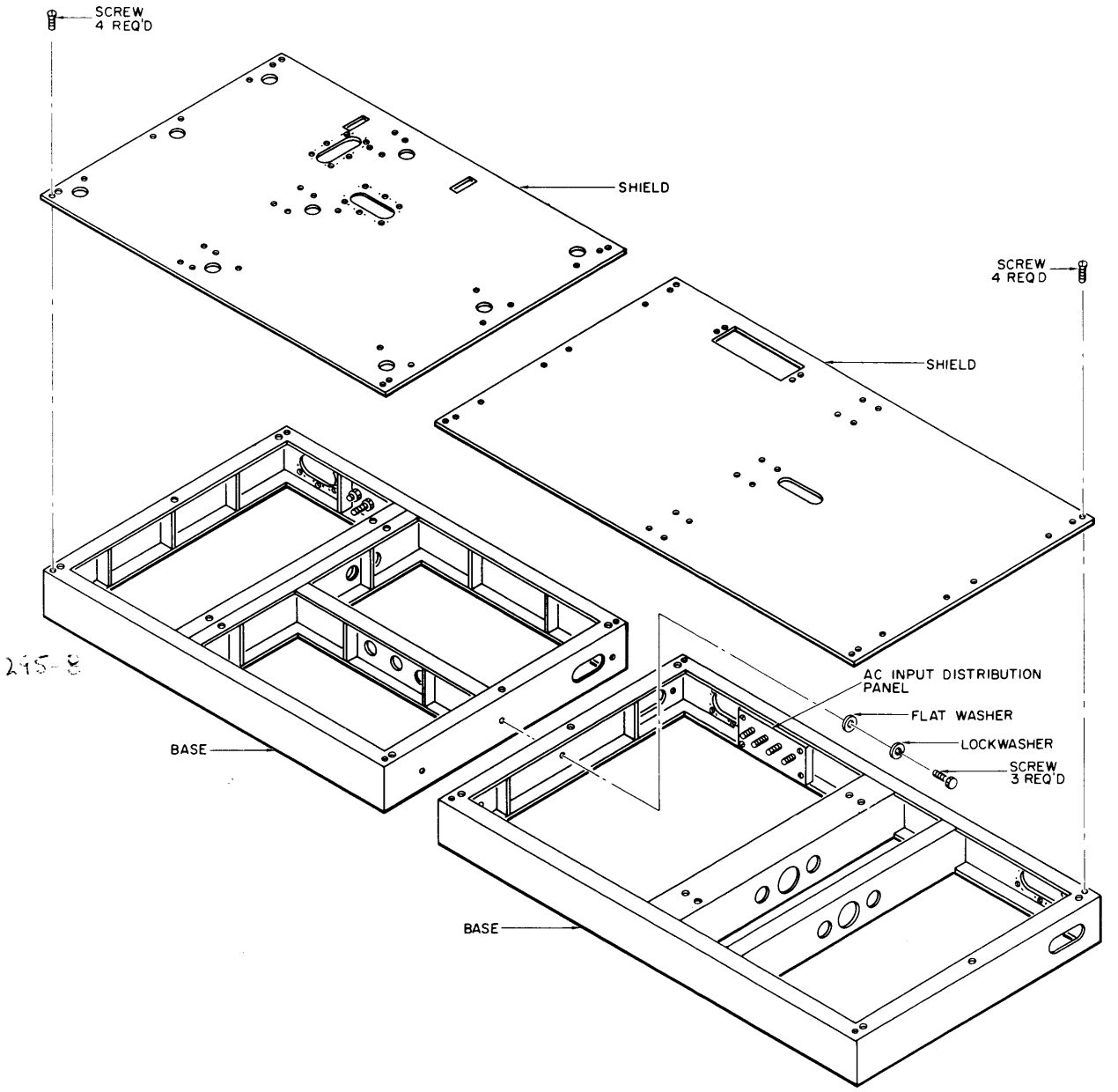


Figure 2-4. Base Assemblies for the First through Fourth Frames, Installation Diagram.

STEP 5

NOTE

Only part of this step can be performed now. The remaining part of the step (physically bending and routing grounding straps up through shield to respective frame studs and then mounting) must be performed as transmitter assemblage progressed.

STEP 5 (cont)

Using hardware from crate 1 bag 2, bolt grounding straps (contained in crate 1), as indicated in figure 2- 5 to the base assembly.

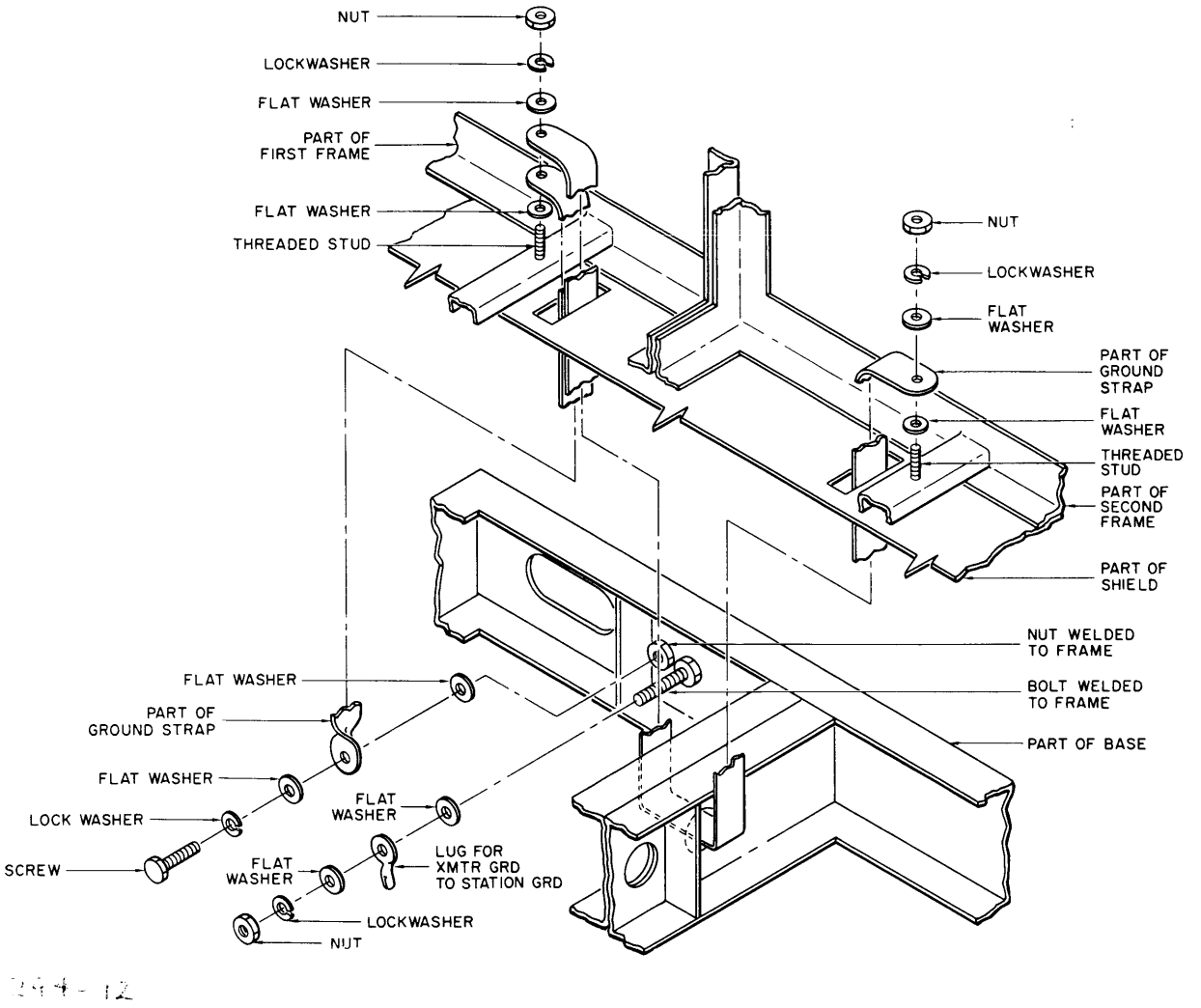


Figure 2- 5. Ground Straps, Installation Diagram

STEP 6

NOTES

1. DO NOT connect ac input power cables to the ac input switch box.

STEP 6 (cont)

NOTES (cont)

2. When connecting cables or wires, make sure cables are connected as indicated in the cable diagram.

a. Physically route ac input power and input signal cables into base assemblies (see figure 2-1).

NOTE

Ac interconnect cable must be routed through access holes. As transmitter assemblage progresses.

b. Connect ac input power cable from switch box and ac interconnect cable CA-615 (contained in crate 1) to power distribution terminal board located on rear of base assembly for third and fourth frames.

STEP 7

NOTES

1. Grounding straps connected in step 5 must be bent and routed through small rectangular access holes in shield.

2. Ac interconnect cable, input signal, and pa-monitor cables must be routed through appropriate access holes in shield.

a. Properly position shield, figure 2-4 on base assembly for first and second frames.

b. Using hardware previously removed, tightly bolt shield to base assembly.

STEP 8

a. Unpack crate 5.

b. Position first frame on base assembly (see figure 2-6).

c. Ground strap coming through shield will be connected later.

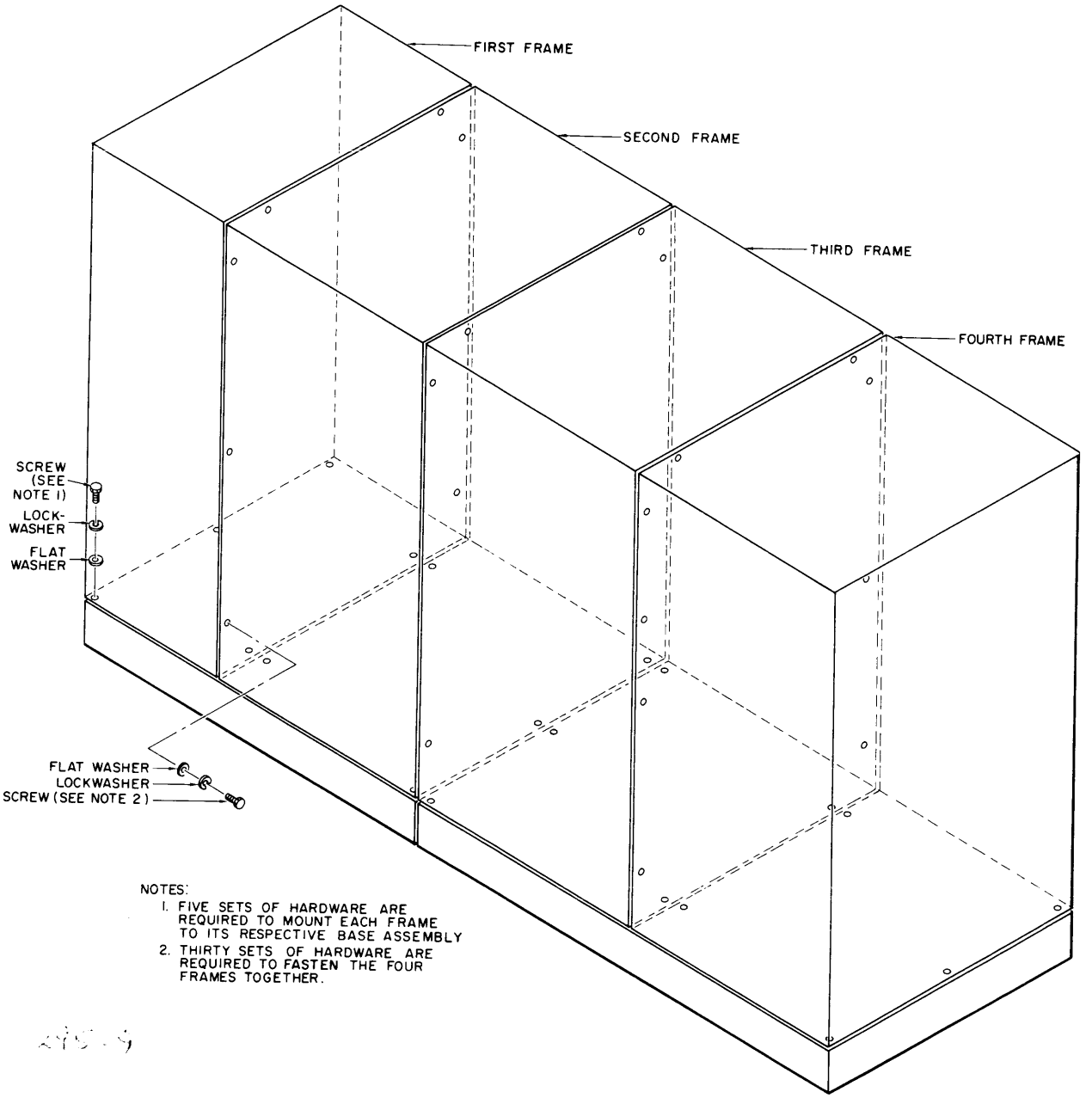


Figure 2-6. First through Fourth Frames, Installation Diagram

STEP 9

a. Unpack crate 6.

b. Position second frame on base assembly (see figure 2-6).

c. Using hardware from crate 1 bag, loosely bolt first and second frames to base assembly (see figure 2-6).

d. Using hardware from crate 1 bag 4, tightly bolt the line filterboard (contained in crate 1) to the wall (first and second frame wall) inside the bottom rear of the first frame.

e. Using remaining hardware from crate 1 bag 4, tightly bolt the line filterboard cover support brackets (contained in crate 1) to the frame wall, one bracket above and below the filterboard.

f. Position and secure filterboard cover (contained in crate 1) to filterboard brackets.

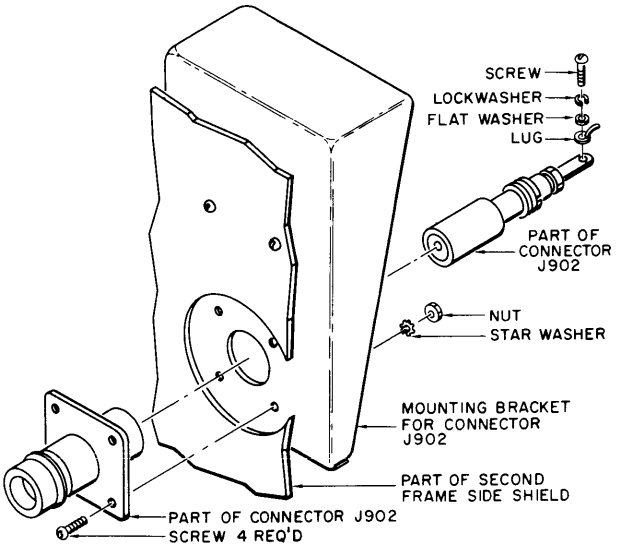
g. Route ac interconnect cable, coming through access hole in shield, to ac input terminal board in bottom rear compartment of second frame; and, appropriately connect colored-coded wires as indicated in the schematic diagram.

h. Mount grounding straps to threaded studs in bottom rear of frames, figure 2- 5 , using remaining hardware from crate 1 bag 2.

i. Temporarily remove the shield from the upper rear of second frame.

j. Temporarily remove the glass window panel from the front of the second frame.

k. Mount connector JJ-137 (contained in crate 2) on the upper right side of second frame (see figure 2-7).



