

★
T.O. 12R2-2ART13-1

HANDBOOK
OPERATING INSTRUCTIONS

RADIO TRANSMITTING SETS
AN/ART-13 AN/ART-13A AN/ART-13B
AND
NAVY MODELS
ATC ATC-1

REVISION
NOTICE

**LATEST REVISED PAGES SUPERSEDE
THE SAME PAGES OF PREVIOUS DATE**

Insert revised pages into basic
publication. Destroy superseded pages.

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DYNAMOTOR UNIT
DY-11/ART-13

ANTENNA LOADING COIL
CU-26/ART-13

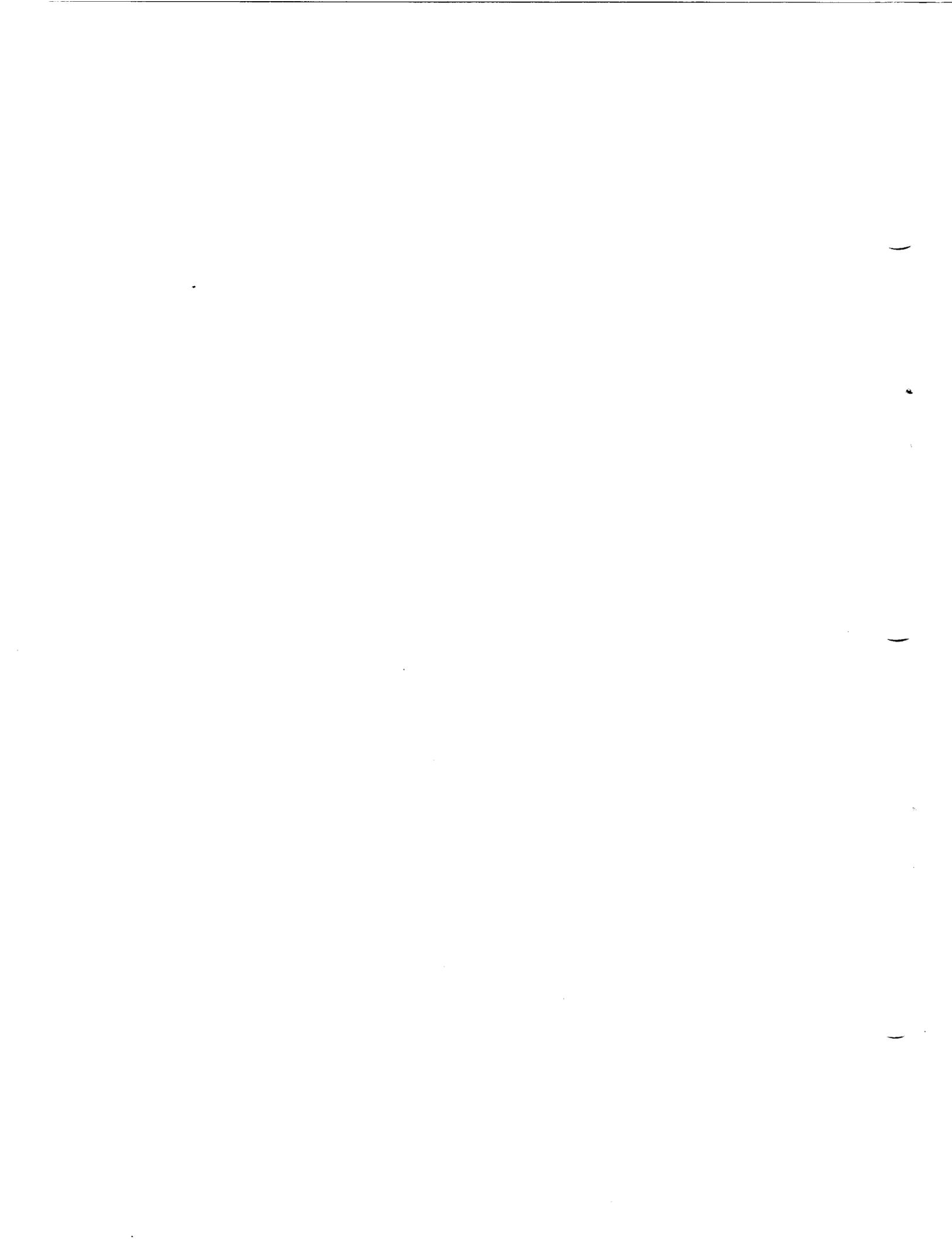
ANTENNA LOADING COIL
CU-26/ART-13

ANTENNA SHUNT
CAPACITOR
CU-24/ART-13

RADIO TRANSMITTER T-47/ART-13

CONTROL UNIT
C-87/ART-13

Figure 1-2—Radio Transmitting Set AN/ART-13 (Navy Model ATC or ATC-1) Major Assemblies



g. ACCESSORIES.—Complete sets of Phillips and Bristo wrenches are supplied with the equipment. They are fastened beneath the cover of the transmitter or externally, under the plugs on those Radio Transmitters T-47/ART-13 with the MCW-CFI 80-2 Unit installed).

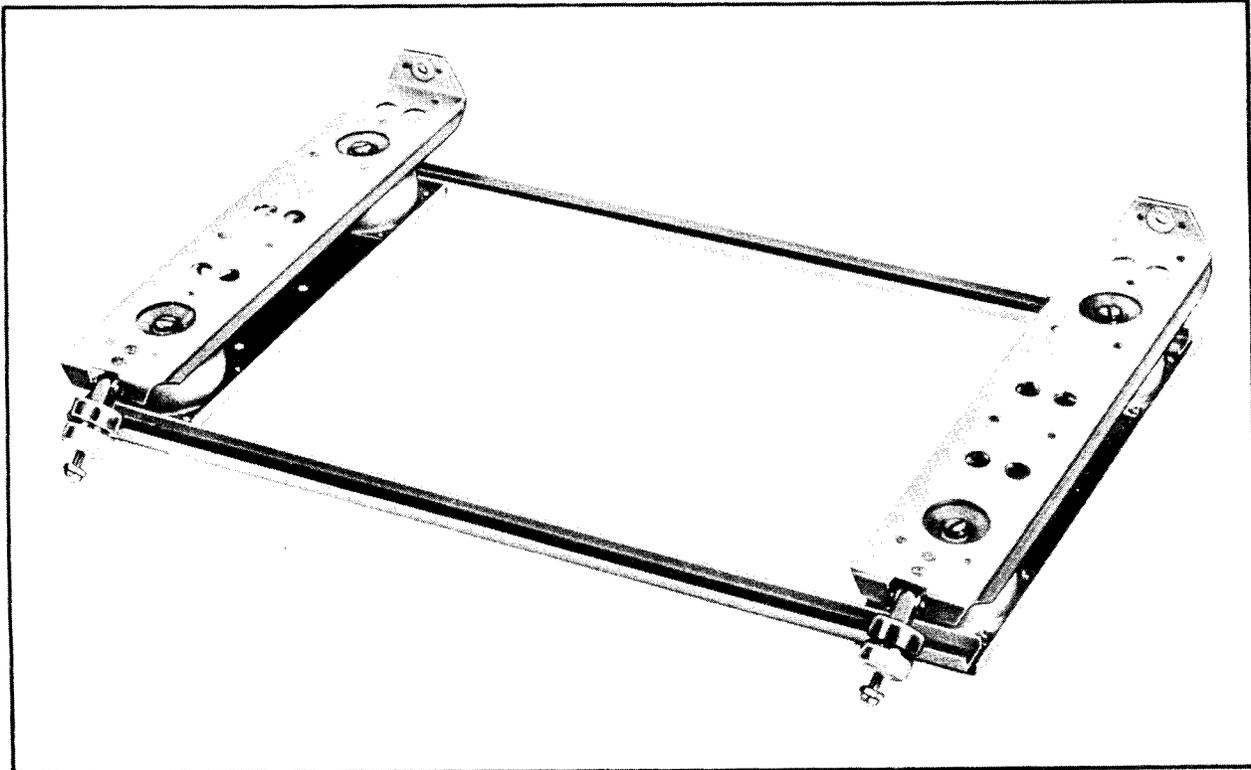


Figure 2-9A—Mounting Base MT-284A/ART-13

TABLE 5-1

**CALIBRATION OF OSCILLATOR 0-17/ART-13A
WHEN MCW-CFI 8Q-2 UNIT IS USED**

200 Kc to 600 Kc

TABLE 5-2

**CALIBRATION OF RADIO TRANSMITTER T-47A/ART-13 OR T-47/ART-13
WHEN MCW-CFI 8Q-2 UNIT IS USED.**

2,000 Kc to 18,100 Kc

TABLE 5-2. CALIBRATION OF RADIO TRANSMITTER T-47A/ART-13 OR T-47/ART-13 WHEN MCW-CFI 8Q-2 UNIT IS USED. (Continued)

Table with columns: Freq., A, B (repeated 3 times). Frequency: 4400-4500 Kc. Includes values for frequencies from 4400 to 4500.

Use check point at 4400 Kc

Table with columns: Freq., A, B (repeated 3 times). Frequency: 4600-4700 Kc. Includes values for frequencies from 4600 to 4700.

Use check point at 4600 Kc

Table with columns: Freq., A, B (repeated 3 times). Frequency: 4500-4600 Kc. Includes values for frequencies from 4500 to 4600.

Use check point at 4600 Kc

Table with columns: Freq., A, B (repeated 3 times). Frequency: 4700-4800 Kc. Includes values for frequencies from 4700 to 4800.

Use check point at 4800 Kc

TABLE 5-2. CALIBRATION OF RADIO TRANSMITTER T-47A/ART-13 OR T-47/ART-13 WHEN MCW-CFI 8Q-2 UNIT IS USED. (Continued)

Table with columns: Freq., A, B (repeated 3 times). Frequency: 8000-8100 Kc. Contains calibration data for various frequencies in the 8000-8100 Kc range.

Use check point at 8100 Kc

Table with columns: Freq., A, B (repeated 3 times). Frequency: 8200-8300 Kc. Contains calibration data for various frequencies in the 8200-8300 Kc range.

Use check point at 8100 or 8400 Kc, whichever is nearer

Table with columns: Freq., A, B (repeated 3 times). Frequency: 8100-8200 Kc. Contains calibration data for various frequencies in the 8100-8200 Kc range.

Use check point at 8100 Kc

Table with columns: Freq., A, B (repeated 3 times). Frequency: 8300-8400 Kc. Contains calibration data for various frequencies in the 8300-8400 Kc range.

Use check point at 8400 Kc

TABLE 5-2. CALIBRATION OF RADIO TRANSMITTER T-47A/ART-13 OR T-47/ART-13 WHEN MCW-CFI 8Q-2 UNIT IS USED. (Continued)

Table with columns Freq., A, B and sub-columns for frequency ranges 15600-15700 Kc and 15700-15800 Kc.

Use check point at 15600 Kc

Table with columns Freq., A, B and sub-columns for frequency ranges 15800-15900 Kc and 15900-16000 Kc.

Use check point at 15600 Kc

Table with columns Freq., A, B and sub-columns for frequency ranges 15700-15800 Kc and 15800-15900 Kc.

Use check point at 15600 Kc

Table with columns Freq., A, B and sub-columns for frequency ranges 15900-16000 Kc and 16000-16100 Kc.

Use check point at 16200 Kc

TABLE 5-3

**CALIBRATION OF OSCILLATOR 0-16/ART-13
WHEN MCW-CFI 8Q-2 UNIT IS USED**

200 Kc to 1500 Kc

TABLE 5-4

**CALIBRATION OF OSCILLATOR 0-17/ART-13A
WHEN MCW-CFI 8Q-1 UNIT IS USED**

200 Kc to 600 Kc

TABLE 5-5

**CALIBRATION OF RADIO TRANSMITTER T-47A/ART-13
OR T-47/ART-13 WHEN MCW-CFI 8Q-1 UNIT IS USED**

2000 Kc to 18,100 Kc

TABLE 5-6

**CALIBRATION OF OSCILLATOR 0-16/ART-13
WHEN MCW-CFI 8Q-1 UNIT IS USED**

200 Kc to 1500 Kc

TABLE 5-7

**CALIBRATION OF APPROXIMATE DIAL SETTINGS FOR ALL
RADIO TRANSMITTING SETS**

TABLE 5-7. CALIBRATION OF APPROXIMATE DIAL SETTINGS FOR ALL RADIO TRANSMITTING SETS (CONTINUED)

30 Ft. Antenna <i>Airplane and Antenna</i>				32.5 Ft. Antenna <i>Airplane and Antenna</i>			
<i>Transmitter with Three Sections of Shunt Capacitor</i>				<i>Transmitter with Two Sections of Shunt Capacitor</i>			
KC	C	D	E	KC	C	D	E
2100	1	...	0	2100	1-2	...	0
2500	2-3	...	30	2500	3-4	...	10
3000	4-5	...	48	3000	4-5	...	44
3500	5-6	...	64	3500	5-6	...	70
4000	6	...	80	4000	6-7	...	90
5000	6-7	...	121	5000	7	...	124
6000	7	54	138	6000	7	55	144
7000	7	71	152	7000	7	70	173
8000	7	81	186	7790	7	90	200
8350	7	100	200	8000	9	64	60
8500	10	50	88	9000	9	69	112
9000	10	52	138	10000	9	74	169
10000	10	55	165	11000	9	81	179
11000	10	66	200	12000	9	90	179
12000	10	76	200	12500	9	100	180
13000	10	85	200	13000	10	86	200
13500	10	89	200	14000	10	95	200
14000	10	93	200	14100	10	100	200
14500	11	89	200	15000	11	94	203
15000	11	93	200	15300	11	100	200
15500	13	41	200	16000	13	60	200
16000	13	58	200	17000	13	86	164
17000	13	76	200	18000	13	100	185
18000	13	91	200				

This Table for Use With Shunt Capacitor

45 Ft. Antenna <i>Airplane and Antenna</i>			
<i>Transmitter with One Section of Shunt Capacitor</i>			
KC	C	D	E
2050	1-2	...	0
2500	3-4	...	33
3000	4-5	...	70
3500	5-6	...	111
4000	6	...	132
5000	7	43	160
5500	7	54	180
5900	7	60	200
6000	9	30	42
7000	9	42	138
8000	9	55	158
9000	9	67	165
10000	9	74	170
11000	9	83	173
12000	9	100	150
12200	9	100	173
13000	11	80	200
14000	11	91	158
14400	11	100	110
15000	12	82	75
16000	12	85	143
17000	12	89	174
18000	12	92	200

This Table for Use With Shunt Capacitor

35 Ft. Antenna <i>Airplane and Antenna</i>				40 Ft. Antenna <i>Airplane and Antenna</i>			
<i>Transmitter with Two Sections of Shunt Capacitor</i>				<i>Transmitter with Two Sections of Shunt Capacitor</i>			
KC	C	D	E	KC	C	D	E
2150	1	...	0	2100	1-2	...	0
2500	2-3	...	22	2500	3-4	...	25
3000	4-5	...	60	3000	4-5	...	66
3500	5-6	...	85	3500	5-6	...	100
4000	6-7	...	110	4000	6-7	...	120
5000	7	32	128	5000	7	38	144
6000	7	56	156	6000	7	60	179
7000	7	75	184	6500	7	71	200
7435	7	95	200	7000	9	47	94
7500	9	58	49	8000	9	56	148
8000	9	60	112	9000	9	66	162
9000	9	67	142	10000	9	72	174
10000	9	72	160	11000	9	80	177
11000	9	80	176	12000	9	91	178
12000	9	88	178	12500	9	100	179
13000	9	100	181	13000	10	85	200
14000	10	90	200	14000	10	100	180
14600	10	100	200	14190	10	100	192
15000	13	0	178	14500	12	75	200
16000	13	70	156	15000	12	80	200
17000	13	90	130	16000	12	88	150
17700	13	100	146	17000	12	94	108
				18000	12	100	157

This Table for Use With Shunt Capacitor

**200 Foot Trailing Antenna
Any Type of Airplane**

KC	Antenna Loading Unit	
	P	Q
200	3	3
250	4	2
300	5	1
400	5	2
500	5	3
600	5	3

There are no approximate settings for use with trailing antenna in high frequency range.



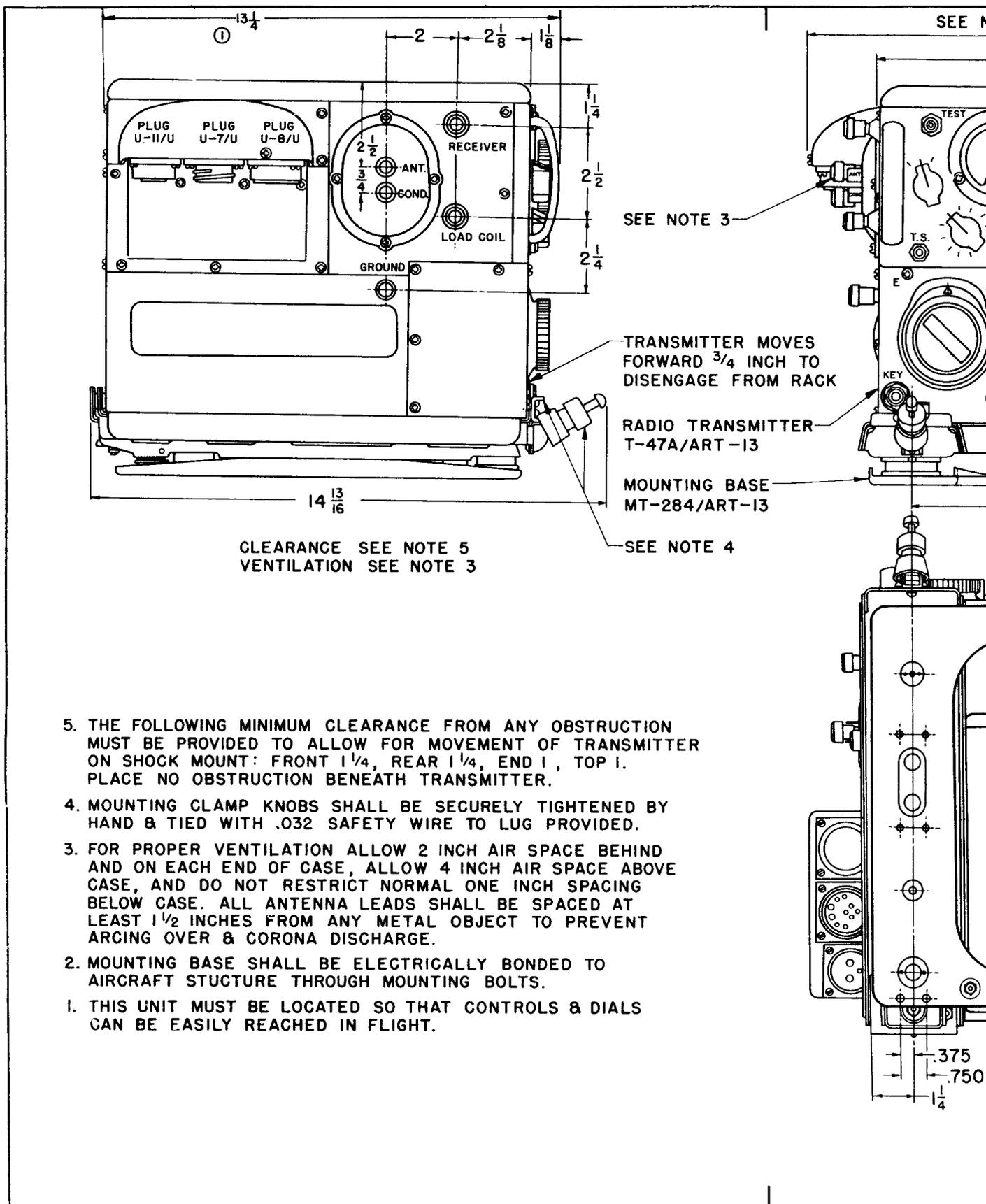
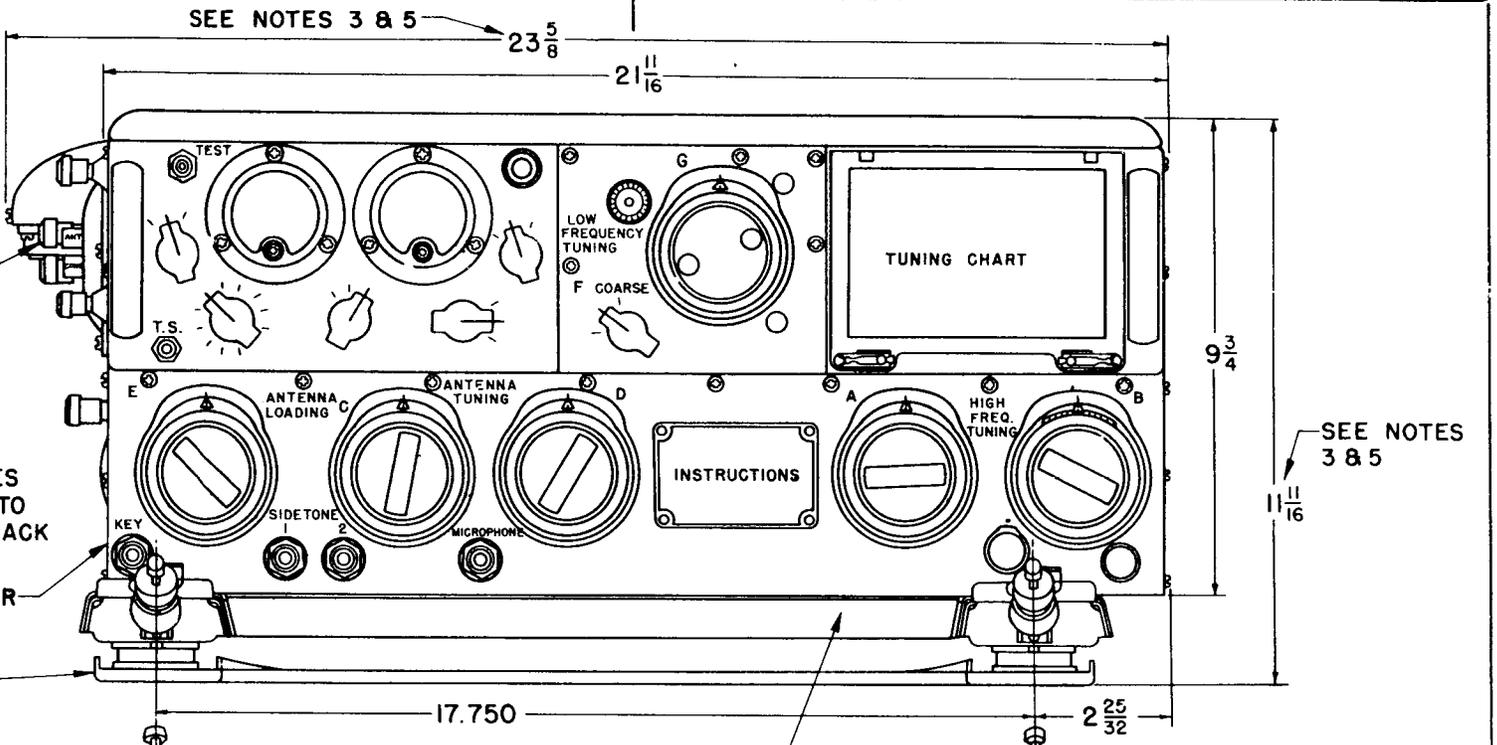


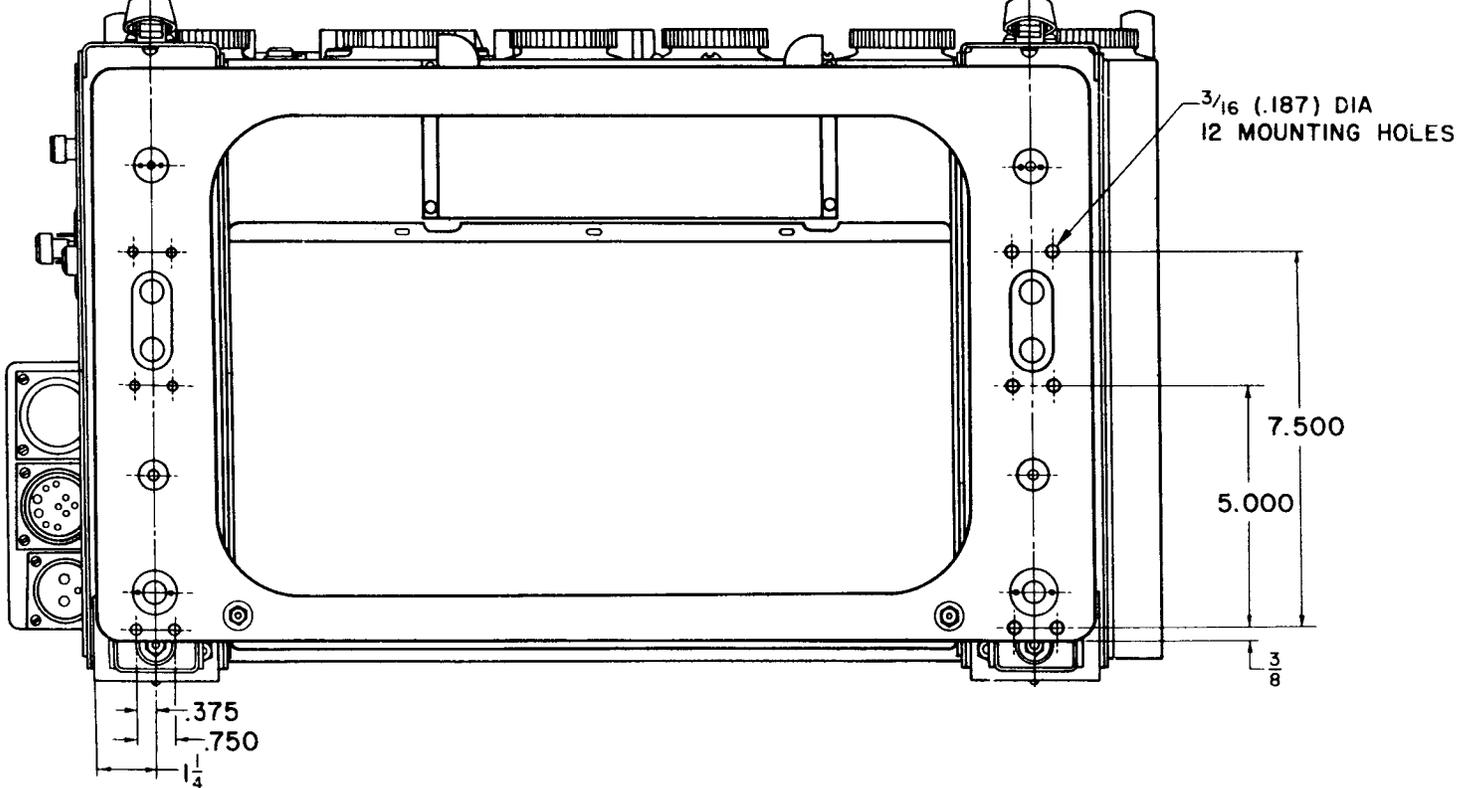
Figure 5-1—Radio Transmitter T-47A/ART-13—Outline Dimensions

SECTION V

SEE NOTES 3 & 5



MOUNTING PLATE MT-283/ART-13



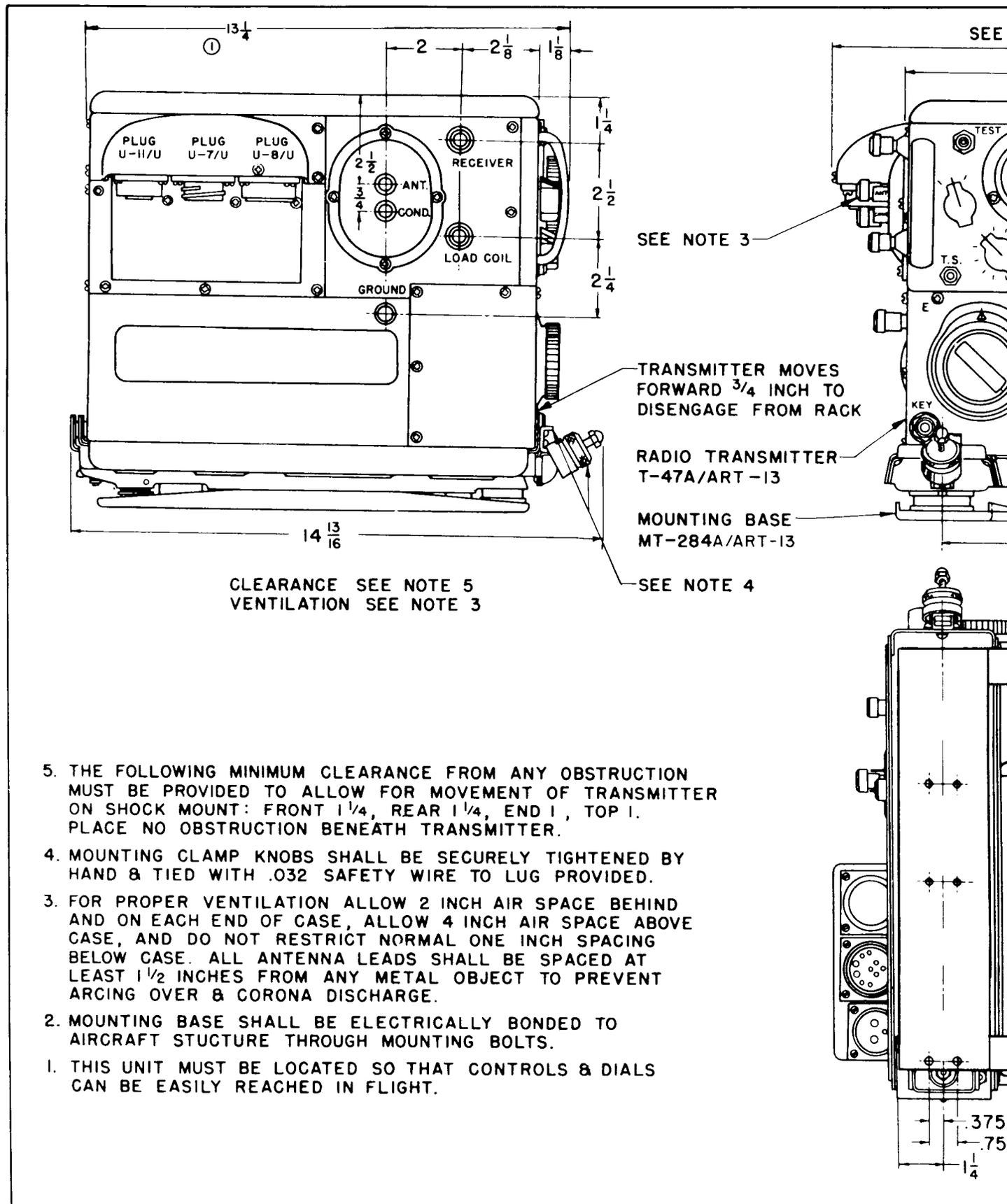
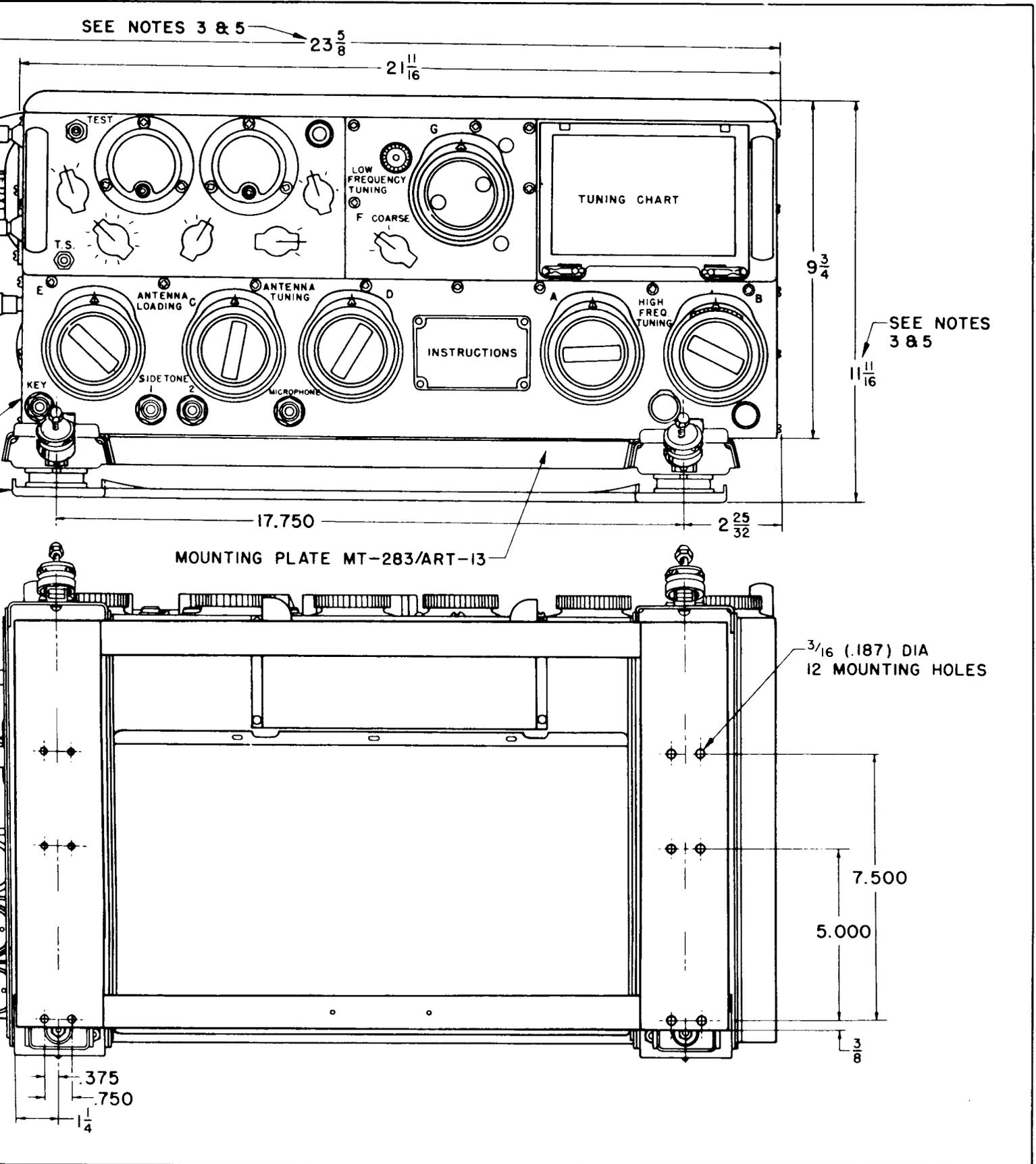
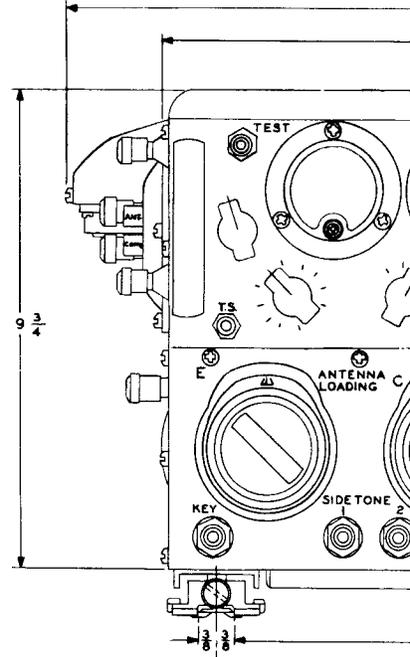
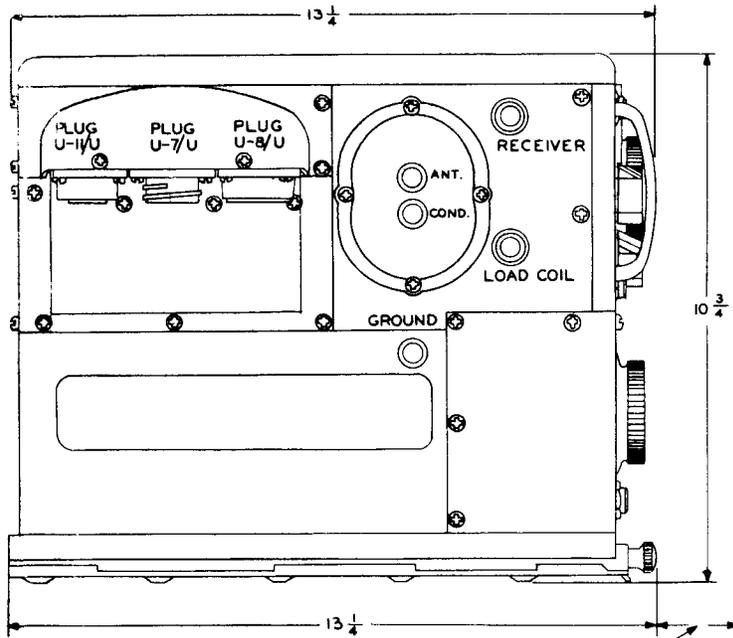