295-10

Figure 2-7. Output Connector, Installation Diagram

STEP 10

a. Properly position shield, figure 2-4, on base assembly for third and fourth frames.

b. Route ac input power cables through rectangular access hole in shield.

c. Using hardware previously removed, tightly bolt shield to base assembly (see figure 2-4).

STEP 11

a. Unpack crate 7.

b. Position third frame on base, figure 2-6, adjacent to second frame.

c. Temporarily remove outer and inner r-f shields from upper rear compartments of the third frame.

d. Temporarily remove glass-window panel from the front of the third frame.

STEP 12

a. Unpack crate 8.

b. Position the fourth frame on base, figure 2-6, adjacent to the third frame.

c. Temporarily remove the large blank panel from bottom front of the fourth frame.

d. Temporarily remove shield from exposed side of the fourth frame.

e. Using hardware from crate 1 bag 5, loosely bolt third and fourth frames to the base assembly (see figure 2-6).

NOTE

The porcelain insulator must be located on outside of frame when assembled so that it is physically inside of the third frame (see figure 2-19).

f. Mount porcelain insulated feedthrough E8114 with hardware (contained in crate 2) to left side of fourth frame.

STEP 13

a. Using hardware from crate 1 bag 6, loosely bolt frames together (see figure 2-6).

b. After all hardware is loosely bolted, so that all frame assemblies are mechanically aligned, tighten all frame to base and frame to frame hardware.

STEP 14

NOTE

Make sure each resistor is placed in its designated position.

Mount fixed resistors R802 through R820 (contained in crate 1) on resistor board, figure 2-8, in bottom rear section of second frame.

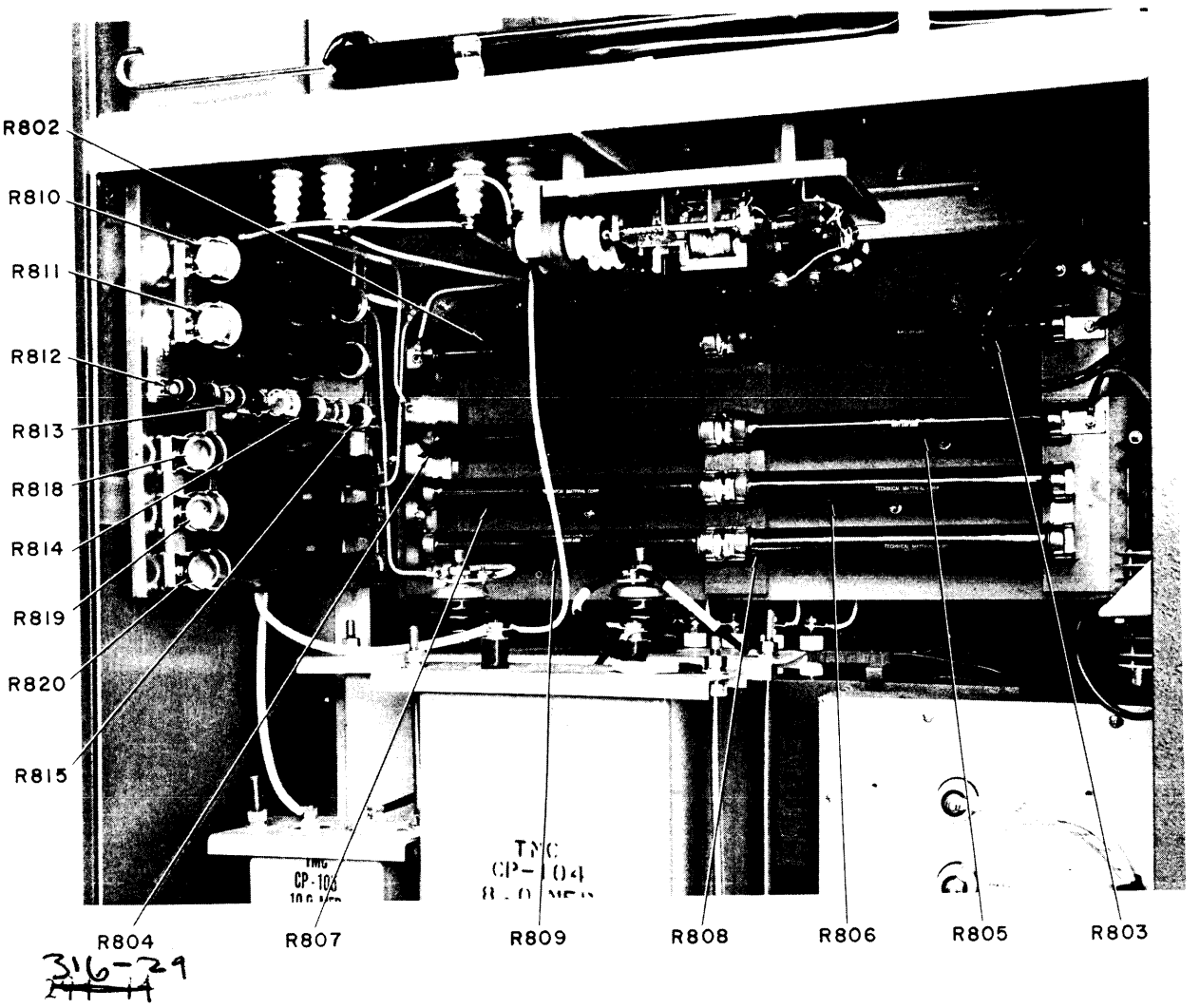


Figure 2-8. Lower Compartment of the Second Frame, Rear View

STEP 15

a. Remove hardware from retaining strap (figure 2-9).

CAUTION

Pins located inside mounting socket for tube V900 must not be bent. Check pins carefully before attempting to install tube in socket.

b. Observe pins inside the tube socket.

c. Carefully lift tube V900 (contained in crate 1), handles

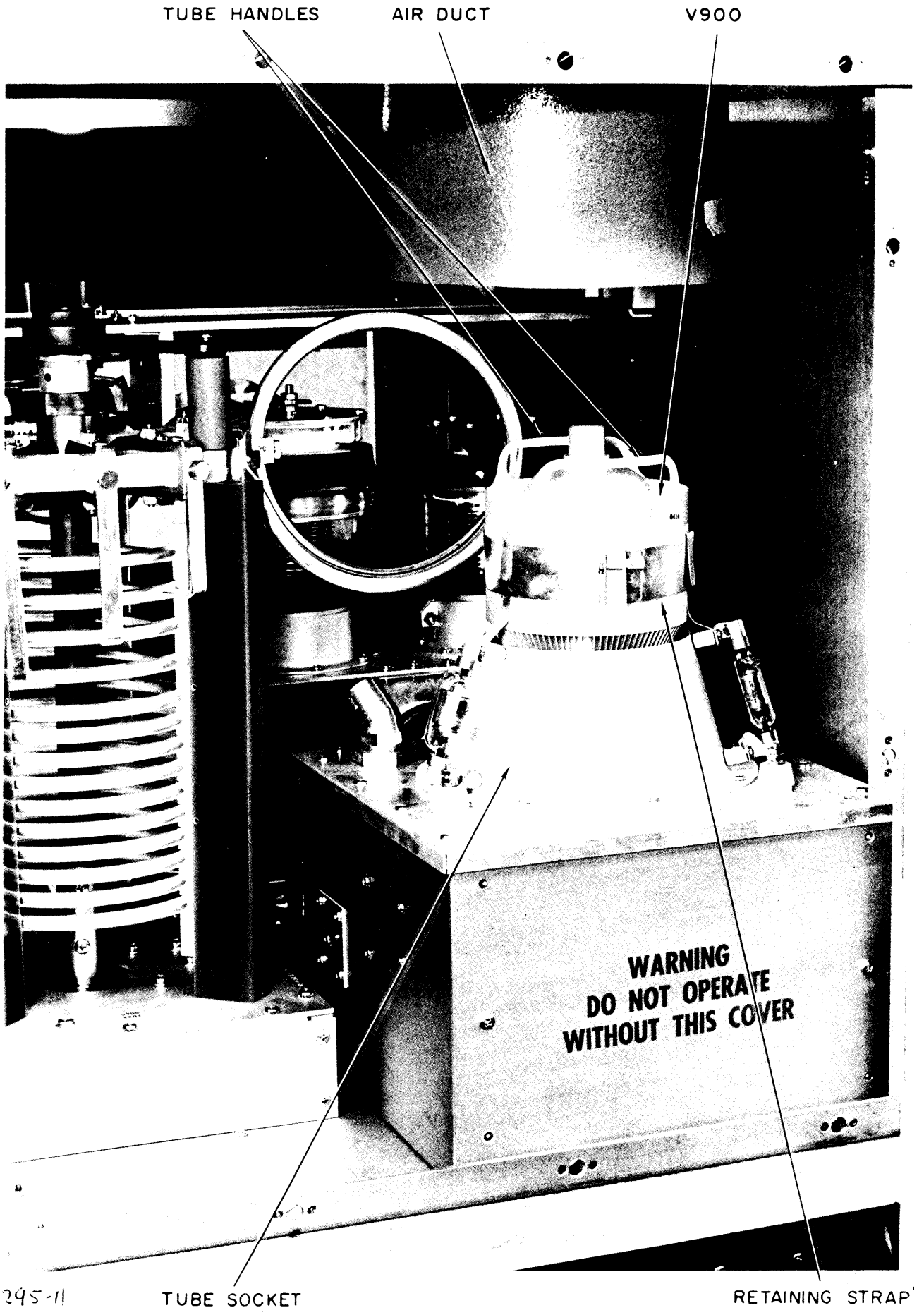


Figure 2-9. Upper Compartment of the Second Frame, Rear View.

STEP 15 (cont)

first, up into air duct in top of frame until base of tube clears socket.

d. Carefully lower tube straight down into socket until slight resistance is encountered. Make sure tube is centered in socket.

e. In one motion while firmly grasping tube handles: rotate tube about a quarter of a turn and push tube firmly down into socket. A slight amount of effort may be required to seat tube. Caution should be observed in seating tube so as not to damage pins in socket. Check tube seating; it must be all the way down and centered in tube socket.

f. Replace retaining strap hardware.

NOTE

When the porcelain insulator is assembled, it is physically located inside the second frame.

g. Mount porcelain insulated feedthrough E7304 with hardware (contained in crate 2) on the wall, toward rear of the third frame (see figure 2-11).

STEP 16

a. Rotate front panel PA TUNE, PA LOAD, and OUTPUT BAL controls, on the second frame, until corresponding counters indicate "000."

b. Rotate the shafts on variable capacitors C916, C927, and C928 (contained in crate 1) until their plates are fully open (minimum capacitance).

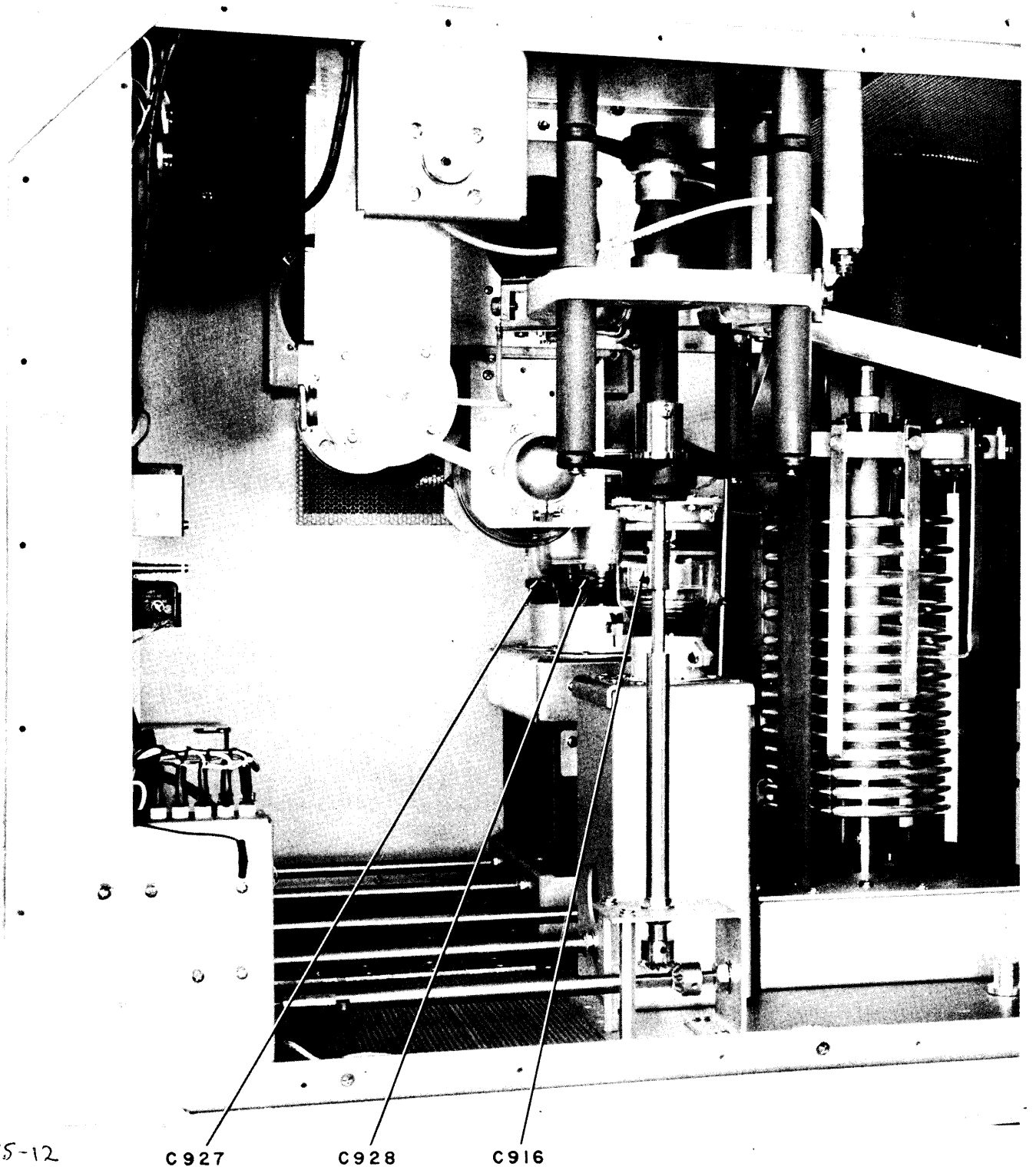


Figure 2-10. Upper Compartment of the Second Frame, Side View.