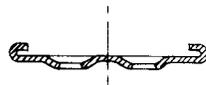
Figure 5-1A—Radio Transmitter T-47A/ART-13 and Mounting Base MT-284A/ART-13—Outline Dimensions



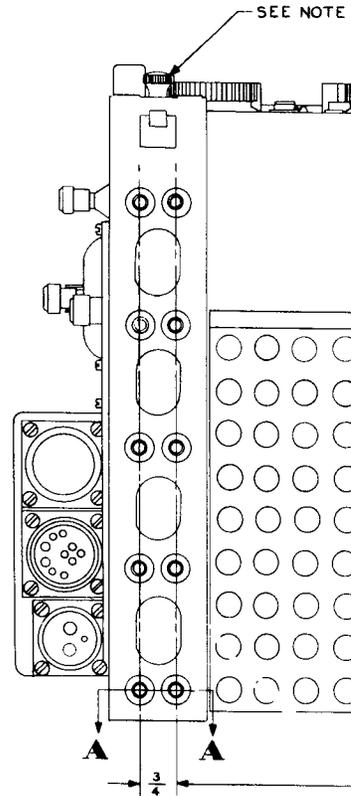


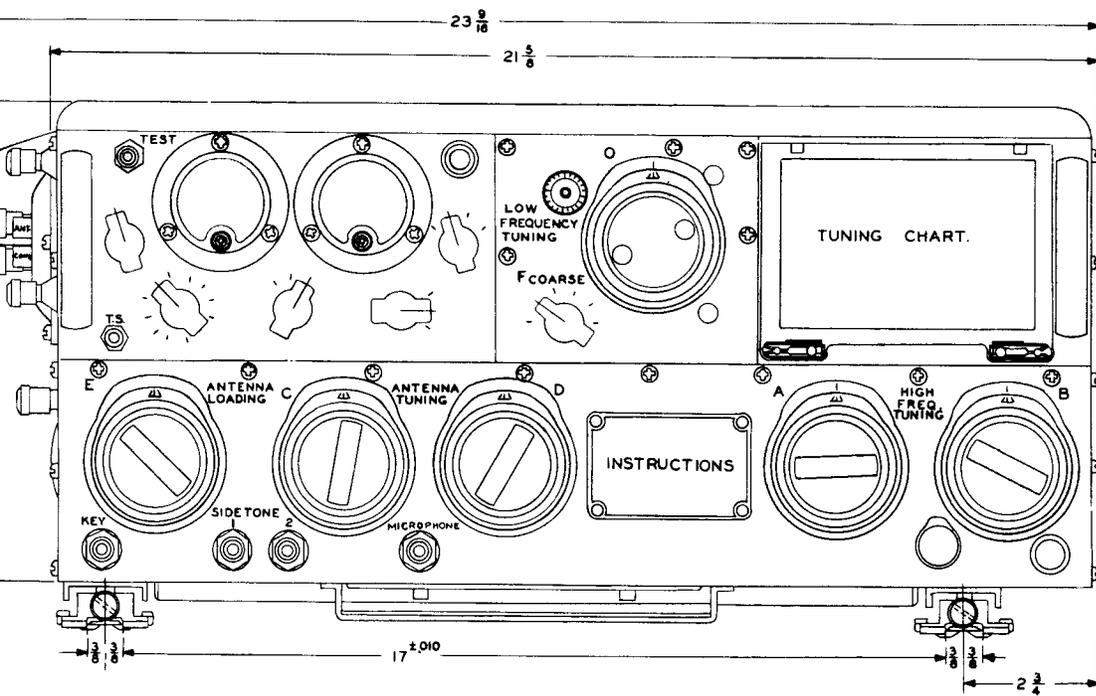
- 1-THESE UNIT MUST BE LOCATED SO THAT CONTROLS AND DIALS CAN BE EASILY REACHED AND READ IN FLIGHT.
- 2-TRACKS SHALL BE ELECTRICALLY BONDED TO AIRCRAFT STRUCTURE THROUGH MOUNTING FEET AND BOLTS.
- 3-FOR PROPER VENTILATION, ALLOW 2 INCH AIR SPACE BEHIND AND ON EACH END OF CASE, ALLOW 5 INCH AIR SPACE ABOVE CASE, AND DO NOT RESTRICT NORMAL 1 INCH SPACING BELOW CASE.
- 4-MOUNTING CLAMP KNOBS SHALL BE SECURELY TIGHTENED BY HAND AND TIED TO BASE WITH .032 DIAMETER SAFETY WIRE.

WEIGHT 70 LBS. MAX.



ENLARGED SECTION **▲▲**





WARD
BASES

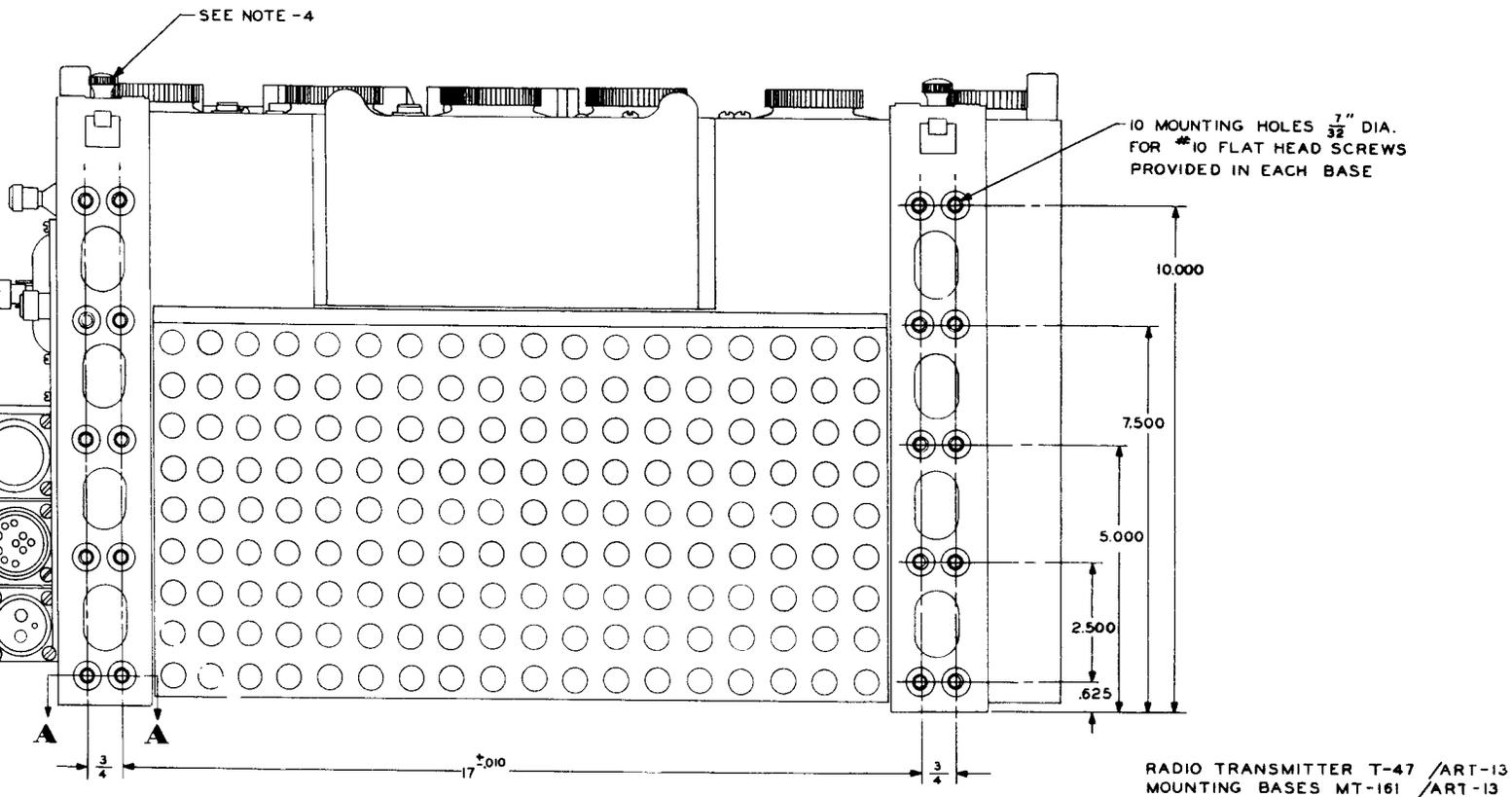


Figure 5-2—Radio Transmitter T-47/ART-13 (Navy Type 52286)—Outline Dimensions

AN 08-30 ART 13-3

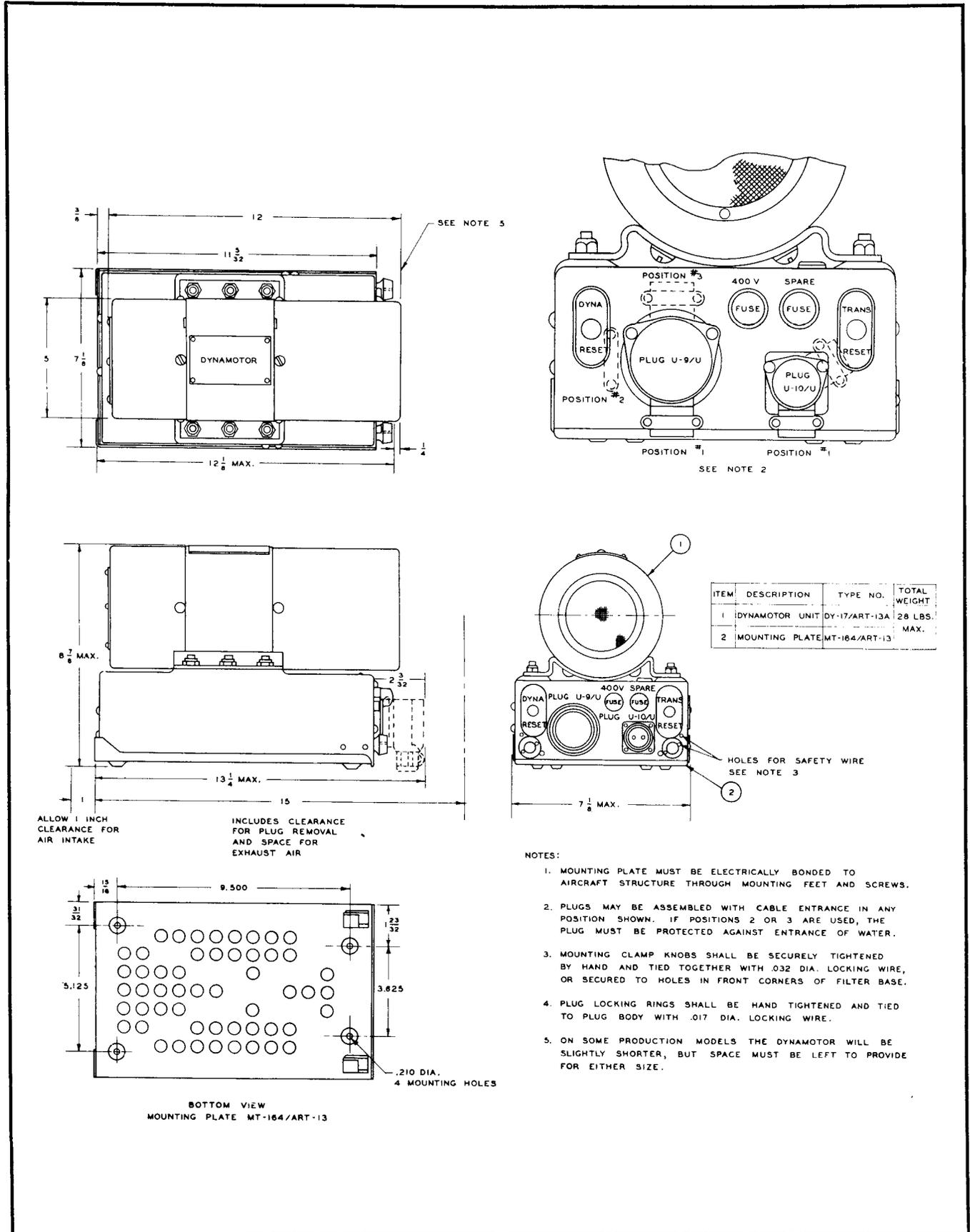
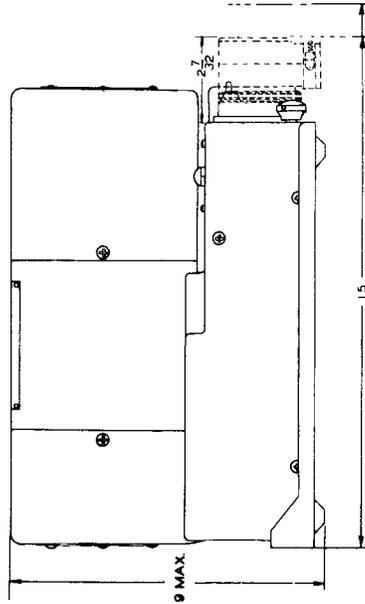
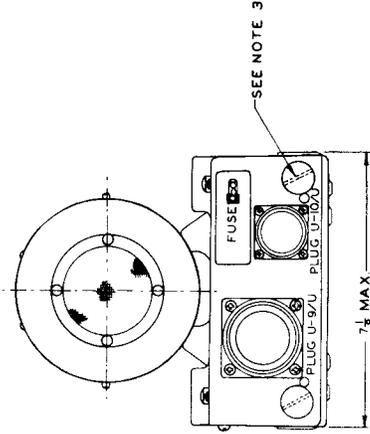
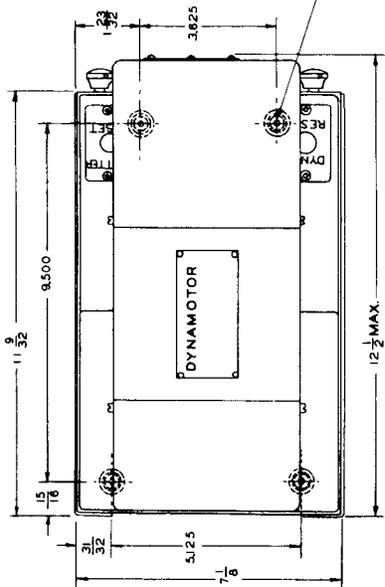
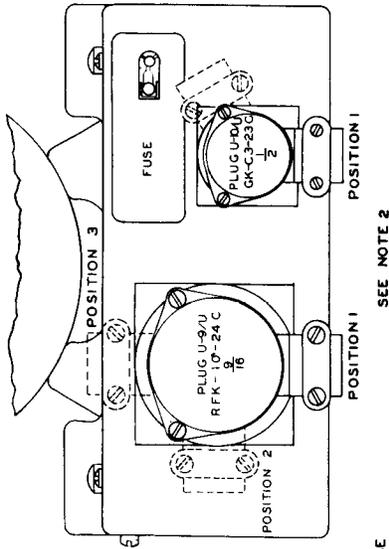