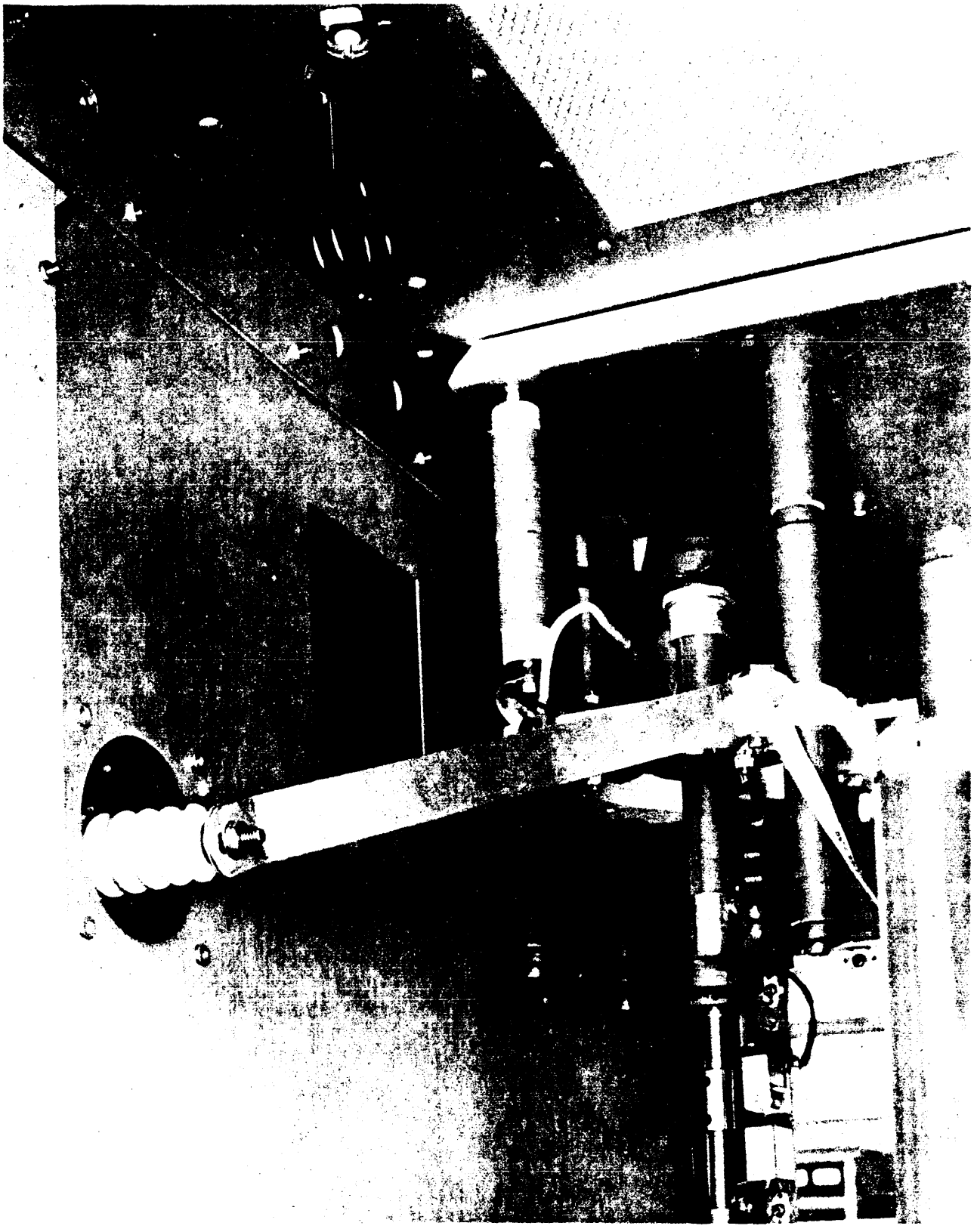


Figure 2-11. Insulated Feed-through E7304 and Connections, Detailed View.

STEP 16 (cont)

NOTE

Gears on the capacitor shafts must mesh with gears on front panel tuning shafts.

c. Install capacitors C928 (PA tune), C927 (PA load), and C916 (output balance), figure 2-10, in their respective flange-clamp mountings. Tighten all retaining hardware.

d. Replace the glass window panel on the front of the frame.

STEP 17

a. Unpack crate 9.

b. Temporarily remove the power distribution control panel from the front of the second frame. To remove panel: Unscrew large slotted hex-head screws on front of panel; Pull panel forward to clear frame; And, carefully rest panel on something of relatively equal height—do not remove or damage wiring connected to panel.

c. Position power transformer T800, figure 2-12, into bottom front of second frame.

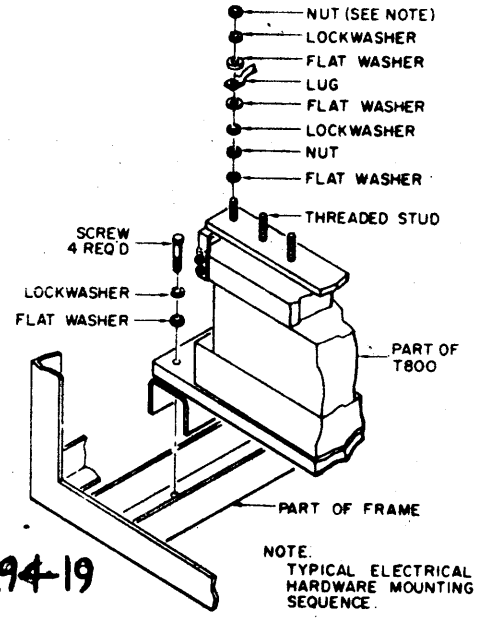


Figure 2-12. Transformer T800, Installation Diagram.

STEP 17 (cont)

d. Using hardware from crate 1 bag 7, tightly bolt T800 to frame.

e. Replace power distribution control panel.

STEP 18

a. Unpack crates 10, 11, and 12.

b. Unbolt crossbar, figure 2-13, on side of frame.

c. Position power transformer T8101, T8102, and T8103 into frame (see figure 2-13).

d. Using hardware from crate 1 bag 8, tightly bolt each transformer to frame.

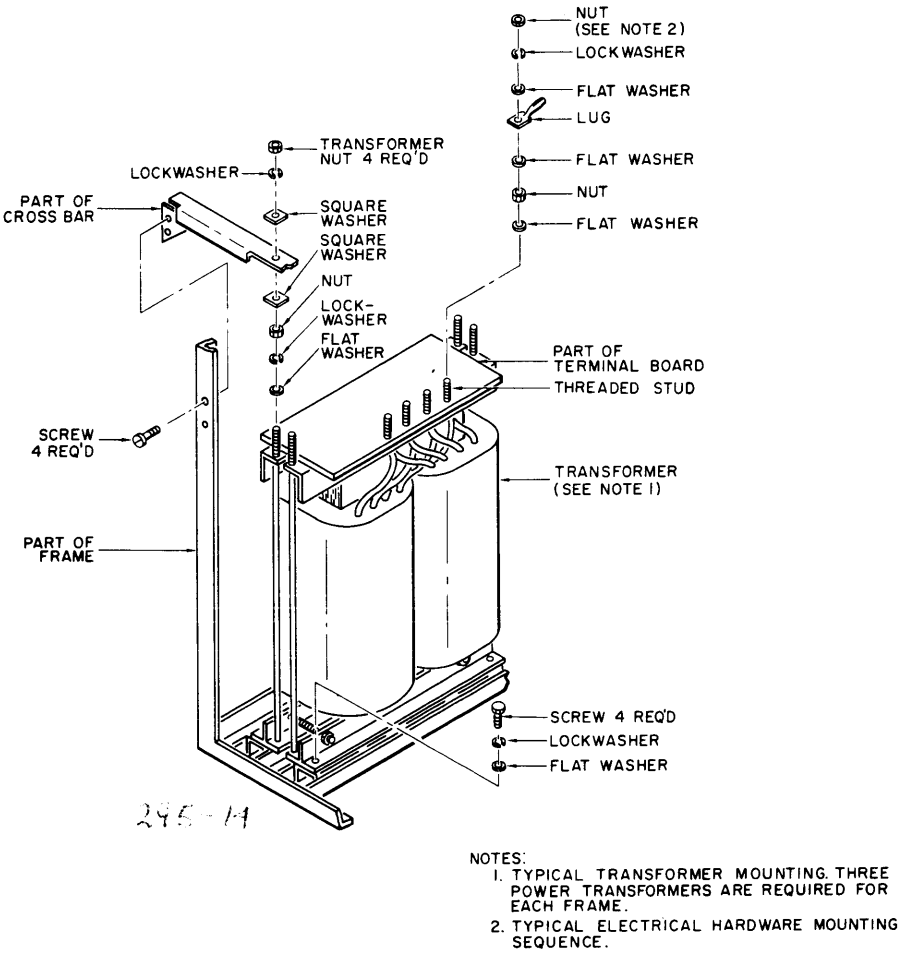


Figure 2-13. Power Transformer, Installation Diagram.

STEP 18 (cont)

e. Connect electrical cables to transformers as indicated by tags on cables in frame.

f. Remount large blank front panel and side shield to frame.

NOTE

Threaded studs on transformers must be connected to the crossbar.

g. Remount crossbar to frame.

STEP 19

a. Unpack crate 13.

b. Temporarily remove the indicator control panel from front of third frame. To remove panel: Unscrew large slotted hex-head screws on front of panel; Pull panel forward to clear frame; And, carefully rest panel on something of relatively equal height—do not remove or damage wiring connected to panel.

NOTE

The off center electrical connecting studs on top of transformer must be located toward rear of frame when T7101 is positioned.

c. Temporarily remove transformer mounting hardware from frame.

d. Position power transformer T7101, into bottom front of the third frame.

e. Using hardware previously removed, tightly bolt T7101 to frame in the following sequence: first a flat washer; second, a lockwasher; and third, a bolt.

f. Connect electrical cables to transformer as indicated by tags on wires in frame.

g. Replace indicator control panel.

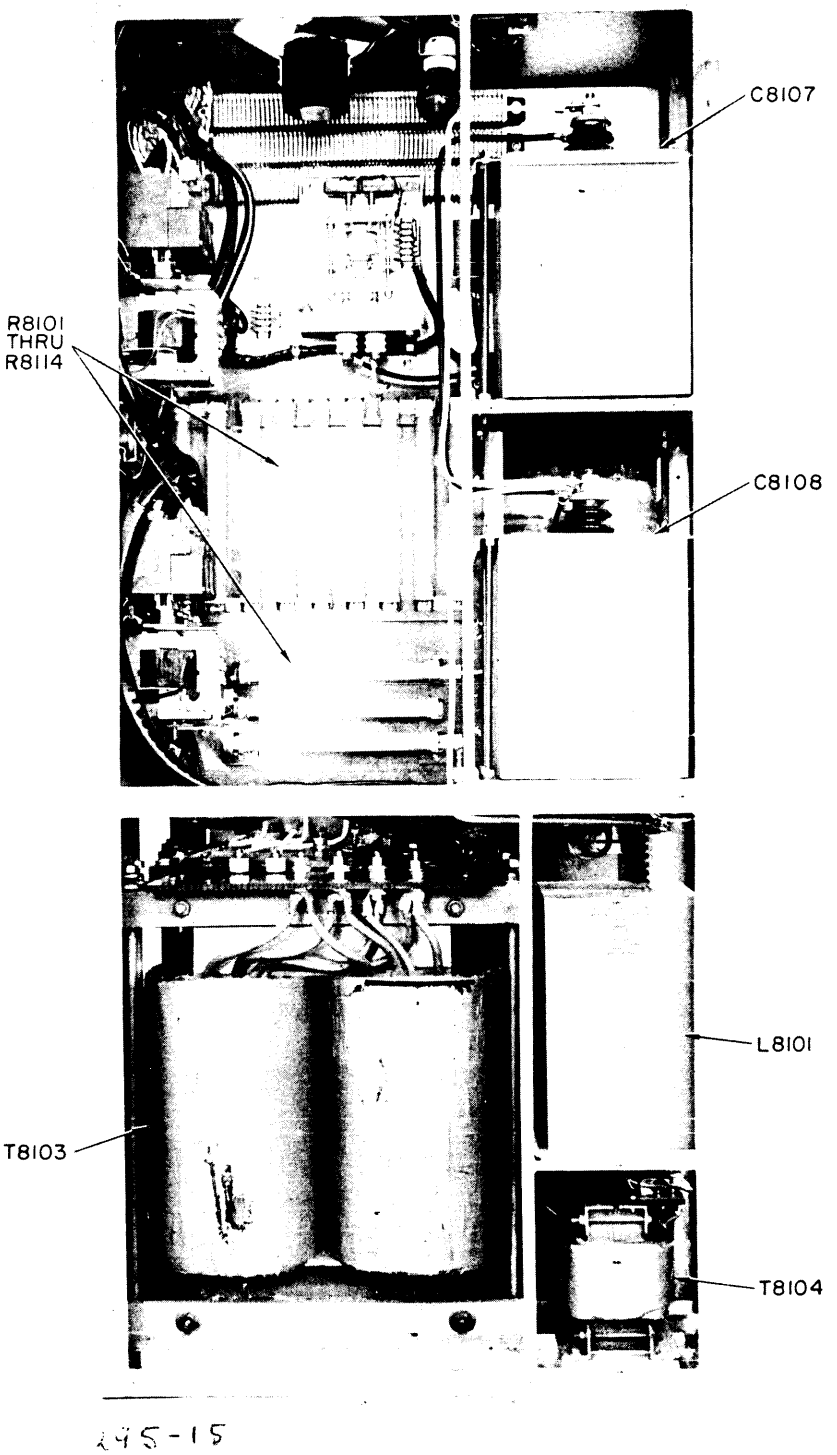
STEP 20

a. Unpack crate 14.

STEP 20 (cont)

CAUTION

Do not damage the four threaded studs underneath choke.



245-15

Figure 2-14. Fourth Frame, Rear View

STEP 20 (cont)

b. Temporarily remove hardware from four studs on bottom of the choke.

c. Position filter choke L8101 into rear of fourth frame, figure 2-14, above auto-transformer T8104. Make sure the two off center porcelain electrodes on top of choke are closiest to side of frame.

NOTE

Electrical connections should be made after capacitors C8107 and C8108 are installed.

d. Using hardware previously removed, mount choke to frame by placing following hardware sequence onto each threaded stud: first, flat washer; second, lock washer; and third, hex-head nut. Tighten mounting hardware.

STEP 21

a. Unpack crate 15.

b. Temporarily remove plexi-glass safety shield, figure 2-15, mounted on rear of fourth frame.

NOTE

Mounting assemblies for both capacitors are identical.

c. Remove capacitor mounting assemblies for capacitors C8107 and C8108 from frame.

d. Position capacitors C8107 and C8108 in frame (figure 2-14).

e. Replace capacitor mounting assemblies (figure 2-15).

f. Replace plexi-glass safety shield on frame.

g. Connect electrical cables to capacitors C8107 and C8108 and choke L8101 as indicated by tags on cables in frame.

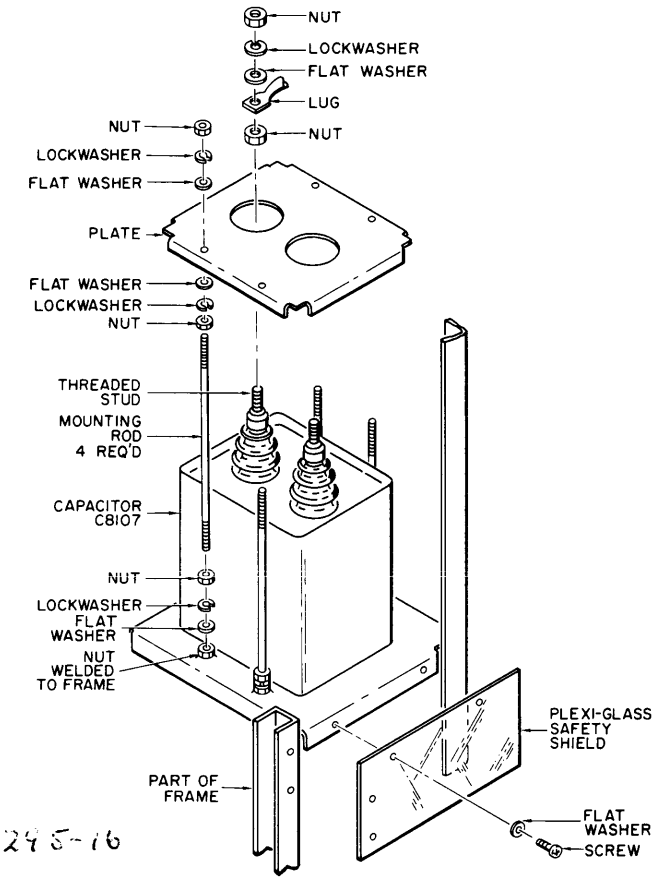


Figure 2-15. Filter Capacitor, Installation Diagram

STEP 22

Mount resistors R8101 through R8114 (contained in crate 1) or resistor board in rear of fourth frame (see figure 2-14).

STEP 23

a. Remove hardware holding rear bracket, figure 2-16, to top of frame and end of coil L7304 attached to angle bracket.

b. Loosen set screws on both flange-clamps.

c. Position capacitor C7325 (contained in crate 2). And remount rear flange-clamp bracket to top of frame (figure 2-16).

d. Tighten both flange-clamp set screws to insure a good electrical connection to C7325.

e. Remount coil L7304 to the angle bracket.

f. Mount capacitor C7316 (contained in crate 2).

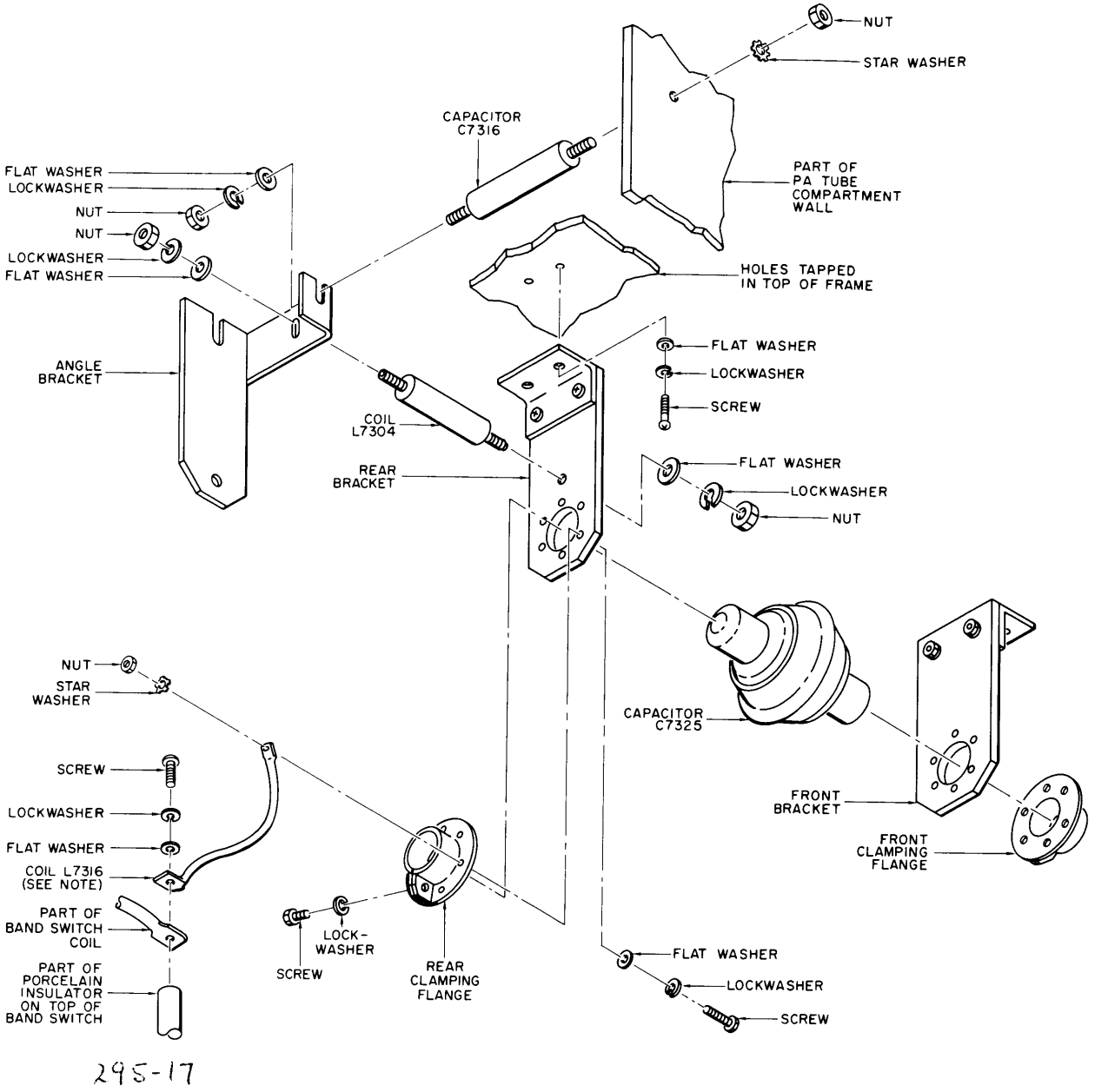


Figure 2-16. Third Frame Pa Circuit Components, Installation Diagram.

STEP 24

a. Unpack crate 16.

b. Back out three allen head shaft set screws, figure 2-17, in shaft on band switch mounting plate in rear of fourth frame.

c. Temporarily remove hardware from threaded studs on band switch mounting plate.

NOTE
Do not remove front bracket from leg of bandswitch.

c. Temporarily remove three bolts from front bracket, figure 2-17, which is attached to front left leg of band switch.

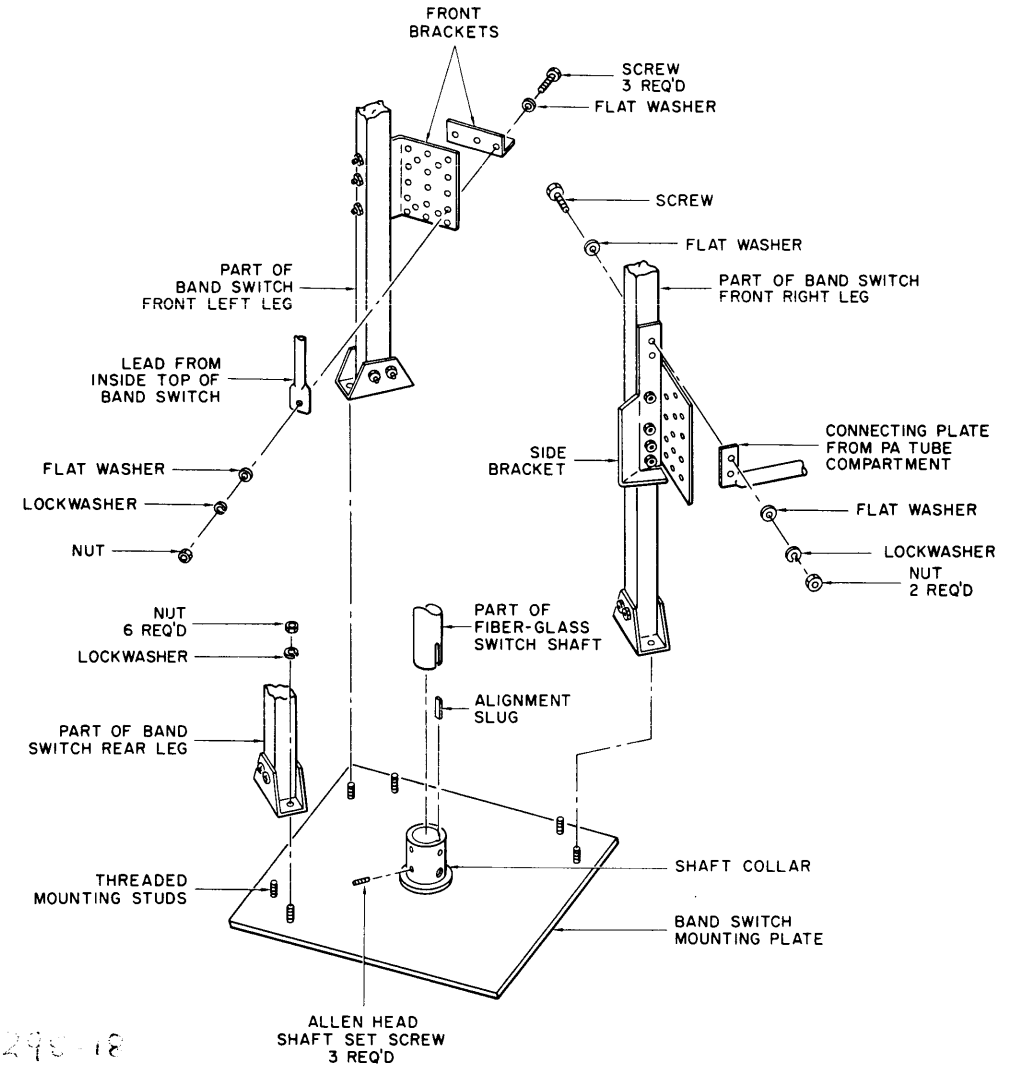


Figure 2-17. Third Frame Band Switch, Installation Diagram.

d. Temporarily remove two bolts, figure 2-17, from top of side bracket on front right leg of band switch.

e. Tilt top of band switch forward and carefully insert into rear of fourth frame over its mounting plate. Once the switch is in this position, carefully lower switch onto mounting plate so that the six threaded mounting studs and respective

holes in all leg brackets of switch align. Also check alignment of fiber-glass shaft alignment slug, and shaft collar.

f. Using hardware previously removed, secure band switch to mounting plate (see figure 2-17).

g. Tighten three allen head set screw in shaft on mounting plate to secure fiber-glass switch shaft.

h. Replace two bolts in side bracket, include electrical connecting plate lead coming through adjacent pa tube compartment shield.

i. Replace three bolts that attach front brackets, figure 2-17 include lead from inside top of band switch in hardware sequence.

j. Connect coil L7316 (taped to top of band switch during shipment of transmitter) to porcelain insulator on top of bandswitch and to flange-clamp (electrically connected to capacitor C7325, see figures 2-17 and 2-18).

STEP 25

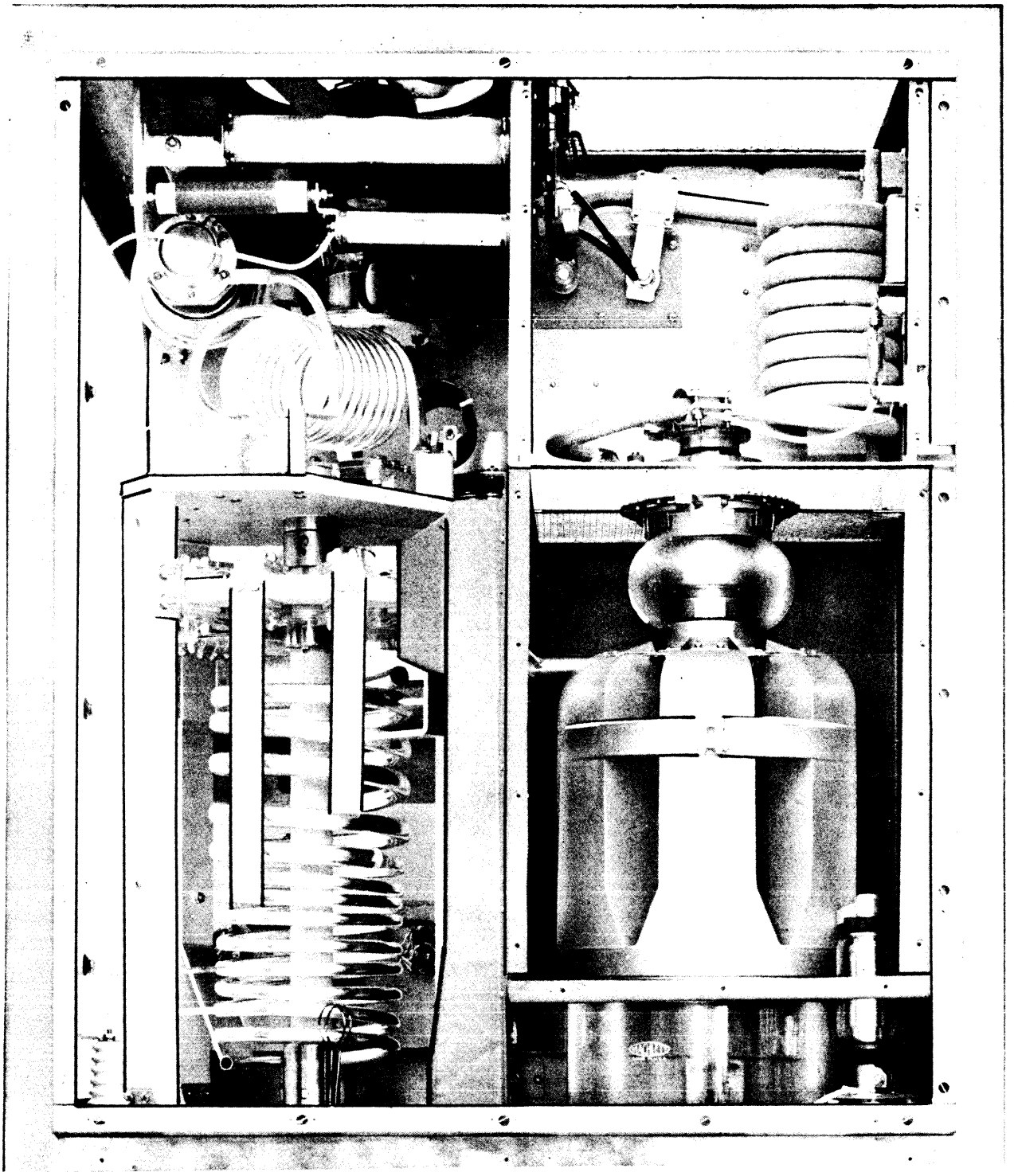
NOTES

1. Gears, figure 2-19, on capacitors C7330 and C7332 shafts must mesh with gears on front panel tuning shafts.

2. Shaft, gear assemblies and bracket assembly for capacitor C7331 must line-up (see figure 2-19).

a. Insert capacitors C7328, C7330, C7331, and C7332 (contained in crate 2) into respectively designated mounting assemblies (see figure 2-19).

b. With tandem chain, figure 2-19, removed, rotate shafts of capacitors C7331 and C7332 so that plates in both capacitors are fully closed.



295-19

Figure 2-18. Third Frame Band Switch and Pa Circuit Components, Rear View.