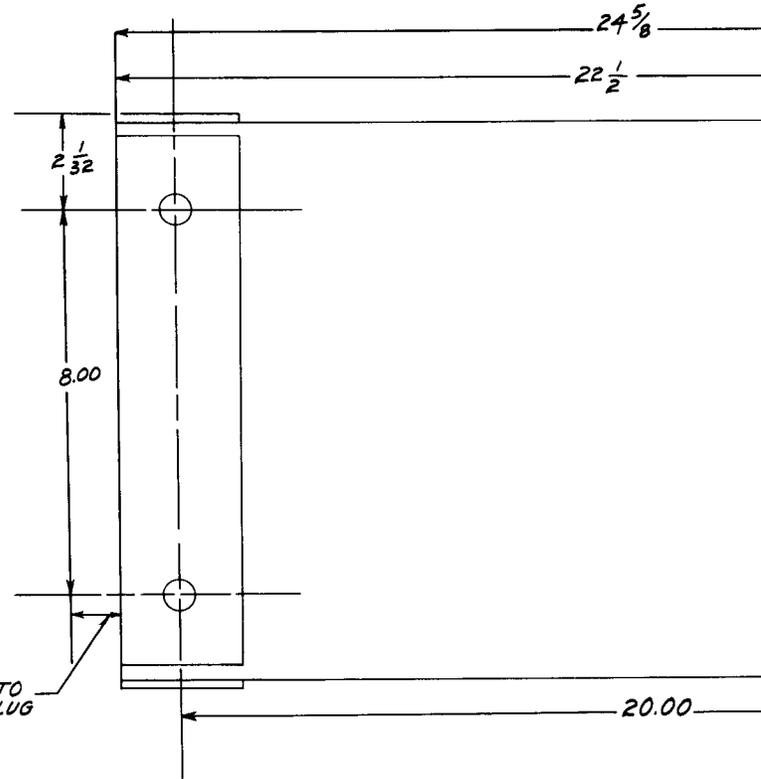
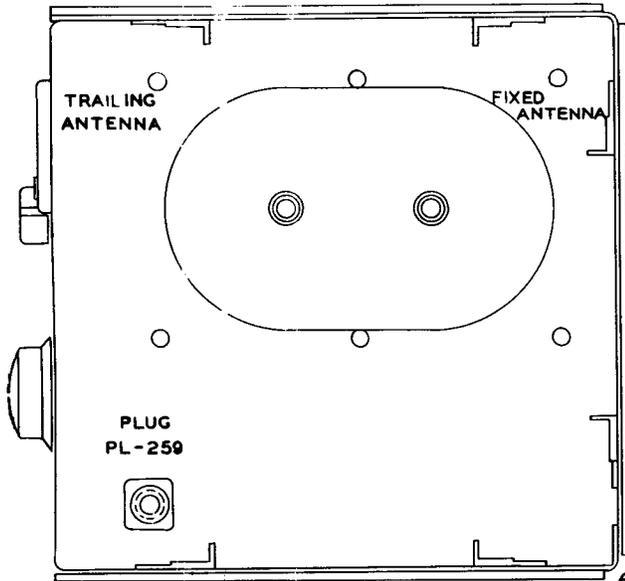
Figure 5-3—Dynamotor Unit DY-17/ART-13A—Outline Dimensions



- 1 MOUNTING PLATE MUST BE SECURED TO AIRCRAFT STRUCTURE THROUGH MOUNTING FEET AND SCREWS.
- 2 PLUGS MAY BE ASSEMBLED WITH CAPS FOR PROTECTION. CAPSITIONS 2 OR 3 ARE USED. THE PLUG MUST BE PROTECTED AGAINST ENTRANCE OF WATER.
- 3 MOUNTING PLATE MUST BE SECURED TO AIRCRAFT STRUCTURE BY HAND AND TIED TOGETHER WITH .032 DIA. SAFETY WIRE.

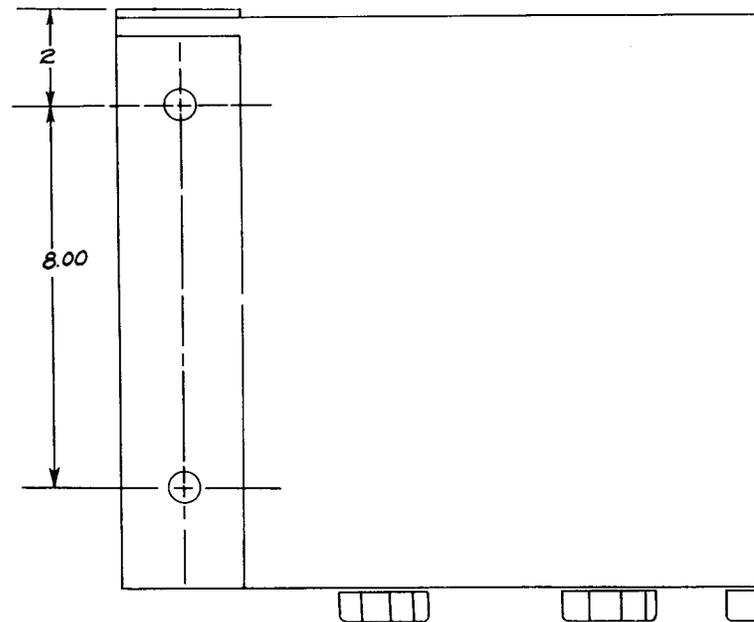
DYNAMOTOR DY-17/ART-13 OR
 DYNAMOTOR DY-11/ART-13 OR DYNAMOTOR
 DY-12/ART-13 MOUNTING PLATE-MT-184/ART-13

Figure 5-4—Dynamotor Unit DY-11/ART-13 (Navy Type -23333 Power Unit, with Dynamotor -21931) or Dynamotor Unit DY-12/ART-13 (Navy Type -23333 Power Unit with Dynamotor -21932)

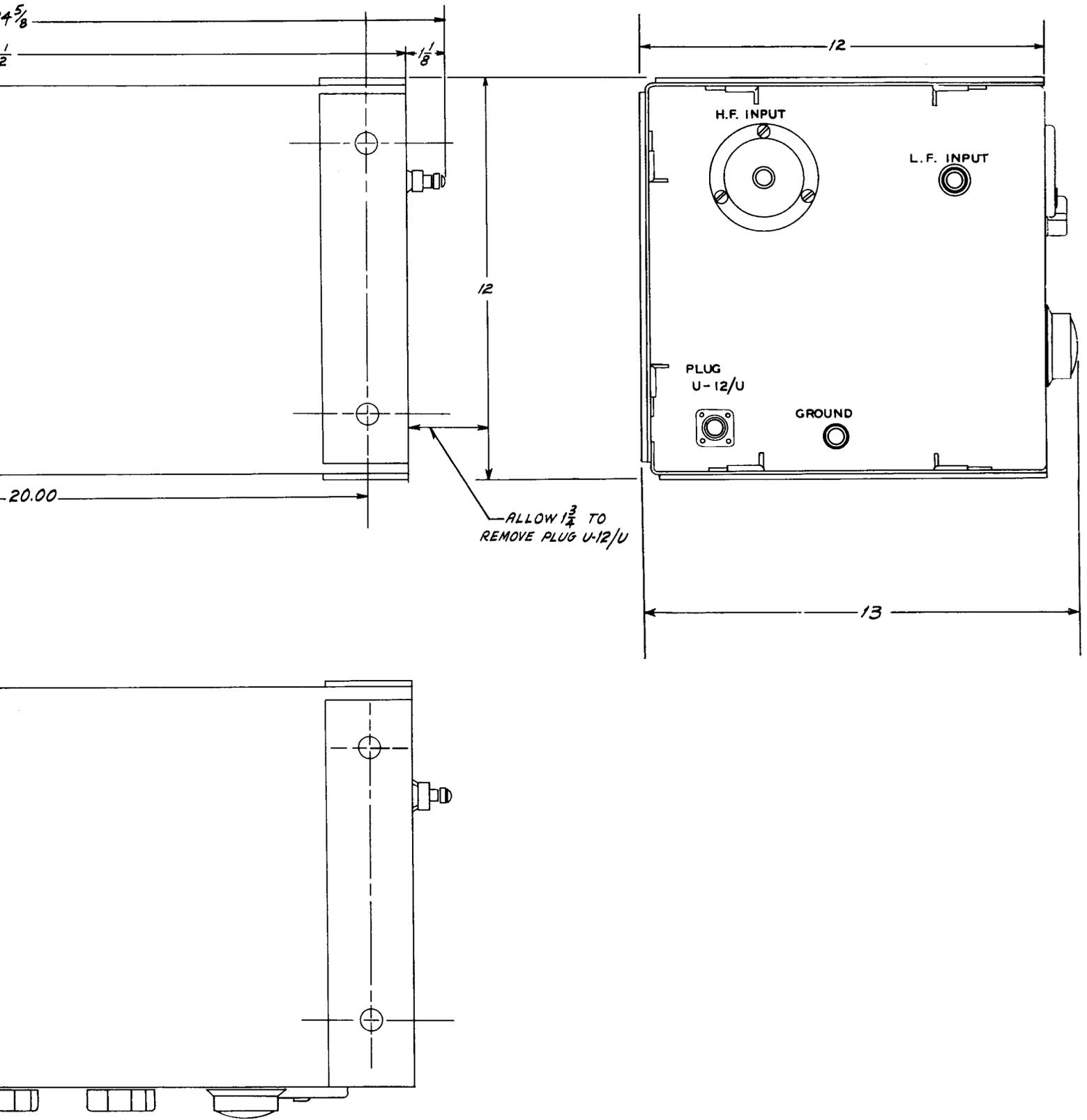


- LEADS TO FIXED ANTENNA, TRAILING ANTENNA AND H.F. INPUT MUST HAVE AT LEAST 1 1/2" CLEARANCE FROM ALL OTHER METALIC OBJECTS. LEAD TO L.F. INPUT MUST HAVE AT LEAST 3/4" CLEARANCE.
2. ADD 1/2" TO OVER-ALL HEIGHT WHEN ANTENNA LOADING UNIT IS ATTACHED TO SHOCK MOUNT.

- GOVERNMENT FURNISHED SHOCK MOUNTING MUST BE INSTALLED IN A HORIZONTAL PLANE. HOWEVER IT MAY BE INVERTED WITH THE ANTENNA LOADING UNIT.
1. SUSPENDED FROM IT. ANTENNA LOADING UNIT MAY BE ATTACHED TO MOUNTING ON ANY ONE OF ITS THREE SIDES AND IS DESIGNED FOR OPERATION IN ANY POSITION.



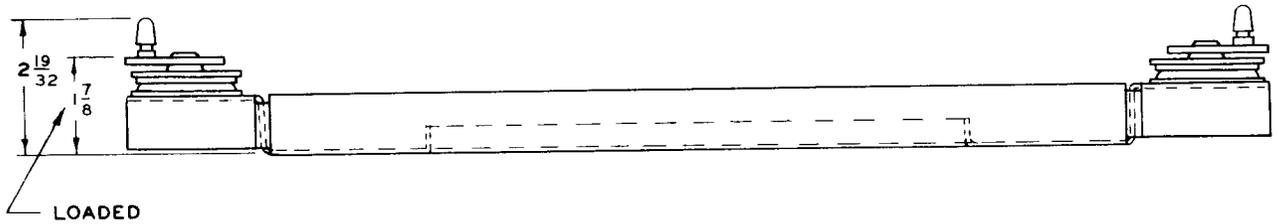
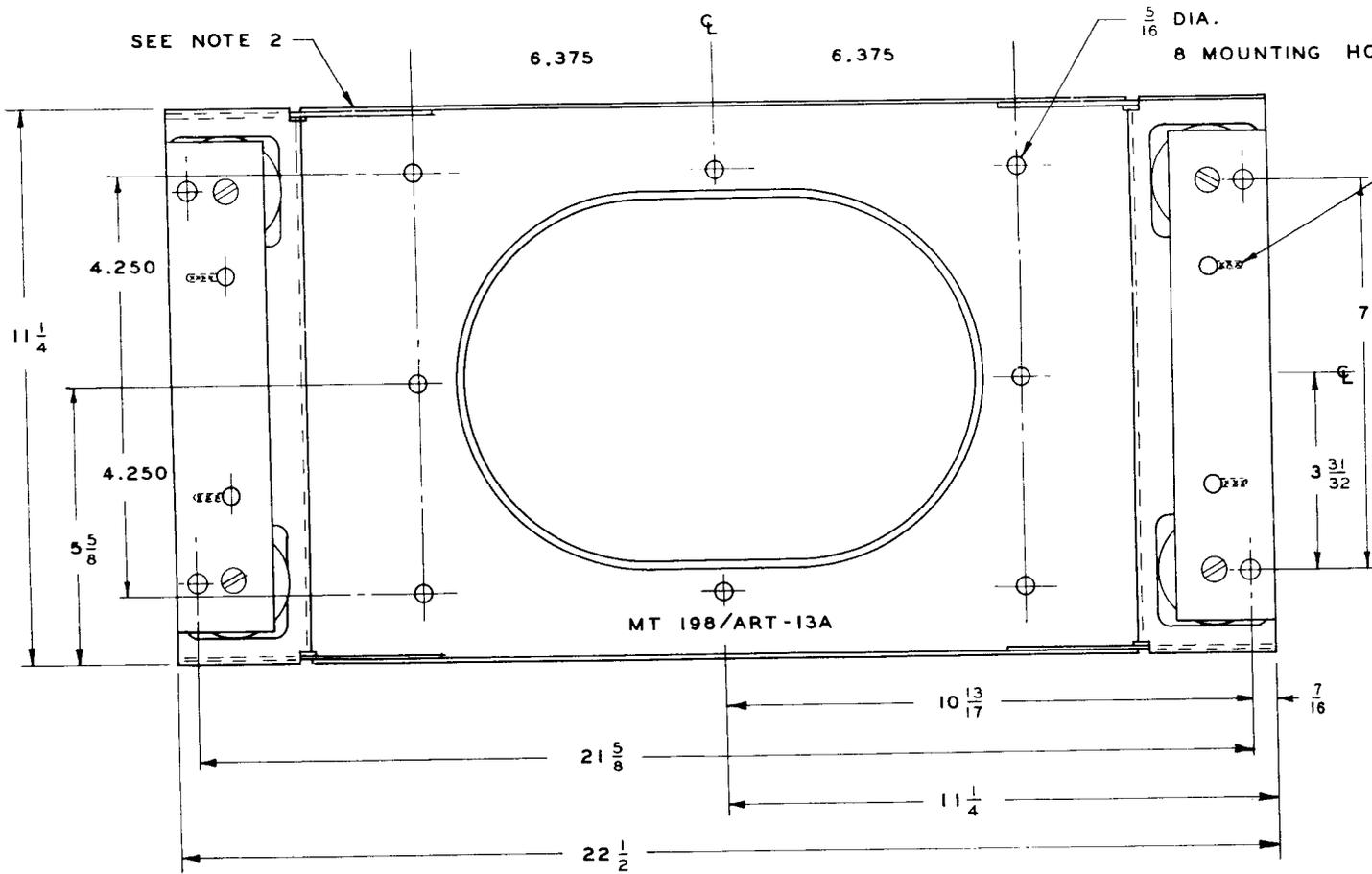
WEIGHT 25.12 LBS