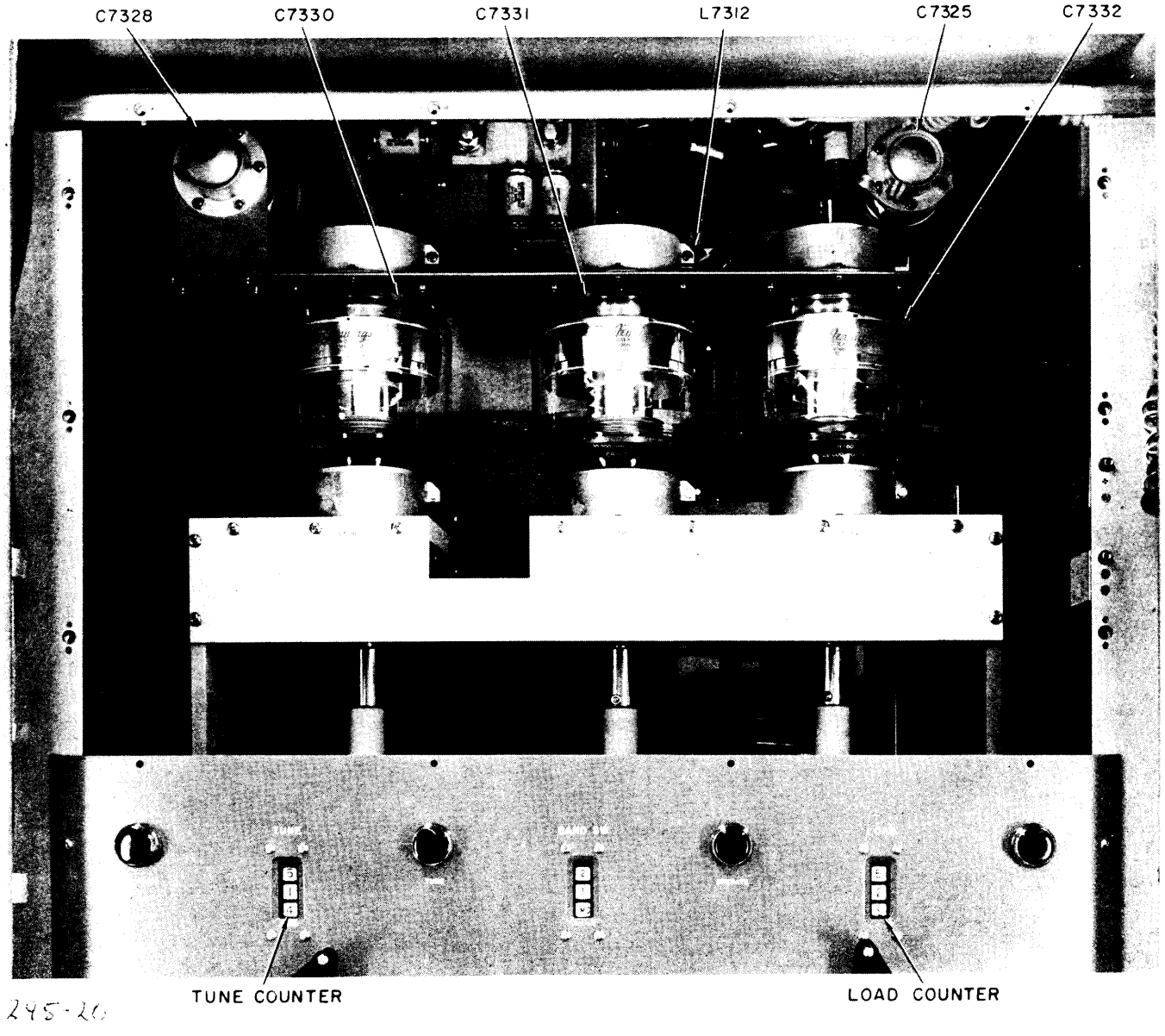


Figure 2-19. Third Frame Pa Compartment, Front Views (sheet 1 of 3).

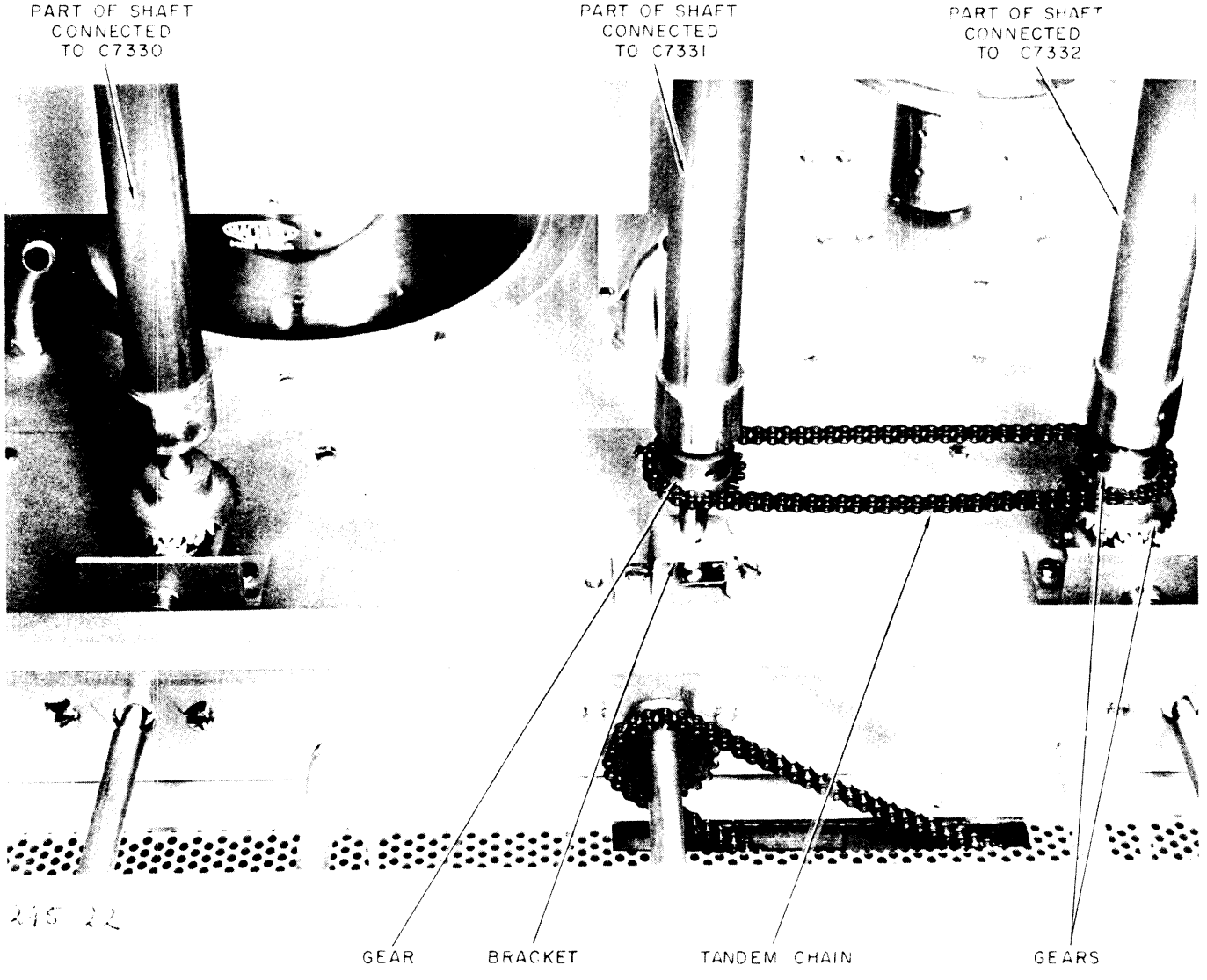


Figure 2-19. Third Frame Pa Compartment, Front Views (sheet 3 of 3).

Figure 2-19. Third Frame Pa Compartment, Front Views (sheet 2 of 3).

STEP 25 (cont)

CAUTION

Do not force control past its mechanical stop.

c. With tandem chain replaced, figure 2-19, rotate front panel LOAD control until capacitor plates are fully open.

d. Set front panel LOAD counter to "000."

NOTES

1. DO NOT overtighten set screws.
2. Set screw on flange-clamp (located inside the pa tube compartment) holding capacitor C7328, which is not accessible through front of the frame, will be tighten later.
3. Adjust capacitor C7330 and front panel TUNE control in a similar manner as capacitors C7331 and C7332.

e. Tighten set screws on flange-clamps holding capacitors C7328, C7330, C7331, and C7332.

f. Connect coil L7312 (contained in crate 2) between flange-clamp around capacitor C7331 and porcelain insulator on top of band switch.

g. Replace glass-window panel (previously removed) on front of the third frame, in front of the capacitors just installed.

STEP 26

a. Unpack crates 17, 18, 19.

NOTE

The standing wave control drawer, shipped installed in front of first frame, must be removed and installed in the rear of the frame.

STEP 26 (cont)

b. Install each drawer assembly in its designated position, figure 2-20, in first frame as it is unpacked. To install any drawer assembly, proceed as follows:

(1) Untape or unstrap cable assemblies, cable retractors, and all other components secured to the inside of frame for shipment.

(2) Pull center section of the drawer track out until it locks in an extended position.

(3) Position slide mechanisms of drawer in tracks; and, ease drawer forward into rack until lock buttons engage hole in track.

(4) Make necessary drawer cable and electrical connections.

(5) Press lock buttons on track; and, slide drawer completely into compartment.

(6) Using hardware from crate 1 bag 9, secure front panel of drawer to frame.

STEP 27

a. Unpack crate 21.

b. Temporarily remove screen cover from top of RFC Amplifier drawer.

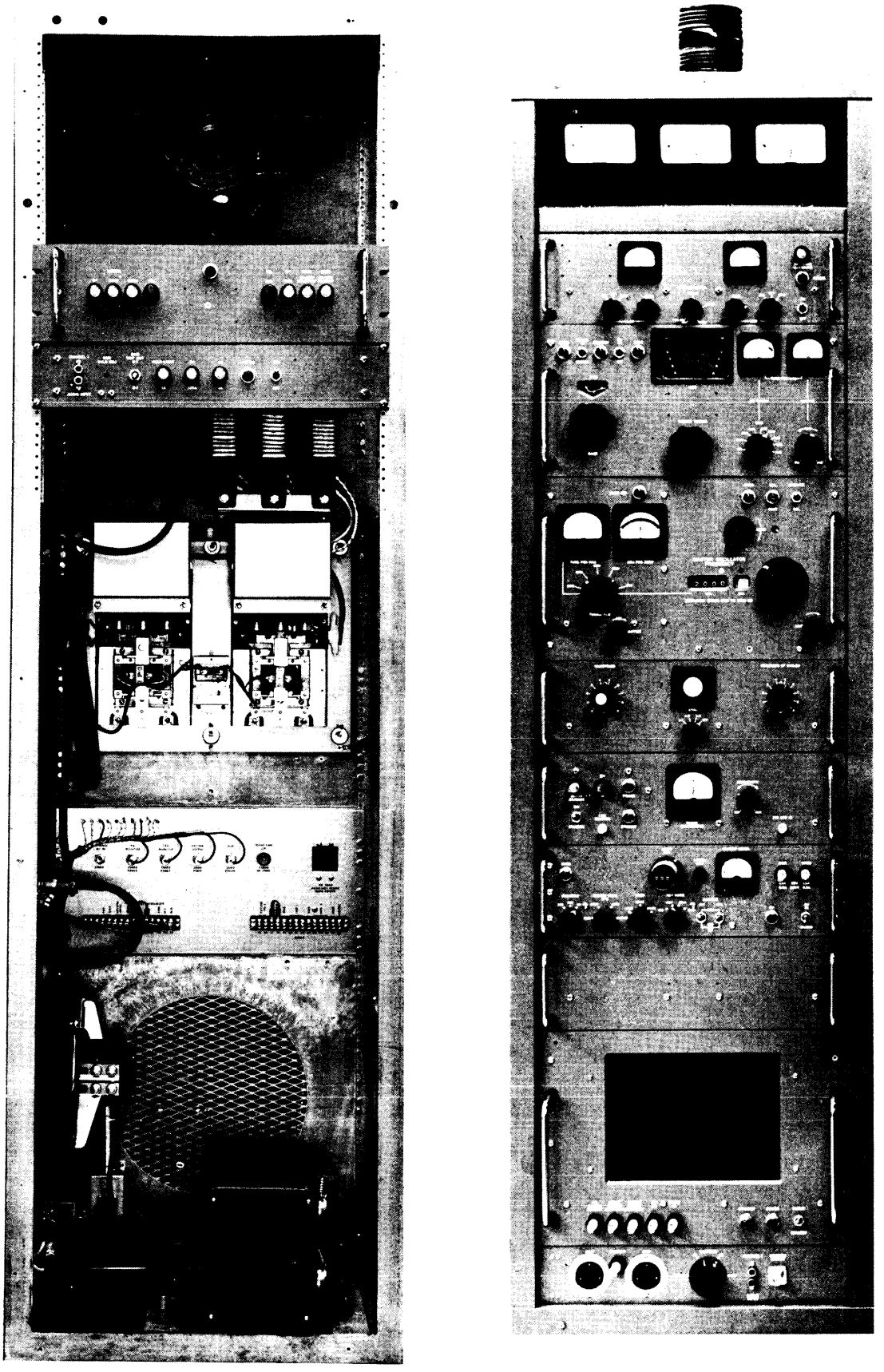
c. Loosen screw on retaining strap (see figure 2-21).

d. Insert tube V203 (contained in crate 1) into tube socket.

e. Tighten retaining strap screw so that V203 is held securely in place.

f. Replace screen cover on top of drawer.

g. Install drawer assembly in middle bay of second frame.



244-20

Figure 2-20. First Frame, Front and Rear View.

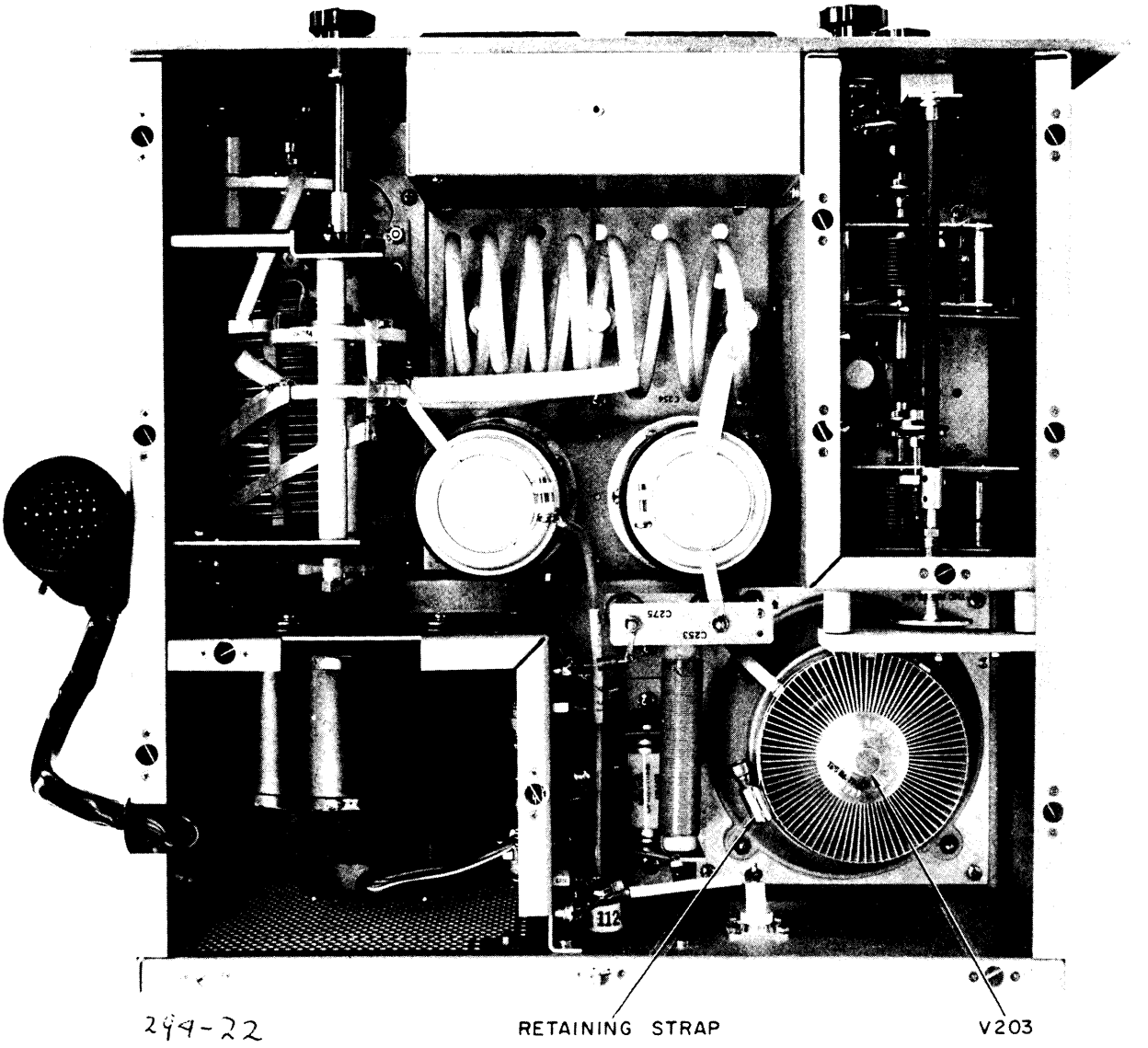


Figure 2-21. RFC Amplifier Drawer, Top View.

STEP 28

a. Unpack crate 22.

b. Insert six high voltage rectifier tubes V600 through V605 (contained in crate 1), figure 2-22 into tube sockets in high voltage rectifier drawer.

c. Attach electrical plate connector caps to tubes.

d. Install drawer into front of second frame.

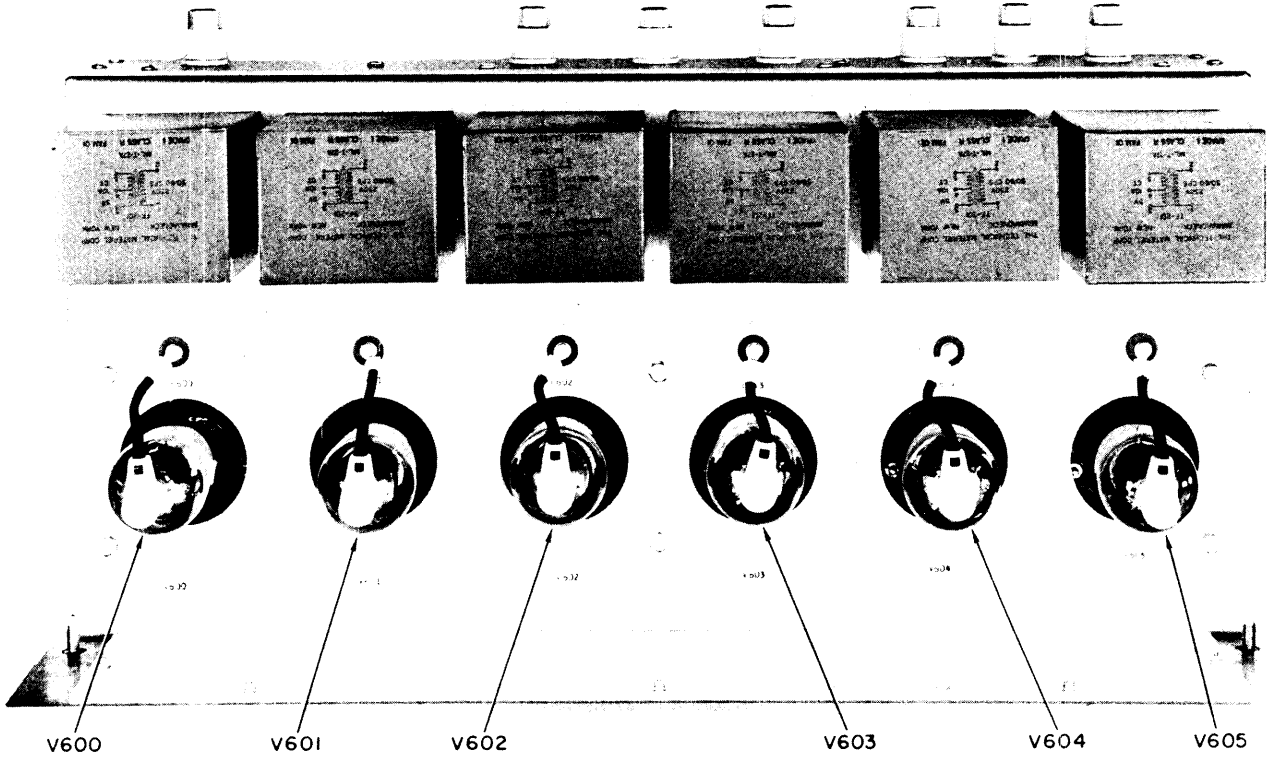


Figure 2-22. High Voltage Rectifier Drawer 600, Top View.

STEP 29

a. Unpack crate 23.

b. Install bias power supply drawer into front of third frame.

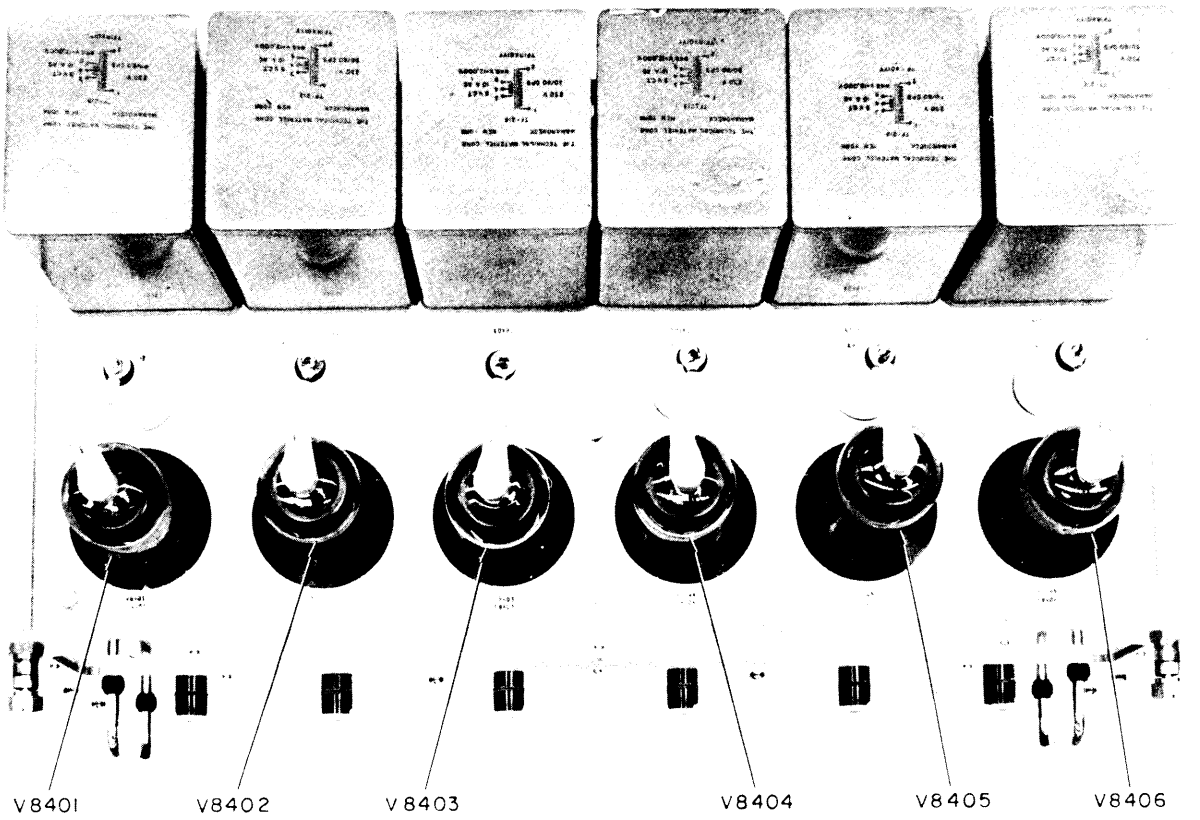
STEP 30

a. Unpack crate 24.

b. Insert six high voltage rectifier tubes V8401 through V8406 (contained in crate 2), figure 2-23, into high voltage rectifier drawer.

c. Attach electrical plate connector caps to tubes.

d. Install drawer assembly into front of first open bay up from bottom of fourth frame.



295-23

Figure 2-23. High Voltage Rectifier Drawer 8400, Top View.

STEP 31

NOTES

1. Hardware on the rods must be temporarily removed to position rod.

2. Rods must be inserted into bowl assemblies from inside of the frame.

3. Hardware must be replaced to secure rods and bowl assemblies.

Insert threaded bowl rods (contained in crate 2) into porcelain bowl assemblies located on top inside of the fourth frame.

STEP 32

a. Unpack crate 25.

b. Temporarily remove screen cover from top of the crowbar drawer.

c. Install the following components (contained in crate 2), figure 2-24, into the drawer:

1. Resistors R8301, R8302, and R8303.

2. Electron tube V8301.

d. Replace screen cover on drawer.

e. Install crowbar drawer into front of fourth frame, above high voltage rectifier drawer (previously installed).

STEP 33

a. Unpack crate 26.

b. Temporarily remove screen cover from top of antenna tuner drawer.

c. Loosen set screw, figure 2-25, on both flange-clamps.

d. Temporarily remove hardware holding the front bracket to bottom of drawer.

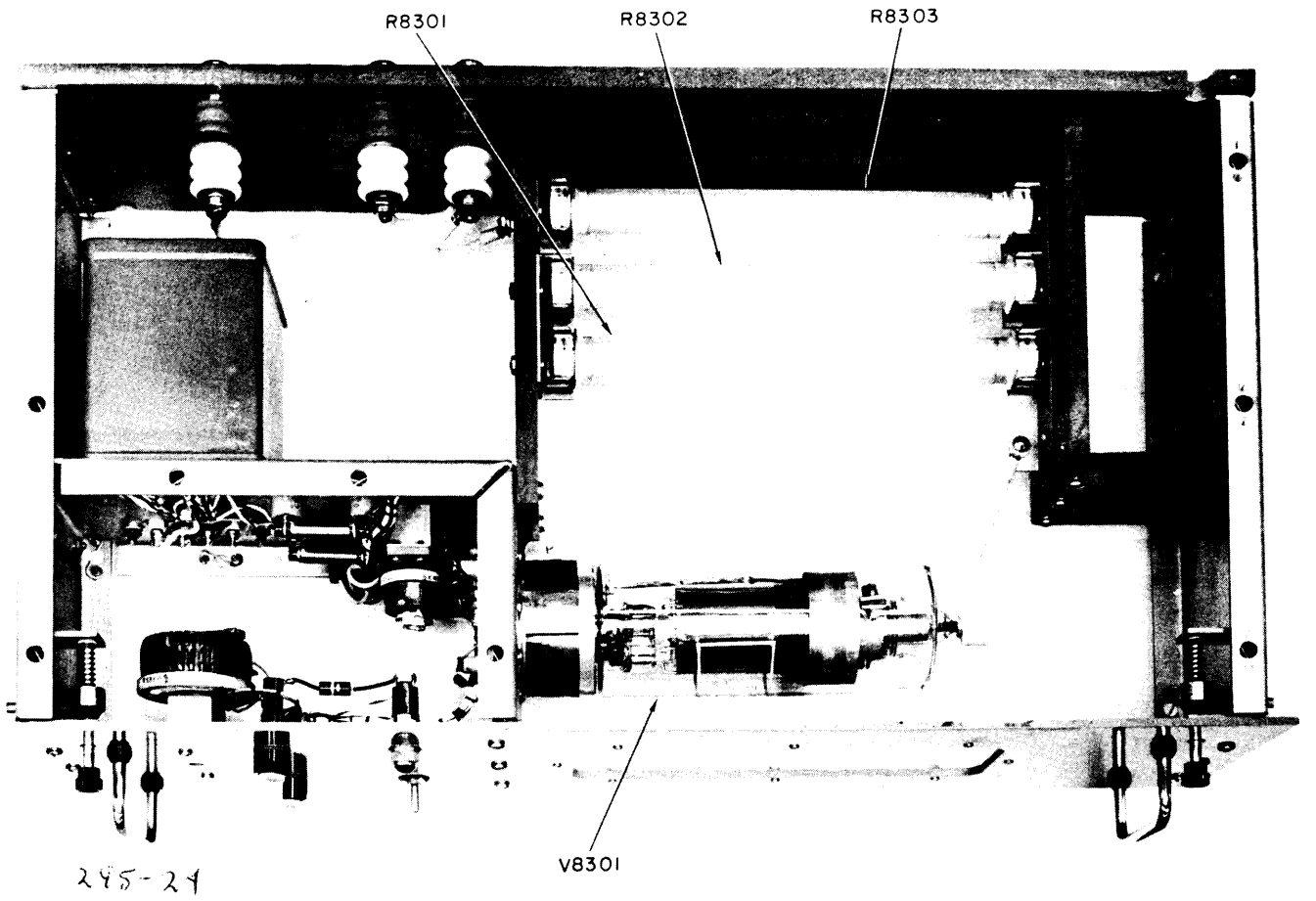


Figure 2-24. Crowbar Drawer 8300, Top View.

STEP 33 (cont)

e. Position capacitor C8207 (contained in crate 2) in between flange clamps; remount front bracket on bottom of drawer; and, tighten set screws to insure good electrical connection.

f. Replace screen cover on top of drawer.

g. Install antenna tuner drawer into the front of fourth frame (top bay), above crowbar drawer previously installed.

STEP 34

a. Unpack crate 27.