12 LBS

Figure 5-5—Antenna Loading Unit CU-32/ART-13A—Outline Dimensions (for Mounting Base MT-198/ART-13A see fig. 5-6)

AN 08-30 ART 13-3



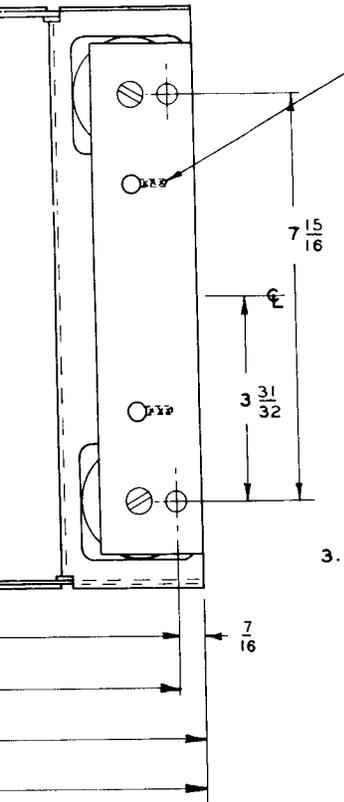
MOUNTING SHOWN IN LOADED POSITION
 BOTTOM MOUNTING
 (SEE NOTE 1)

NOTES:

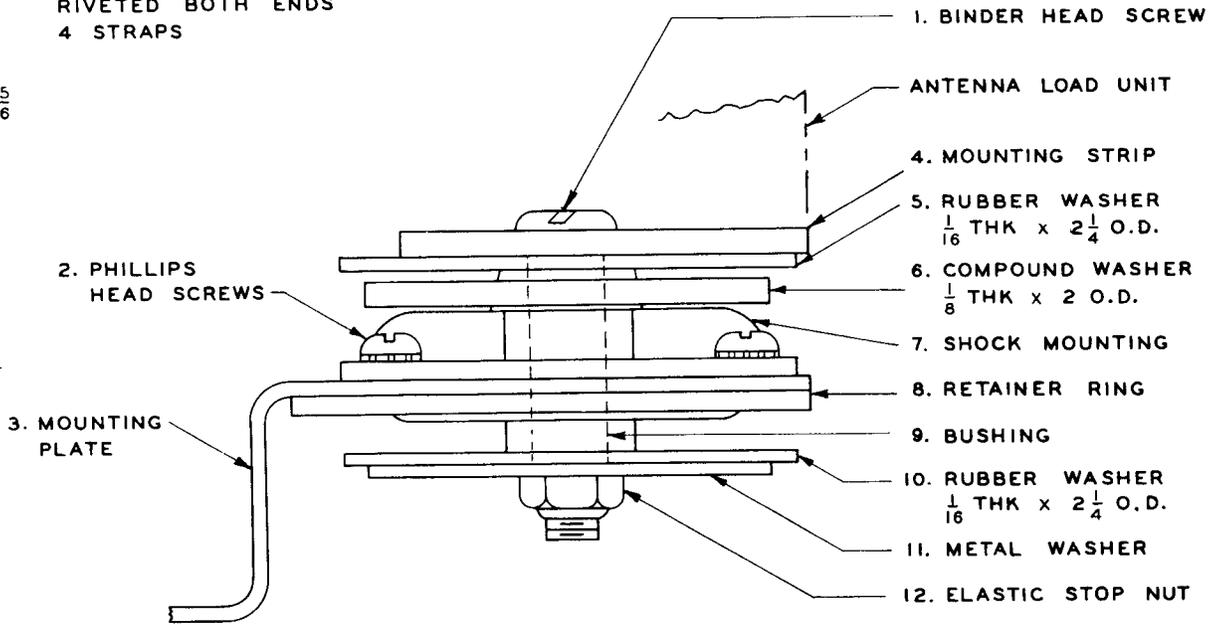
1. MOUNTING PLATE WILL BE SUPPLIED ASSEMBLED FOR BOTTOM MOUNTING. FOR OVERHEAD MOUNTING, SHOCK MOUNTS MUST BE ASSEMBLED ACCORDING TO ENLARGED SKETCH.
2. MOUNTING PLATE MUST ELECTRICALLY BONDED TO AIRCRAFT STRUCTURE.

WEIGHT 3.2 LBS.

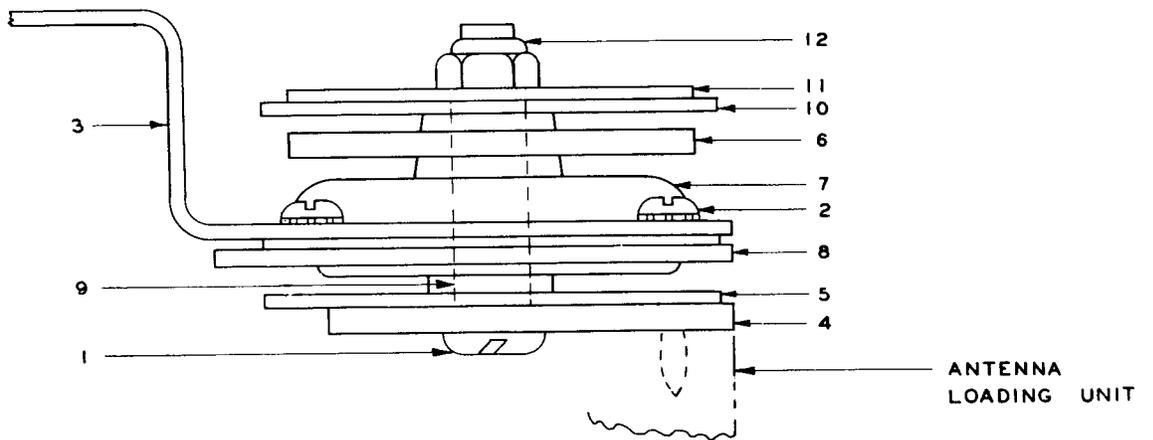
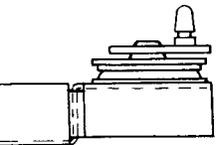
$\frac{5}{16}$ DIA.
8 MOUNTING HOLES



GROUND STRAP BETWEEN MOUNTING STRAP AND MOUNTING PLATE. RIVETED BOTH ENDS 4 STRAPS



ENLARGED VIEW SHOWING BUILDING UP OF PARTS FOR BOTTOM MOUNTING
SCALE (APPROX.) 2:1



ENLARGED VIEW SHOWING BUILDING UP OF PARTS FOR OVERHEAD MOUNTING
NOTE NUMBERS REFER TO VIEW ABOVE

Figure 5-6—Mounting Base MT-198/ART-13A—Outline Dimensions (for Antenna Loading Unit CU-32/ART-13A)

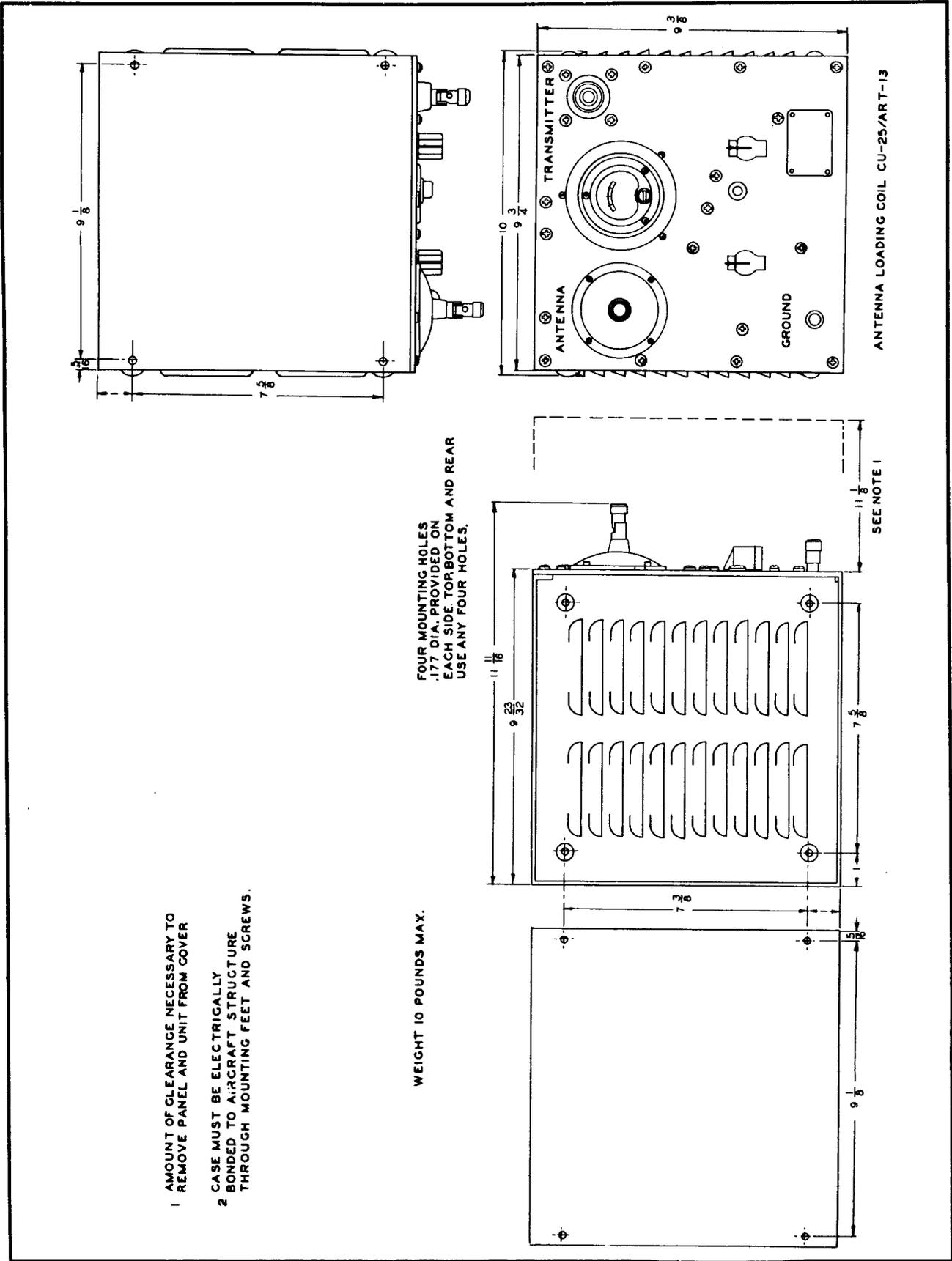
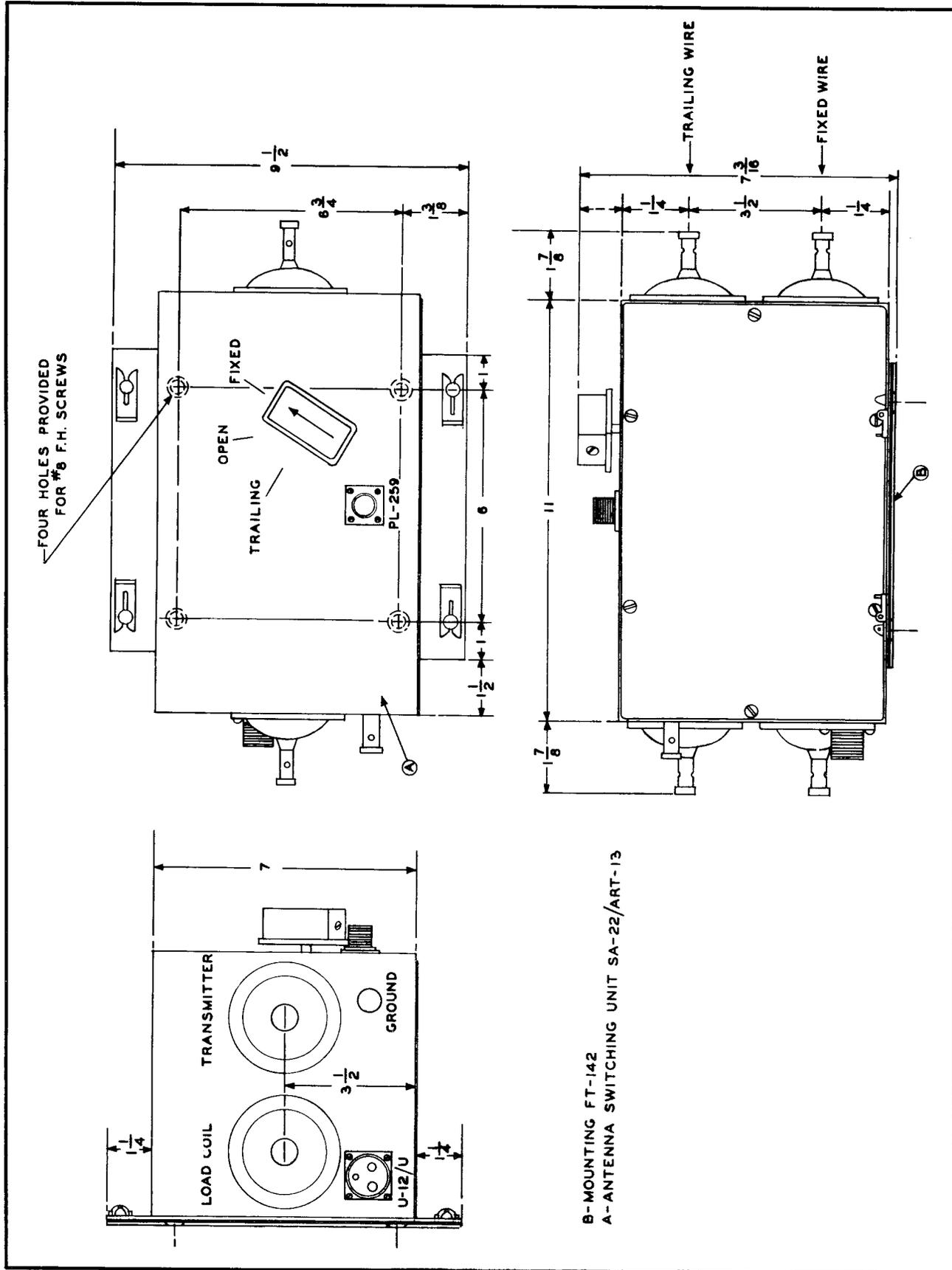


Figure 5-7—Antenna Loading Coil CU-25/ART-13 (Navy Type -47281)—Outline Dimensions