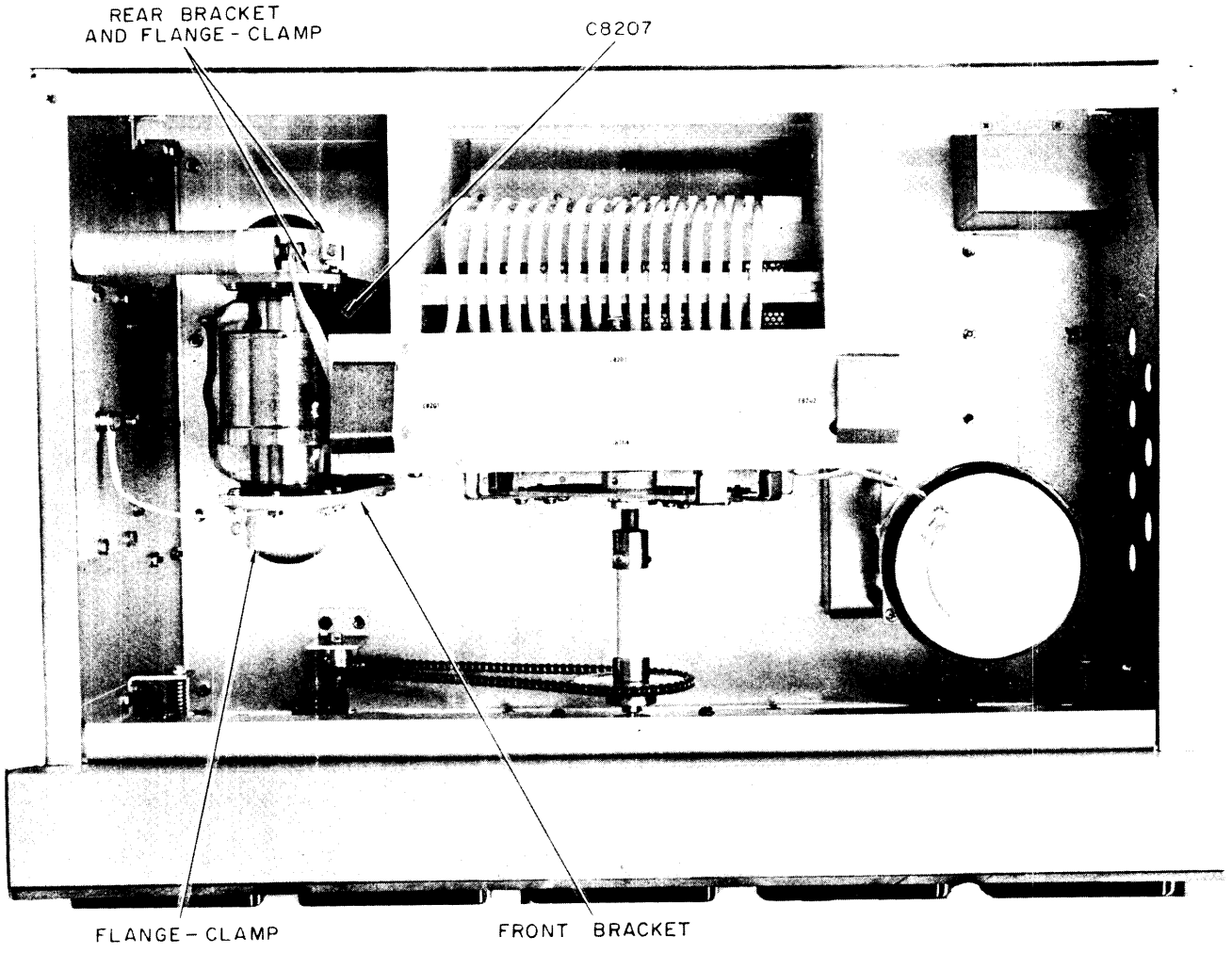


Figure 2-25. Antenna Tuner Drawer 8200, Top View.

b. Temporarily remove hardware retaining inner screen, figure 2-26, to walls of tube compartment.

c. Temporarily remove hardware from slip ring 4; and then remove the heat sink, figure 2-26, from tube compartment.

d. Carefully insert tube V7301 into heat sink.

e. Place heat sink back into tube compartment.

f. Temporarily remove electrical connector cap assembly (for capacitor C7326) from heat sink.

g. Loosen set screw on flange-clamp and insert capacitor C7326 (contained in crate 2) into flange-clamp.

h. Place electrical connectors cap assembly on capacitor C7326; and remount assembly to heat sink.

i. Tighten set screw on flange-clamp to insure a good electrical connection to C7326.

j. Replace hardware on slip ring 4; tighten screws until ring holds heat sink securely in place.

k. Loosen allen head set screw on slip ring 3 and place down on tube.

l. Reinstall inner screen in position; and, secure teeth on screens to tube with slip ring 3 by tightening set screw (see figure 2-18).

CAUTION

Slip rings 1 and 2, figure 2-
must not touch each other or
screens.

m. Place slip rings 2 and 1 (in this order), figure 2-18, on tube and tighten set screws.

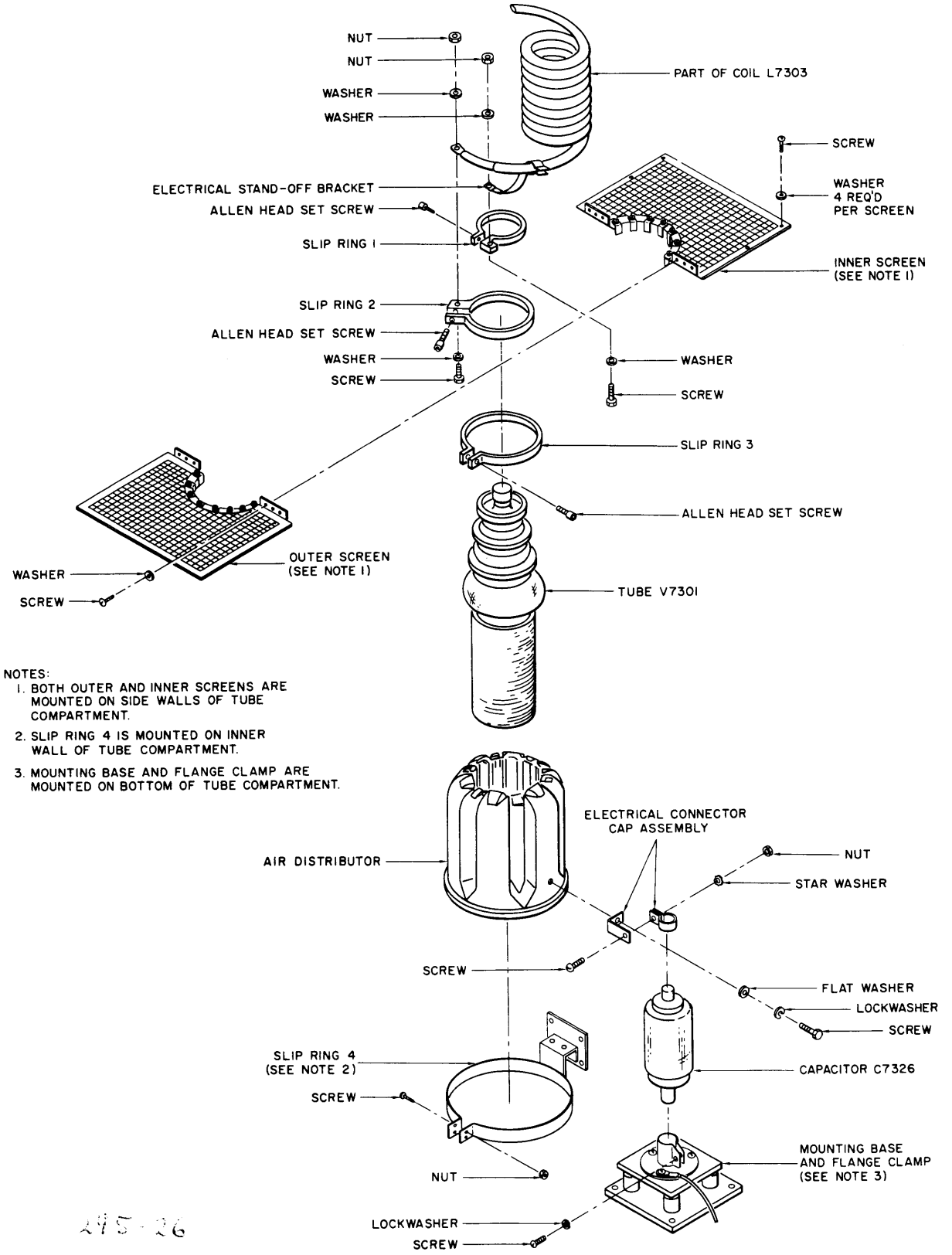


Figure 2-26. Third Frame Pa Tube Compartment, Installation Diagram.

STEP 34 (cont)

n. Tighten the set screw on the flange-clamp, located on inner compartment wall behind coil L7303, that holds one end of capacitor C7328 (previously installed). Do not overtighten set screw.

o. Replace shield covers on pa tube compartment.

p. Replace outer metal shield cover on upper section of third frame.

STEP 35

Replace all shields, previously removed, on appropriate frames.

STEP 36

a. Remove one side of crates 28 and 29.

NOTE

To prevent covers and trim from being scratched, do not remove items from a crate until the item is called for in the procedure.

b. Check each item contained against the equipment supplied list.

STEP 37

Using hardware from crate 1 bag 11, mount rear door hinges (contained in crate 1) on rear of the frames.

STEP 38

a. Appropriately position cover tops MS-1699 and MS-1997 (contained in crates 28 and 29, respectively) on top of the frames (see figure 2-28).

b. Using hardware from crate 1 bag 14, tightly bolt cover tops to respective frames.

STEP 38 (cont)

c. Insert appropriate size button plugs (contained in crate 1) into cover tops to frame mounting holes.

STEP 39

Using hardware from crate 1 bag 10, assemble and mount the following items (contained in crate 1) as prescribed.

(1) Assembly door latch plates, figure 2-27, to door latch brackets with two phillips flat head screws.

(2) Mount the resultant door latch assemblies on top and bottom, front and rear, of frames (see figure 2-26).

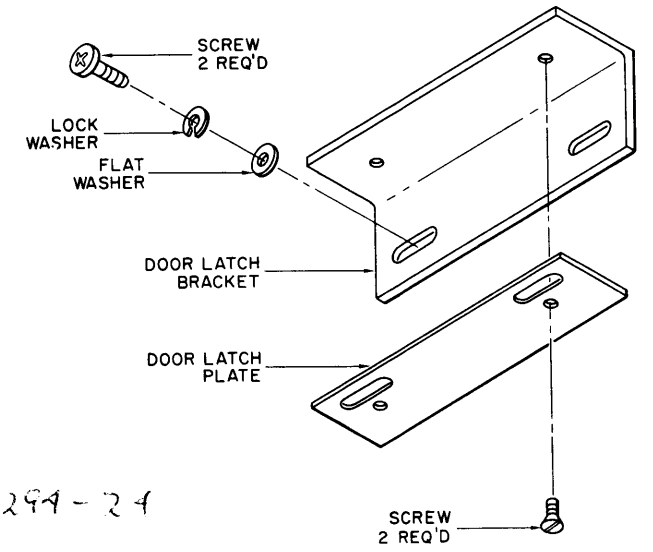


Figure 2-27. Door Latch Plates and Brackets, Installation Diagram.

STEP 40

a. Temporarily remove two sets of mounting hardware from threaded studs on bottom of high voltage lamp socket assembly (contained in crate 1).

b. Position lamp socket assembly on cover top, above first frame (see figure 2-20).

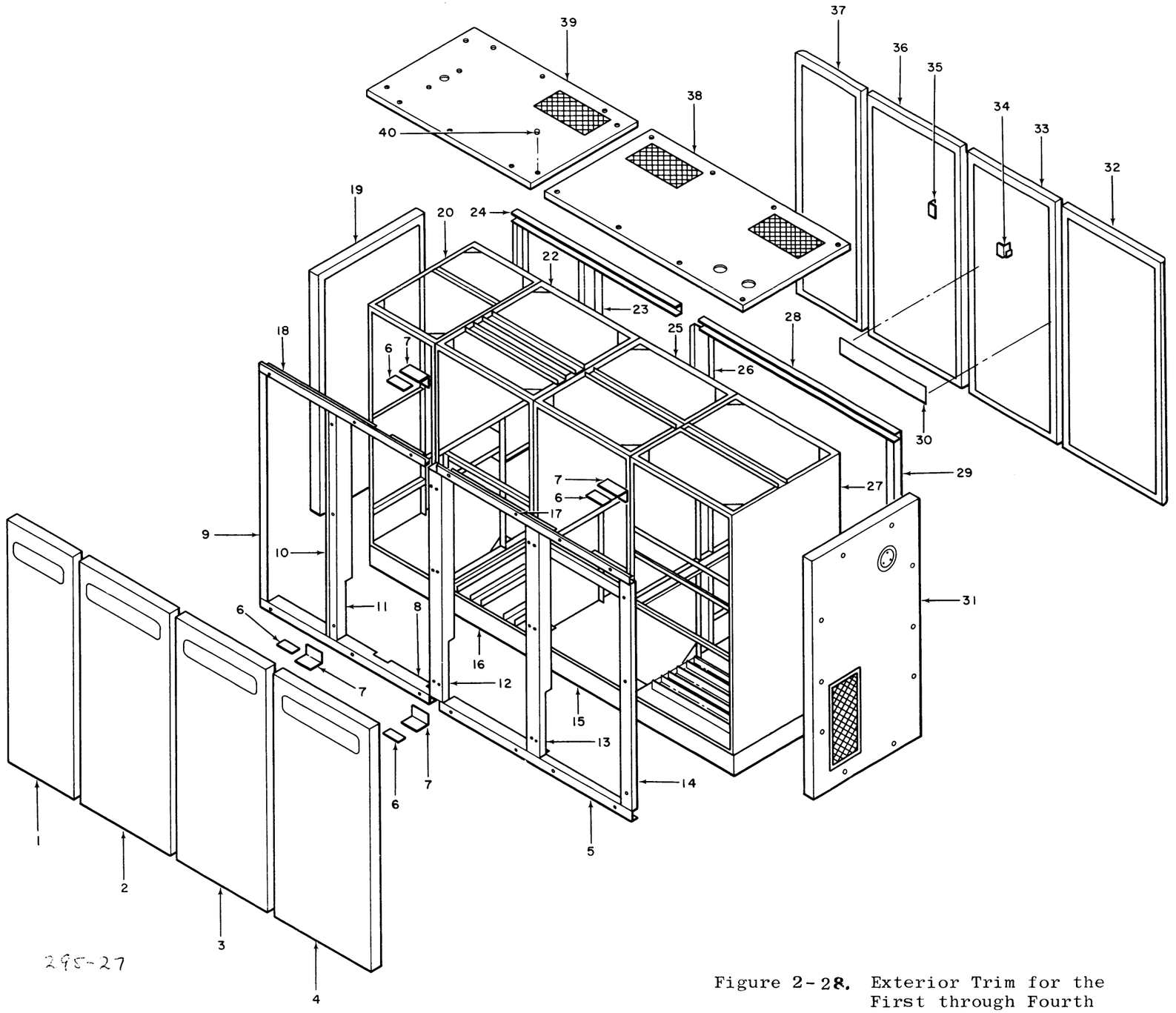


Figure 2-28. Exterior Trim for the First through Fourth Frames, Installation Diagram.

LEGEND

1. FIRST FRAME FRONT DOOR
2. SECOND FRAME FRONT DOOR
3. THIRD FRAME FRONT DOOR
4. FOURTH FRAME FRONT DOOR
5. THIRD AND FOURTH FRAME BOTTOM FRONT TRIM STRIP
6. DOOR LATCH PLATE
7. DOOR LATCH BRACKET
8. FIRST AND SECOND FRAME BOTTOM FRONT TRIM STRIP
9. FIRST FRAME LEFT FRONT TRIM STRIP
10. FIRST FRAME RIGHT FRONT HINGED TRIM STRIP
11. SECOND FRAME LEFT FRONT TRIM STRIP
12. SECOND AND THIRD FRAME FRONT TRIM STRIP
13. THIRD AND FOURTH FRAME FRONT TRIM STRIP
14. FOURTH FRAME RIGHT
15. THIRD AND FOURTH FRAME BASE
16. FIRST AND SECOND FRAME BASE
17. THIRD AND FOURTH FRAME TOP FRONT TRIM STRIP
18. FIRST AND SECOND FRAME TOP FRONT TRIM STRIP
19. FIRST FRAME SIDE PANEL
20. FIRST FRAME
21. FIRST FRAME REAR TRIM STRIP
22. SECOND FRAME
23. FIRST AND SECOND FRAME REAR TRIM STRIP
24. FIRST AND SECOND FRAME TOP REAR TRIM STRIP
25. THIRD FRAME
26. SECOND AND THIRD FRAME REAR TRIM STRIP
27. FOURTH FRAME
28. THIRD AND FOURTH FRAME TOP REAR TRIM STRIP
29. THIRD AND FOURTH FRAME REAR TRIM STRIP
30. THIRD FRAME CENTER REAR TRIM STRIP
31. FOURTH FRAME SIDE PANEL
32. FOURTH FRAME REAR DOOR
33. THIRD FRAME REAR DOOR
34. REAR DOOR BRACKET
35. REAR DOOR BRACKET
36. SECOND FRAME REAR DOOR
37. FIRST FRAME REAR DOOR
38. THIRD AND FOURTH FRAME COVER
39. FIRST AND SECOND FRAME COVER
40. BUTTON PLUG

STEP 40 (cont)

NOTES

1. The large rubber washer must be placed between socket and cover when mounting.

2. The two wire leads coming from the bottom of socket feed through hole in cover and frame; and, connect to terminal board E3003 (mounted inside top of first frame).

c. Using hardware previously from socket assembly, replace in the following sequence: first, a flat washer; second, a lock washer; and third, a nut. Tighten hardware so that lamp socket is held securely in place; do not over tighten.

STEP 41

a. Using hardware from crate 1 bag 12, push on the tinnerman type clip-nuts onto small "U" shaped brackets welded to front of the first through four frames.

NOTE

Refer to figure 2-28.

b. Using hardware from crate 1 bag 12, mount the following items (contained in crate 28) to respective frames as follows:

(1) First and second frame front top and bottom trim strips MS-1635 and MS-1636.

(2) Third and fourth frame front top and bottom trim strips MS-2028 and MS-3645.

(3) First and second frame front hinged trim strip MS-1634.

b. (4) Second and third frame front trim strip MS-2026.

(5) Third and fourth frame front trim strip MS-2027.

(6) Fourth frame front trim strip MS-2025.

(7) First and second frame rear top and bottom trim strips MS-1672.

(8) Third and fourth frame rear top and bottom trim strips MS-2053.

(9) First frame rear right side trim strip MS-1670.

(10) First and second frame rear trim strip MS-1669.

(11) Second and third frame rear trim strip MS-2052.

(12) Third and fourth frame rear trim strip MS-2051.

(13) Fourth frame rear left side trim strip MS-1671.

(14) Third frame center rear trim strip MS-2300.

NOTE

It may be necessary to adjust top and bottom door latch assemblies, so that doors close properly.

(15) First frame front door MS-2119.

(16) Second frame front door MS-2120-1.

(17) Fourth frame front door MS-2118.

(18) Third frame front door MS-2120-2.

(19) First frame rear door MS-1648.

(20) Fourth frame rear door MS-1647.

c. Mount first frame hinged front right and left side trim strips MS-1637 and MS-1920 (contained in crate 28).

d. Mount second and third frame rear door MS-2037 (contained in crates 28 and 29) on respective rear door hinge.

STEP 41 (cont)

e. Using hardware from crate 1 bag 13, mount side panels MS-2117 and MS-2116 (contained in crate 28) to the side of the first and fourth frames, respectively.

f. Insert appropriate size button plugs (contained in crate 1) into side panel to frame holes.

STEP 42

Assemble air ducts and appropriately mount, figure 2-2, on the transmitter.

STEP 43

Connect the antenna transmission line(s) to the transmitter. Operating with an unbalanced output, the transmission line is connected to the standard 3-1/8 inch EIA flange connector on top of the third frame. Operating with a balanced output, the transmission lines are connected to the bowl assemblies on top of the fourth frame.

STEP 44

a. Inspect the contents of all packing crates that have been opened. Make sure miscellaneous items (technical manuals, test data, tube warranties, extra hardware, or etc) have been removed before dispensing with packing materiel and shipping crates.

b. Any remaining crates are spare parts for the transmitter. These crates may be stored as desired.

STEP 45

CAUTION

Make sure primary ac input power is off; DO NOT apply power to the transmitter.

a. Connect ac input power cables to the ac input switch box. Observe proper phasing when connecting cables.

b. Refer to the operation and maintenance manual for transmitter operating procedures.

CHAPTER 3

CIRCUIT DIAGRAMS

3-1. INTRODUCTION.

This chapter presents all of the circuit diagrams necessary for transmitter installation. Circuit diagrams not directly related to installation may be found in the applicable operations and maintenance equipment manual (refer to table 1-5).

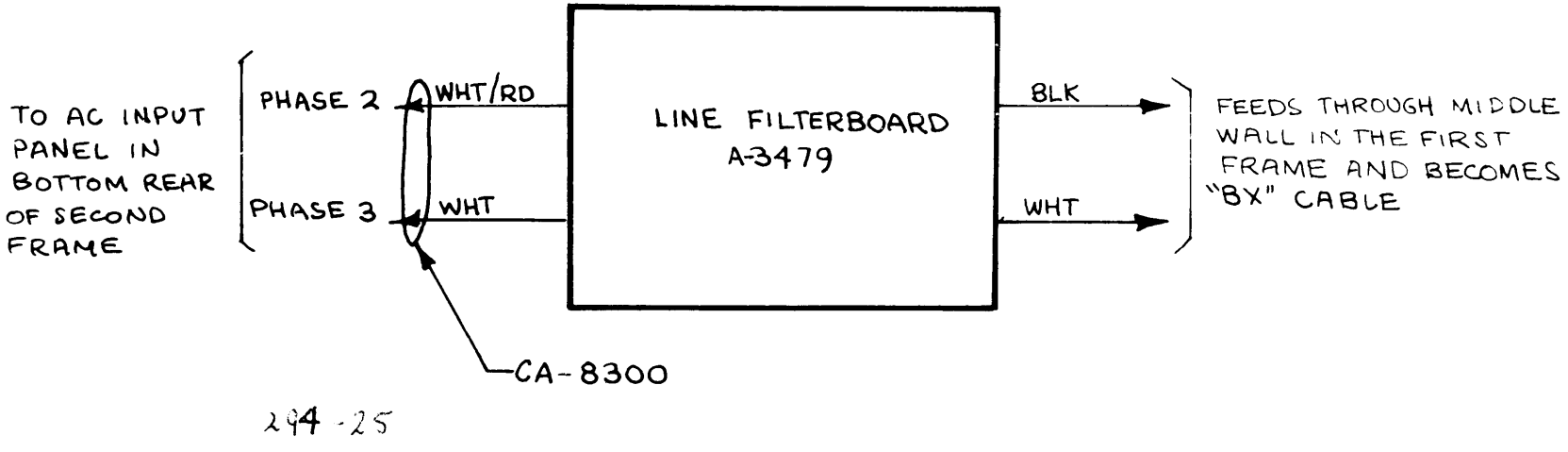


Figure 3-1. Line Filterboard A-3479, Cable Connection Diagram

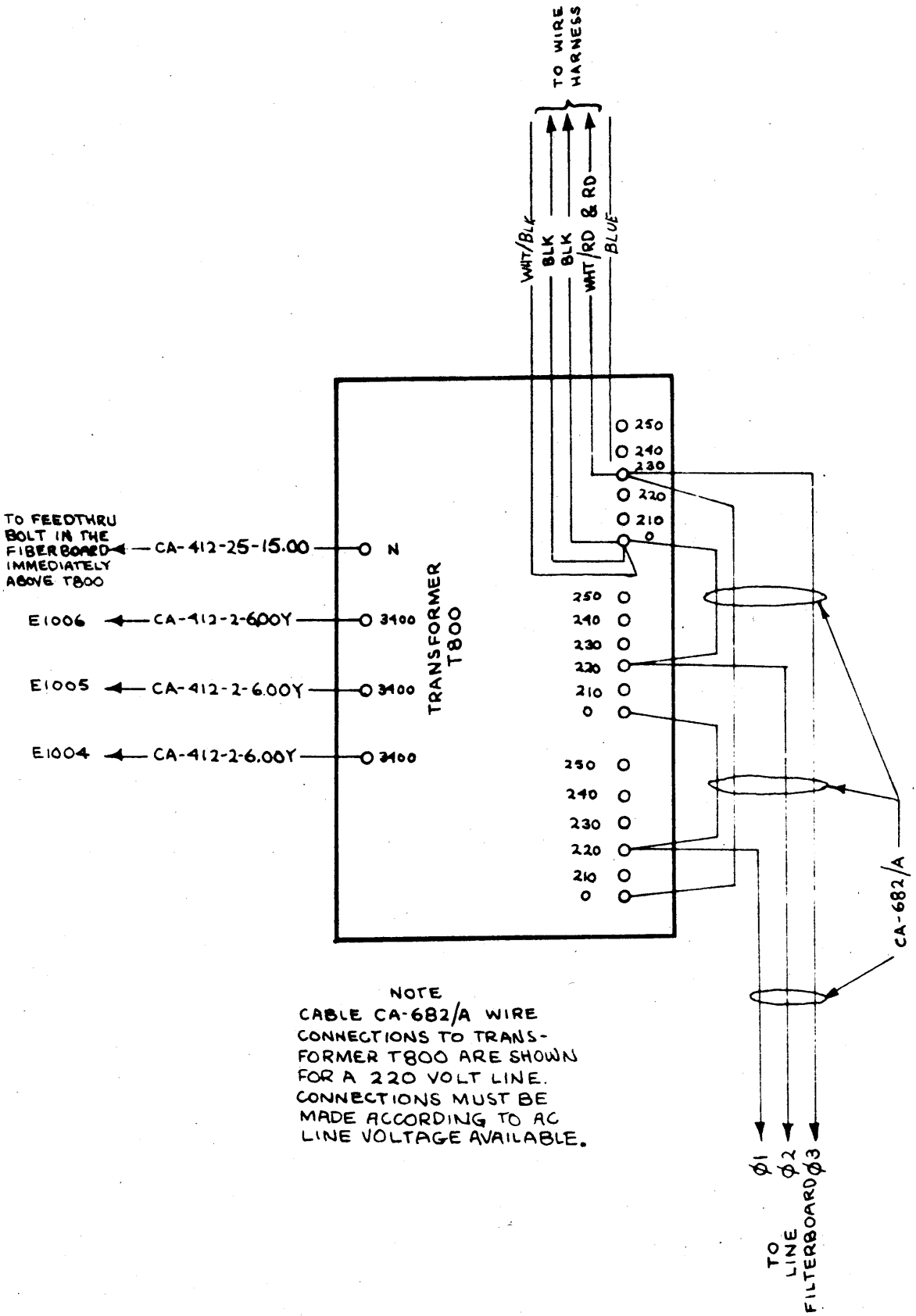


Figure 3-2. Transformer T800, Cable Connection Diagram

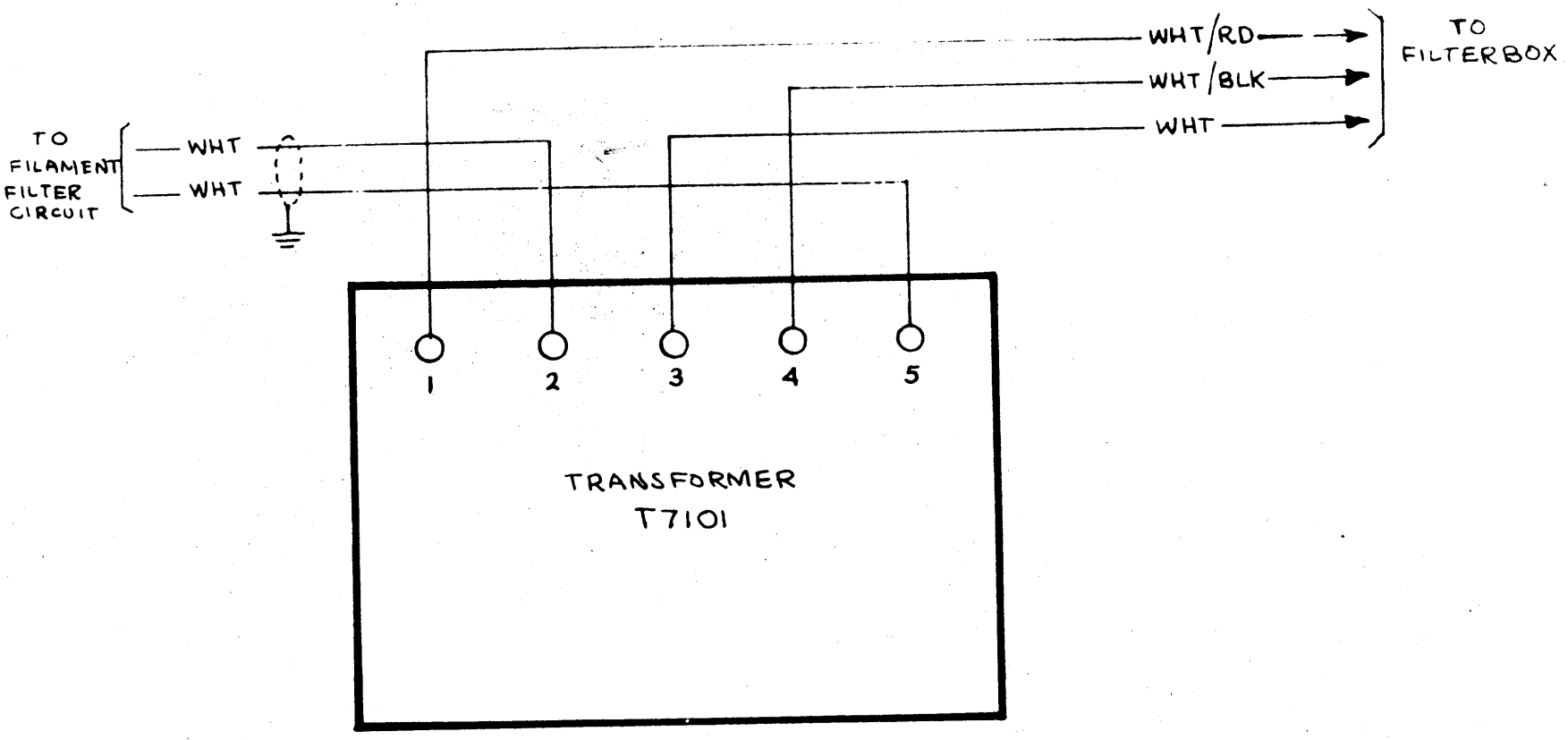


Figure 3-3. Transformer T7101, Cable Connection Diagram