B-MOUNTING FT-142
A-ANTENNA SWITCHING UNIT SA-22/ART-13

Figure 5-8—Antenna Switching Unit SA-22/ART-13—Outline Dimensions

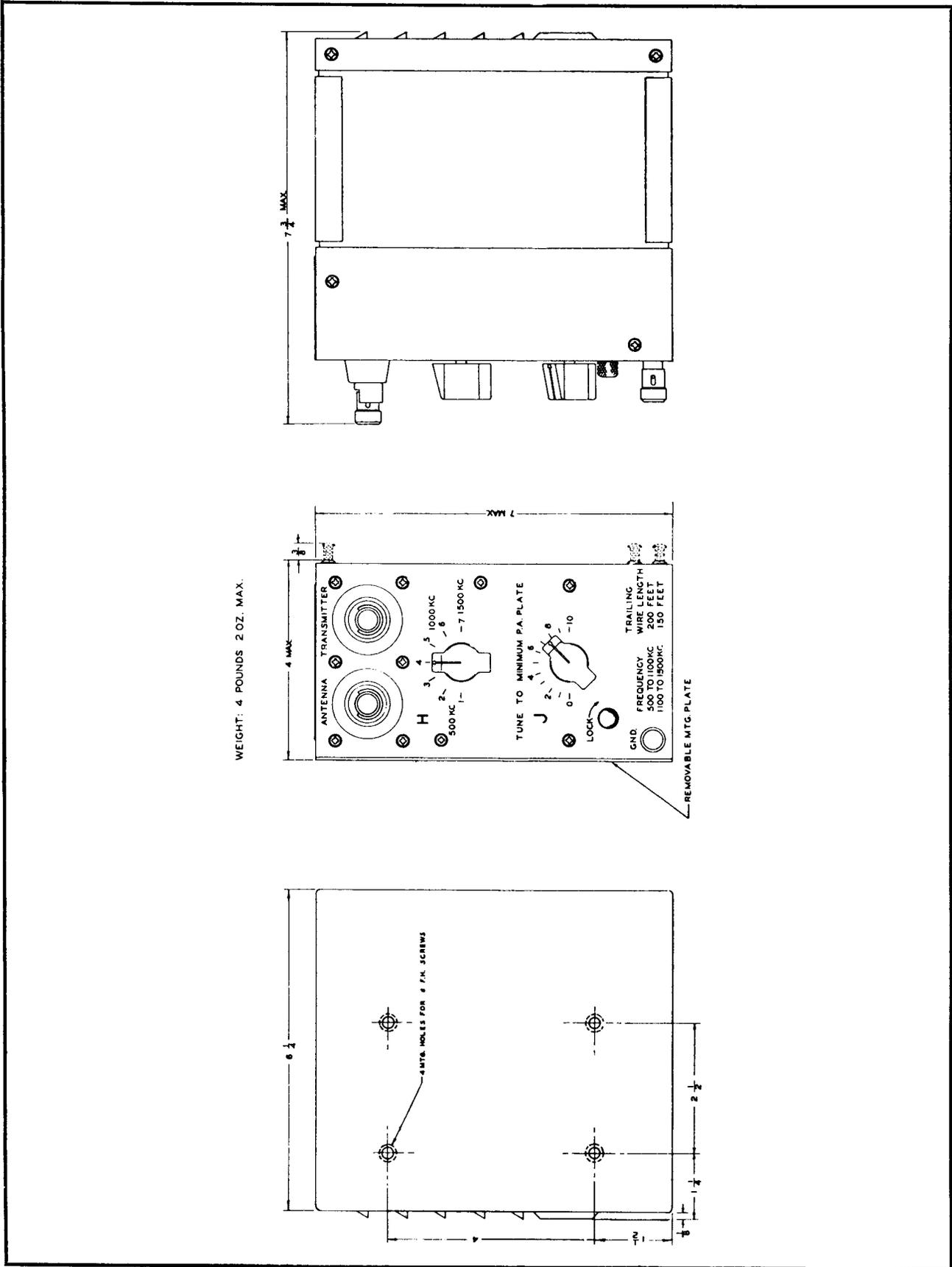


Figure 5-9—Antenna Loading Coil CU-26/ART-13 with Mounting Plate MT-162/ART-13 (Navy Type -47282)—Outline Dimensions

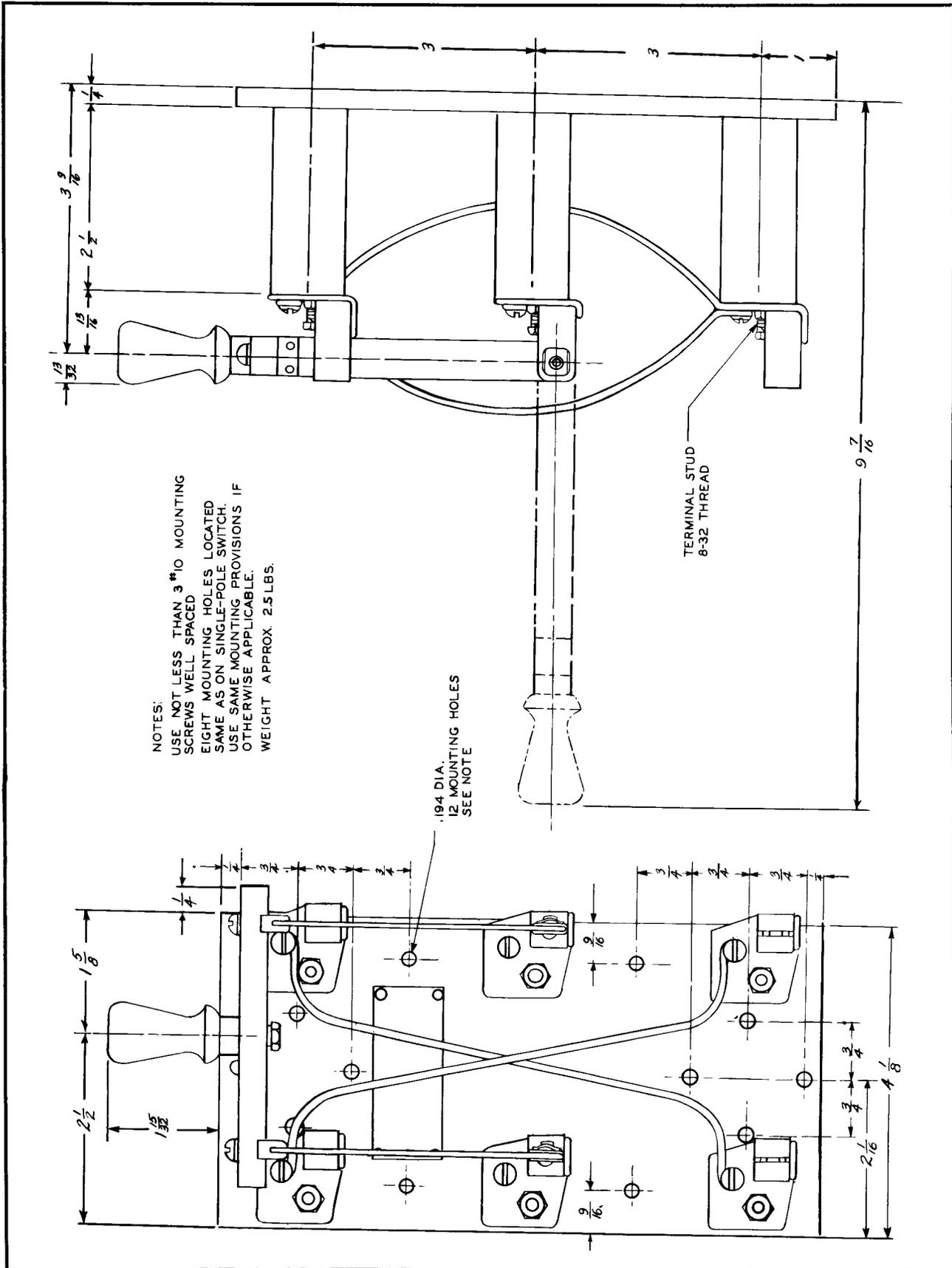


Figure 5-10—Switch SA-13/U—Outline Dimensions

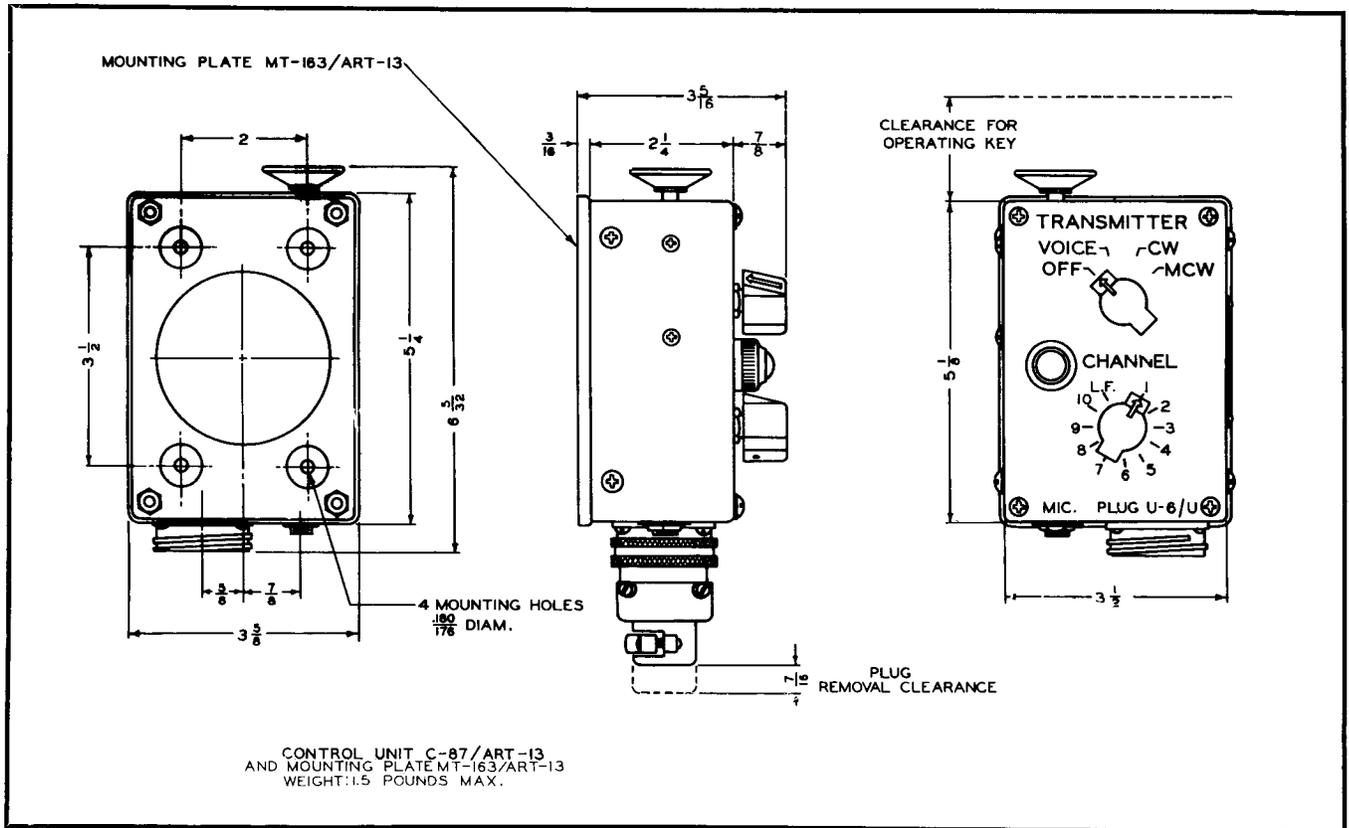


Figure 5-11—Control Unit C-87/ART-13 (Navy Type -23330)—Outline Dimensions

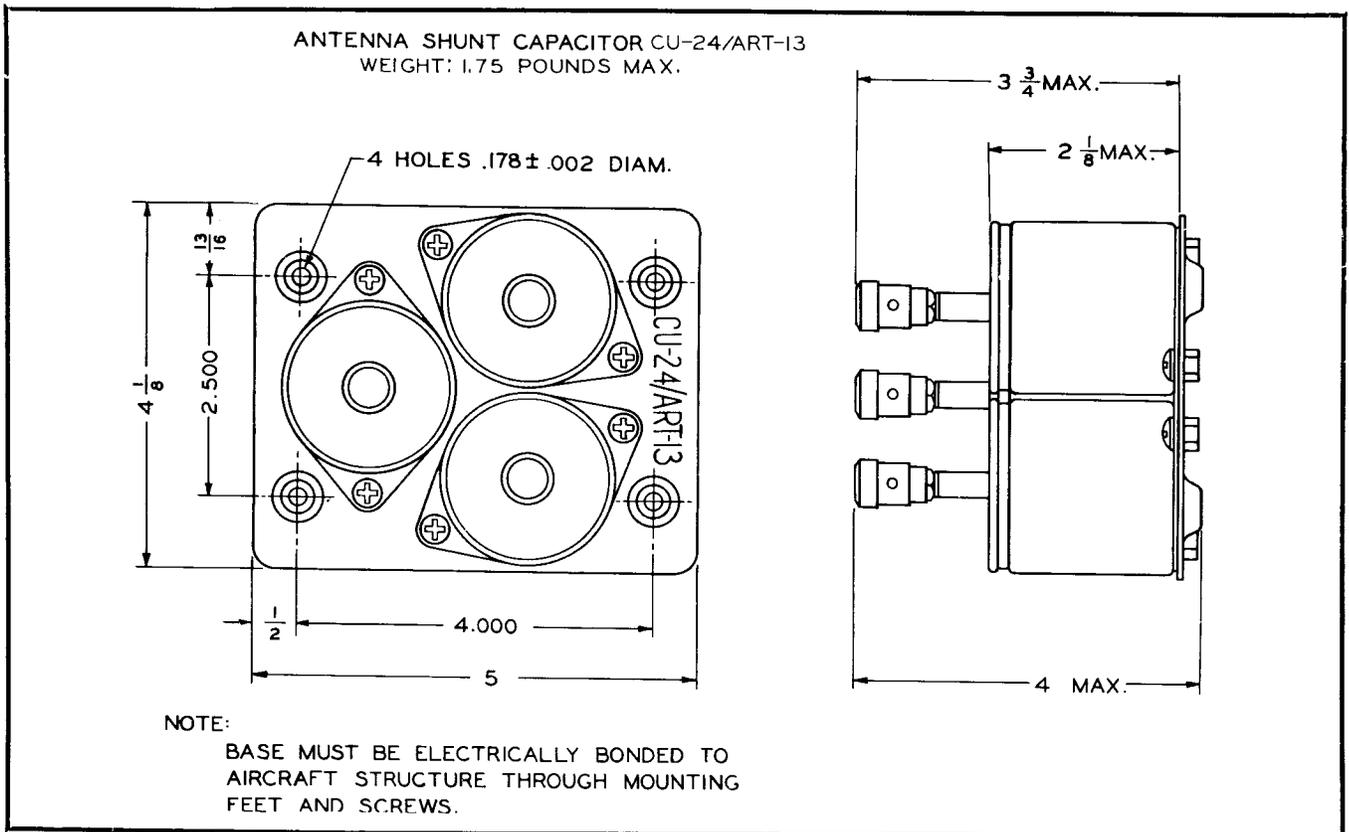


Figure 5-12—Antenna Shunt Capacitor CU-24/ART-13 (Navy Type -481628)—Outline Dimensions

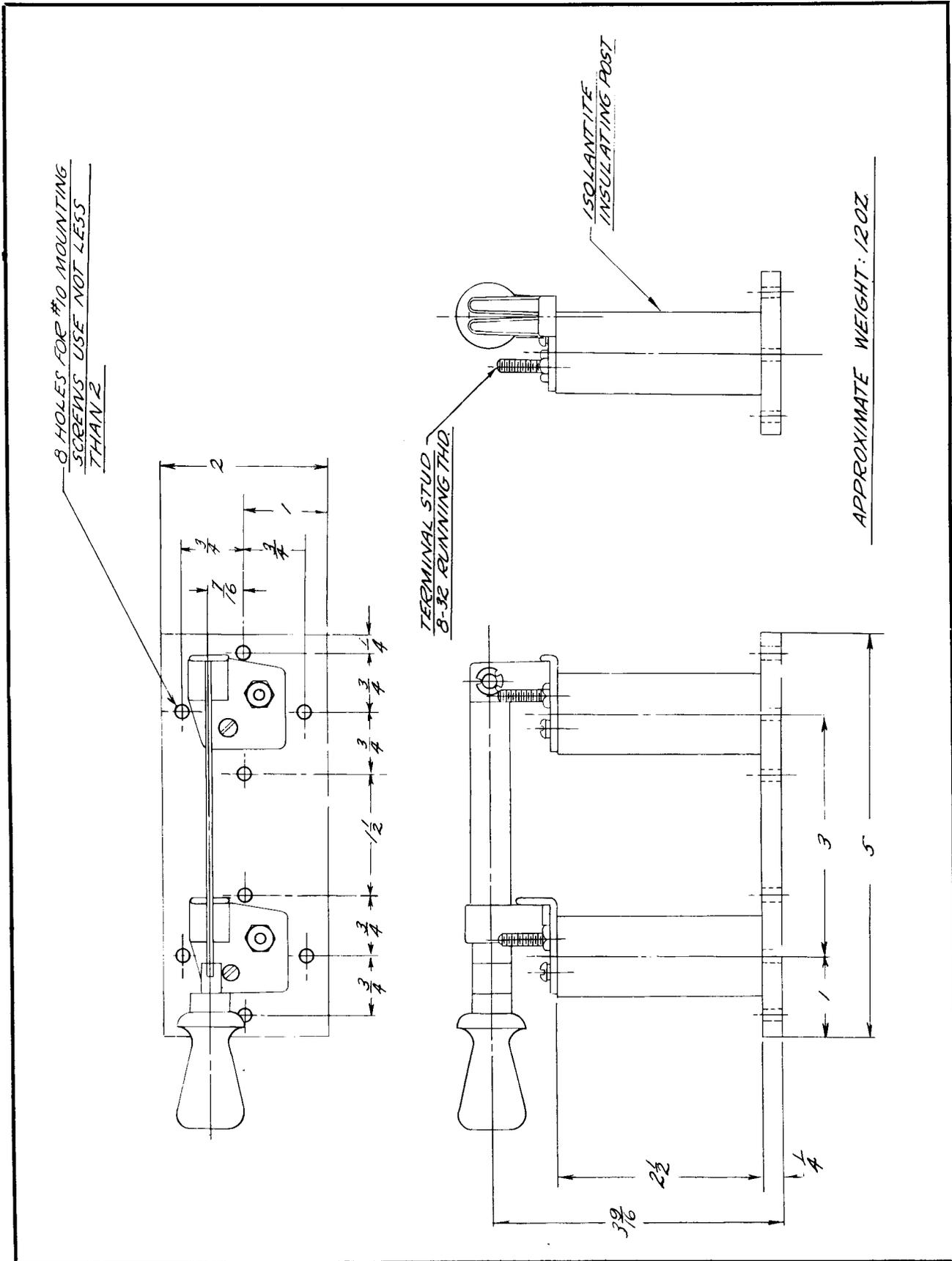


Figure 5-13—Switch SA-46 / ART-13A—Outline Dimensions

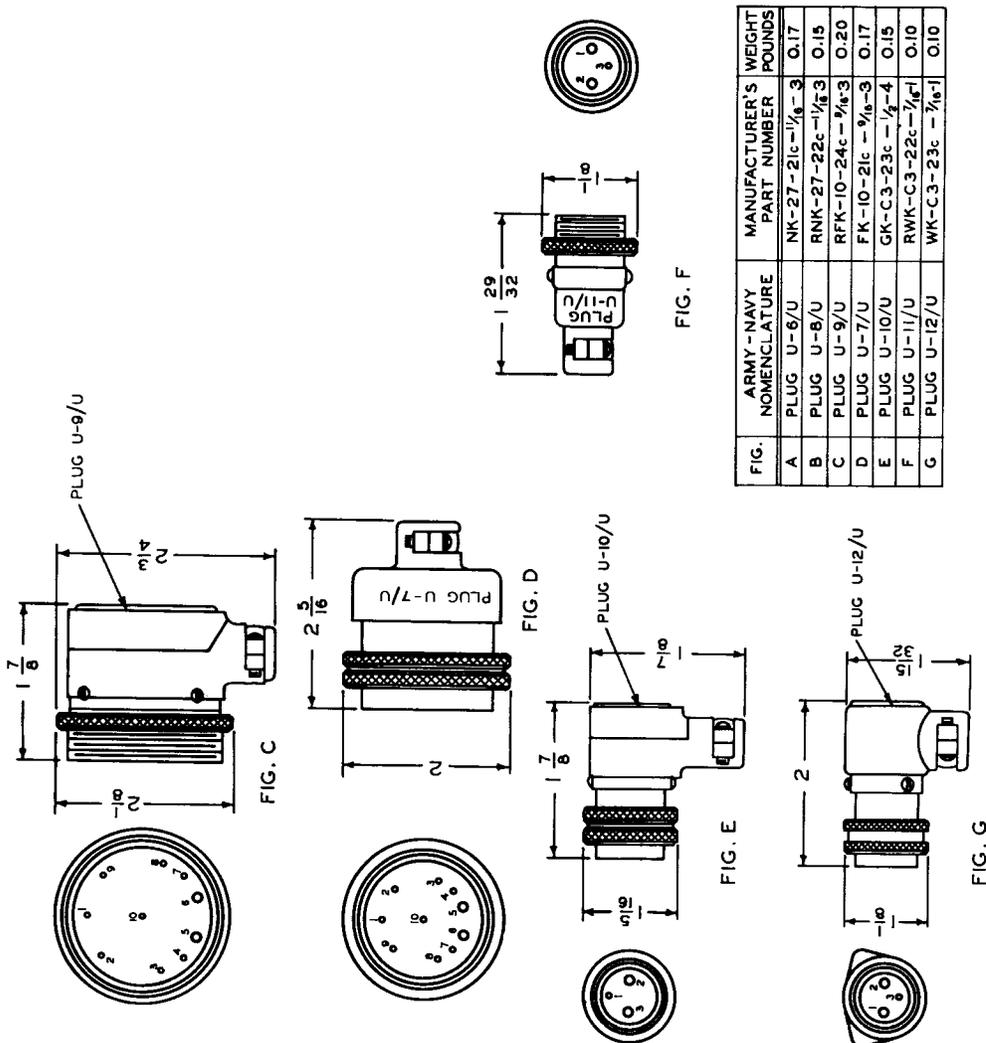


FIG.	ARMY-NAVY NOMENCLATURE	MANUFACTURER'S PART NUMBER	WEIGHT POUNDS
A	PLUG U-6/U	NK-27-21c-1/8-3	0.17
B	PLUG U-8/U	RNK-27-22c-1/8-3	0.15
C	PLUG U-9/U	RFK-10-24c-9/16-3	0.20
D	PLUG U-7/U	FK-10-21c-9/16-3	0.17
E	PLUG U-10/U	GK-C-3-23c-1/2-4	0.15
F	PLUG U-11/U	RWK-C-3-22c-1/8-1	0.10
G	PLUG U-12/U	WK-C-3-23c-1/8-1	0.10

- NOTES:
- 1-REMOVE INSULATION FROM $\frac{1}{4}$ INCH OF END OF EACH WIRE AND TIN.
 - 2-REMOVE PLUG COVER, LOOSEN CABLE CLAMP, AND PASS WIRES THROUGH PLUG COVER.
 - 3-SLIP A PIECE OF PHENOLIC TUBING OVER EACH WIRE. THIS TUBING SHOULD BE LONG ENOUGH TO COVER THE SOLDERED CONNECTION AND EXTEND THROUGH THE CABLE CLAMP.
 - 4-SOLDER EACH WIRE TO ITS APPROPRIATE PIN. DO NOT USE EXCESSIVE AMOUNTS OF SOLDER AND WATCH FOR STRAY STRANDS WHICH MAY SHORT PINS TOGETHER. SLIDE TUBING DOWN OVER EACH SOLDERED CONNECTION.
 - 5-DRAW THE PLUG COVER OVER THE CABLE AND THE ENDS OF THE PHENOLIC TUBING. REASSEMBLE PLUG AND TIGHTEN CABLE CLAMP.
 - 6-THE RIGHT ANGLE PLUG COVERS MAY BE ASSEMBLED TO THE PLUG BODY IN OTHER POSITIONS THAN THOSE SHOWN, TO SUIT INSTALLATION.

Figure 5-14—Plugs for Radio Transmitting Set

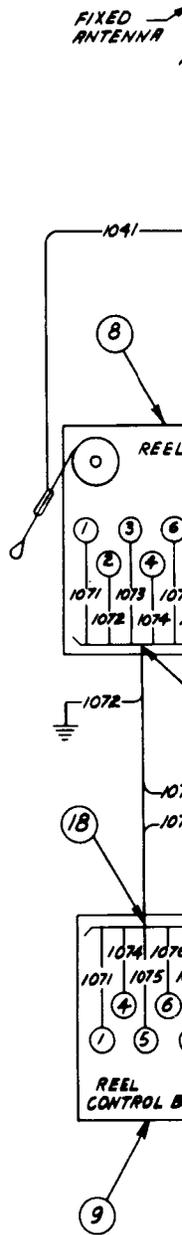
WIRE TABLE

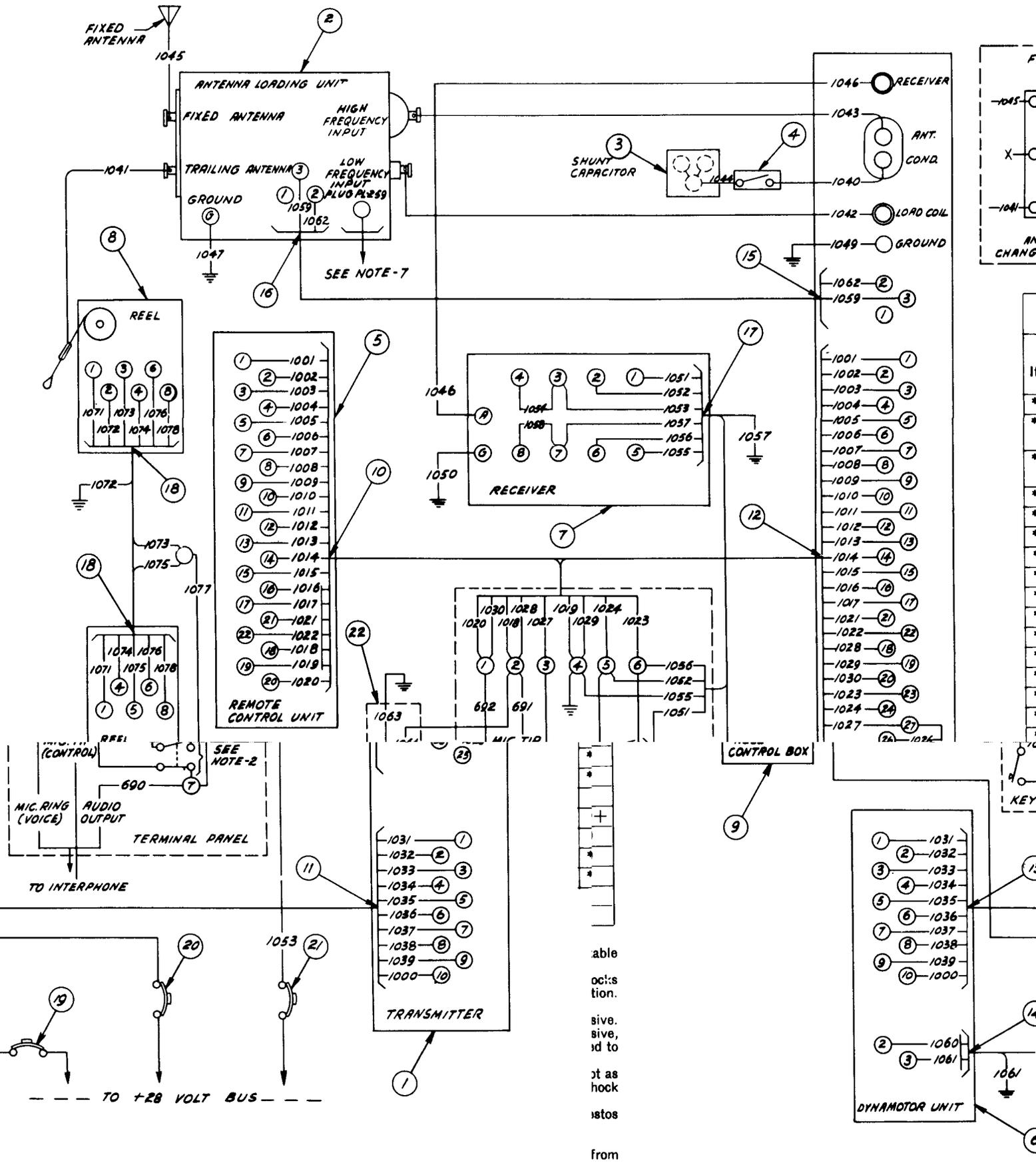
All wires to be Aircraft Cable per Spec. AN-J-C-48 unless otherwise specified.
 + Indicates wires to be individually shielded per Spec. 95-27273.
 ● Indicates wires whose voltage drop must not exceed limits of Spec. 95-32310

Ref. Note	Wire No.	Maximum Operating Voltage	Maximum Allowable Resistance in Ohms (71° C.)	Minimum Cable Size Permitted	Ref. Note	Wire No.	Maximum Operating Voltage	Maximum Allowable Resistance in Ohms (71° C.)	Minimum Cable Size Permitted
6	1000	1150	1	16	4	1041	5000		10
	1001	30	1	20	4	1042	3750		10
	1002	30	1	20	4	1043	5000		10
	1003	30	1	20	4	1044	5000		10
	1004	30	1	20	4	1045	7500		10
	1005	30	1	20		1046	60		14
	1006	30	1	20	5	1047	0	.001	14
	1007	30	1	20					
	1008	30	1	20	5	1049	0	.001	14
	1009	30	1	20	5	1050	0	.001	14
	1010	30	1	20		1051	100	1	20
	1011	30	1	20		1052	220	1	20
	1012	30	1	20		1053	30	.02	16
	1013	30	1	20		1054	30	Jumper	16
	1014	30	1	20		1055	0		18
	1015	30	0.8	20		1056	220	1	20
	1016	30	1	20	5	1057	0	.001	16
	1017	30	1	20		1058	0	Jumper	16
	1018	30	0.25	20		1059	30	0.25	18
	1019	0	0.25	18		1060	30	.0125	8
	1020	30	0.25	20	5	1061	0	.001	8
	1021	30	1	20		1062	30	0.25	18
	1022	30	0.8	20		1063	0	0.25	18
	1023	220	1	20		1064	30	0.25	18
	1024	220	1	20					
						1071	30	0.1	18
	1026	100	1	20	5	1072	0	0.1	16
	1027	100	1	20		1073	30	0.1	18
	1028	30	0.25	20		1074	30	0.1	18
	1029	0	0.25	18		1075	30	.3	20
	1030	30	0.25	20		1076	30	0.1	18
	1031	400	1	20		1077	30	0.1	18
	1032	400	1	20		1078	30	0.1	18
	1033	30	0.8	20					
	1034	30	0.05	18					
	1035	0	0.025	14		690	100	1	20+
	1036	30	0.05	14		691	30	0.25	20
	1037	30	1	20		692	30	0.25	20
	1038	30	0.8	20					
	1039	400	1	20					
4	1040	5000	Less than 12"	10					

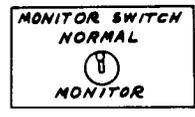
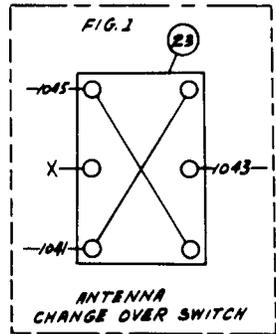
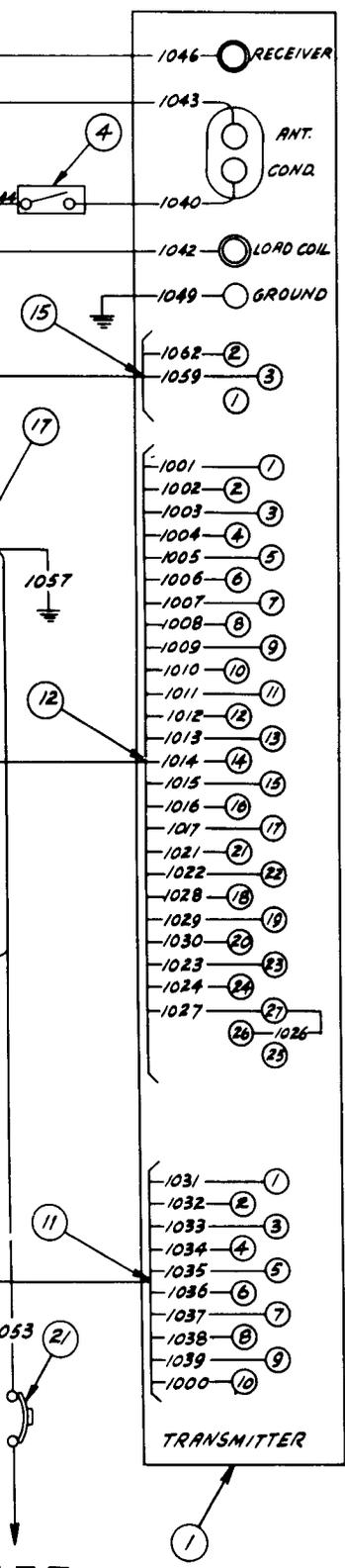
NOTES:

- 1 All Terminal Strips required in the installation of the wiring shall be made of suitable insulating material and with terminal spacing to prevent voltage breakdown.
- 2 Use two switches, Monitor Switch AM-3022-2, ganged by means of Connector Blocks 37A2070, or one Switch AN-3023-3. Wire switch as in diagram, for normal or up position. Locate switch within easy reach of radio operator, preferably in Connector Panel.
- 3 If remote control is not required, delete items ③ and ⑩, and wires 1001 to 1022 inclusive.
- 4 To prevent corona discharge at high altitudes, Antenna Leads 1040 to 1045 inclusive, shall be solid copper wire covered with insulating Beads IN-83. They shall be routed to prevent sharp bends and spaced at least 1½ inches from all metallic objects.
- 5 Ground connections shall be made to the frame of the aircraft. All leads shall be kept as short as possible with only enough slack to allow free movement of unit on its shock mount. Remove all paint at point of contact.
- 6 Wire #1000 to be "Type ACA 3000 Volt Radio Hookup Wire," as made by Rockbestos Products Corp., New Haven, Conn., or equal.
- 7 Antenna Socket for a Plug PL-259 from other radio equipment.
- 8 Items 3 and 4 required only when fixed wire antenna measures less than 55 feet from transmitter to farthest end. Do not include short end of "T" type antenna.
- 9 When low frequency components are not installed delete items ②, ⑩ and ⑪. Substitute item ⑨ (Fig. 1) delete wire 1042, connect terminal "X", Fig. 1, to antenna terminal of other radio equipment or connect direct to ground.





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COMPONENT TABLE						
Item	Quan. Req'd.	Equipment Nomenclature			Spec. or Installation Drawing	Installation Figure No.
		Description	Type No.	Manufacturer's Part Number		
* 1	1	Radio Transmitter	T-47A/ART-13		H44G26626	5-1
* 2	1	Antenna Loading Unit (See Note 9)	CU-32/ART-13A		H44G26603	5-5 5-6
* 3	1	Antenna Shunt Capacitor (See Note 8)	CU-24/ART-13		H44D3446	5-12
* 4	1	Switch (See Note 8)	SA-46/ART-13A		H45D2584	5-13
* 5	1	Control Unit (Remote)	C-87/ART-13		H44D3445	5-11
* 6	1	Dynamotor Unit	DY-17/ART-13A		H45G2467	5-3
* 7	1	Radio Receiver	BC-348-()		H40D3166	
* 8	1	Reel (Antenna)	RL-42-B		H42G4623	
* 9	1	Reel Control Box	BC-461		H42G4623	
*10	1	Plug	U-6/U	NK-27-21C $\frac{1}{16}$	H44D3981	5-14
*11	1	Plug	U-7/U	FK-10-21C $\frac{9}{16}$	H44D3981	5-14
*12	1	Plug	U-8/U	RNK-27-22C $\frac{1}{16}$	H44D3981	5-14
*13	1	Plug	U-9/U	RFK-10-24C $\frac{9}{16}$	H44D3981	5-14
*14	1	Plug	U-10/U	GK-C3-23C $\frac{1}{2}$	H44D3981	5-14
*15	1	Plug	U-11/U	RWK-C3-22C $\frac{3}{16}$	H44D3981	5-14
*16	1	Plug	U-12/U	WK-C3-23C $\frac{3}{16}$	H44D3981	5-14
*17	1	Plug	PL-(PORQ) 103		H40D3166	
*18	2	Plug	PL-112		H42-G4623	
19	1	Circuit Breaker	AN-3161-50		AN-C-77A	
20	1	Circuit Breaker	AN-3161-10		AN-C-77A	
21	1	Circuit Breaker	AN-3161-5		AN-C-77A	
*22	1	Key	J-37		H39B3362	
*23	1	Switch (See Note 9)	SA-13/U		H44D3942	5-10

*Indicates Government furnished equipment.

Manufacturer shall indicate to which points on Electrical Wiring Diagram these connections are made.

POWER REQUIRED AT 28 VOLTS INPUT

	Maximum	
Receiver	Stand By On Voice	2 Amps.
Transmitter	Maximum	11 Amps.
	Maximum	37 Amps.
Reel	Maximum	4.5 Amps.

Figure 5-15 - Radio Set AN/ARC-8 - Typical Wiring Diagram

WIRE TABLE

All wires to be Aircraft Cable per Spec. AN-J-C-48 unless otherwise specified.
 + Indicates wires to be individually shielded per Spec. 95-27273.
 ⊗ Indicates wires whose voltage drop must not exceed limits of Spec. 95-32310

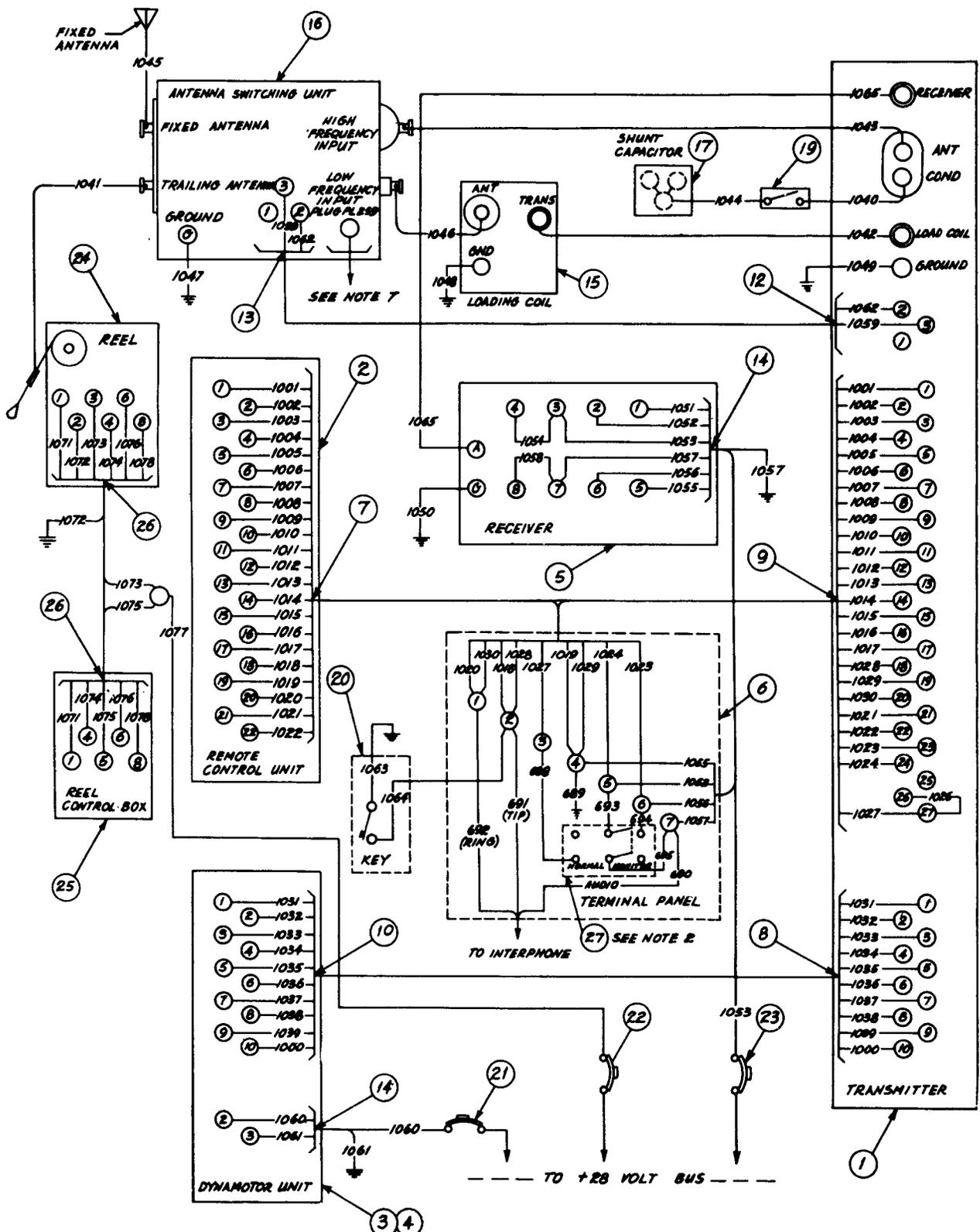
Ref. Note	Wire No.	Maximum Operating Voltage	Maximum Allowable Resistance in Ohms (71° C.)	Minimum Cable Size Permitted	Ref. Note	Wire No.	Maximum Operating Voltage	Maximum Allowable Resistance in Ohms (71° C.)	Minimum Cable Size Permitted
6	1000	1150	1	16	4	1041	5000		10
	1001	30	1	20	4	1042	3750		10
	1002	30	1	20	4	1043	5000		10
	1003	30	1	20	4	1044	5000		10
	1004	30	1	20	4	1045	7500		10
	1005	30	1	20	4	1046	7500		10
	1006	30	1	20	5	1047	0	.001	14
	1007	30	1	20	5	1048	0	.001	14
	1008	30	1	20	5	1049	0	.001	14
	1009	30	1	20	5	1050	0	.001	14
	1010	30	1	20		1051	100	1	20
	1011	30	1	20		1052	220	1	20
	1012	30	1	20		1053	30	.02	16
	1013	30	1	20		1054	30	Jumper	16
	1014	30	1	20		1055	0	0.25	18
	1015	30	0.8	20		1056	220	1	20
	1016	30	1	20	5	1057	0	.001	16
	1017	30	1	20		1058	0	Jumper	16
	1018	30	0.25	20		1059	30	0.25	18
	1019	0	0.25	18		1060	30	.0125	10
	1020	30	0.25	20	5	1061	0	.001	10
	1021	30	1	20		1062	30	0.25	18
	1022	30	0.8	20		1063	0	0.25	18
	1023	220	1	20		1064	30	0.25	18
	1024	220	1	20		1065	60		14
						1071	30	0.1	18
	1026	100	1	20	5	1072	0	0.1	16
	1027	100	1	20		1073	30	0.1	18
	1028	30	0.25	20		1074	30	0.1	18
	1029	0	0.25	18		1075	30	.3	20
	1030	30	0.25	20		1076	30	0.1	18
	1031	400	1	20		1077	30	0.1	18
	1032	400	1	20		1078	30	0.1	18
	1033	30	0.8	20		688	100	1	20
	1034	30	0.05	18		689	0	0.25	18
	1035	0	0.025	14		690	100	1	20+
	1036	30	0.05	14		691	30	0.25	20
	1037	30	1	20		692	30	0.25	20
	1038	30	0.8	20		693	220	1	20
	1039	400	1	20		694	220	1	20
4	1040	5000	Less than 12'	10		695	100	1	20

NOTES:

- 1 All Terminal Strips required in the installation of the wiring shall be made of suitable insulating material and with terminal spacing to prevent voltage breakdown.
- 2 "Monitor-Normal" Switch, locate within easy reach of radio operator.
- 3 If remote control is not required, delete items ⊕ and ⊙, and wires 1001 to 1022 inclusive.
- 4 To prevent corona discharge at high altitudes, Antenna Leads 1040 to 1046 inclusive shall be solid copper wire covered with insulating Beads IN-83. They shall be routed to prevent sharp bends and spaced at least 1 1/4 inches from all metallic objects.
- 5 Ground connections shall be made to the frame of the aircraft. All leads shall be kept as short as possible with only enough slack to allow free movement of unit on its shock mount, remove all paint at point of contact.
- 6 Wire #1000 to be "Type ACA 3000 Volt Radio Hookup Wire", as made by Rockbestos Products Corp., New Haven, Conn., or equal.
- 7 Antenna Socket for a Plug PL-250 from other radio equipment.
- 8 Items ⊕ and ⊙ required only when fixed wire antenna measures less than 55 feet from transmitter to farthest end. Do not include short end of "T" type antenna.
- 9 Either Dynamotor DY 11/ART-13 or Dynamotor DY 12/ART-13 may be supplied.
- 10 When low frequency components are not used delete items ⊕, ⊙, ⊗ and ⊘. Delete wires 1042, 1046, 1047, 1050, and 1062. Substitute item ⊙ (Fig. 1), connect as shown, Terminal "X" to antenna terminal on other radio equipment or directly to ground.

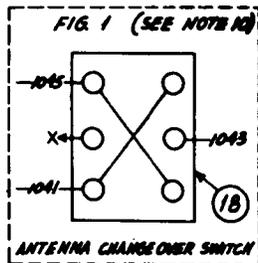
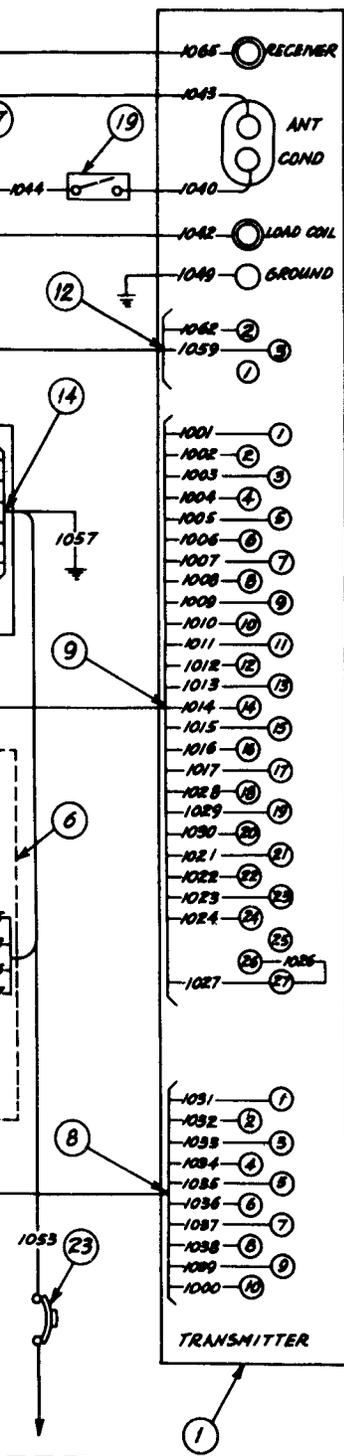
otherwise specified.
273.
of Spec. 95-32310

Maximum Allowable Resistance in Ohms (71° C.)	Minimum Cable Size Permitted
	10
	10
	10
	10
	10
.001	14
.001	14
.001	14
.001	14
1	20
1	20
.02	16
Jumper	16
0.25	18
1	20
.001	16
Jumper	16
0.25	18
.0125	10
.001	10
0.25	18
0.25	18
0.25	18
	14
0.1	18
0.1	16
0.1	18
0.1	18
.3	20
0.1	18
0.1	18
1	20
0.25	18
1	20+
0.25	20
0.25	20
1	20
1	20
1	20



*In	Item
* 1	
* 2	
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6	
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be made of suitable bakdown.
or.
01 to 1022 inclusive.
10 to 1046 inclusive
y shall be routed to
c objects.
leads shall be kept as
of unit on its shock
made by Rockbestos
less than 55 feet from
ntenna.
may be supplied.
, ⊕ and ⊙. Delete
, connect as shown,
tly to ground.



COMPONENT TABLE					
*Indicates Government Furnished Equipment.					
Item	Quan. Req'd.	Equipment Nomenclature			Spec. or Installation Drawing
		Description	Designation or Type No.	Manufacturer's Part Number	
* 1	1	Radio Transmitter	T47/ART-13	52286	H44G3442
* 2	1	Control Unit (Remote)	C 87/ART-13	23330	H44D3445
* 3	1	Dynamotor Unit (See Note 9)	DY 11/ART-13	21931 & 23333	H44D3444
		Dynamotor Unit	DY 12/ART-13	21932 & 23333	H44D3444
* 4	1	Mounting Plate	MT 164/ART-13	23333	H44D3444
* 5	1	Receiver	BC-348 ()		H40D3166
6	1	Terminal Panel			
* 7	1	Plug	U-6/U	NK-27-21C 1 1/16	H44D3981
* 8	1	Plug	U-7/U	FK-10-21C 3/16	H44D3981
* 9	1	Plug	U-8/U	RNK-27-22C 1 1/16	H44D3981
*10	1	Plug	U-9/U	RFK-10-24C 3/16	H44D3981
*11	1	Plug	U-10/U	GK-C3-23C 1/2	H44D3981
*12	1	Plug	U-11/U	RWK-C3-23C 1/2	H44D3981
*13	1	Plug	U-12/U	WK-C3-23C 3/16	H44D3981
*14	1	Plug	PL-()-103		H40D3166
*15	1	Antenna Loading Coil	CU-25/ART-13	47281	H44D3443
*16	1	Antenna Switching Unit	SA-22/ART-13		H44D3686
*17	1	Antenna Shunt Capacitor	CU-24/ART-13	481628	H44D3446
*18	1	Switch (See Note 10)	SA-13/U		H44D3942
*19	1	Switch	SA-46/ART-13		H45D2584
*20	1	Key	J-37		H39B3362
21	1	Circuit Breaker	AN3161-P50		AN-C-77
22	1	Circuit Breaker	AN3161-P10		AN-C-77
23	1	Circuit Breaker	AN3161-P5		AN-C-77
*24	1	Reel	RL-42-B		H42G4623
*25	1	Reel Control Box	BC-461		H42G4623
*26	2	Plug	PL-112		H42G4623
*27	1	Switch (See Note 2)	AN3023-3		AN-5-20

Manufacturer shall indicate to which points on Electrical Wiring Diagram these connections are made.

POWER REQUIRED AT 28 VOLTS INPUT

Receiver	Maximum	2 Amps.
Transmitter	Stand By On Voice	11 Amps.
	Maximum	37 Amps.
Reel	Maximum	4.5 Amps.

Figure 5-16—Radio Transmitting Set AN/ART-13—Typical Wiring Diagram

WIRE TABLE

EACH CABLE FOR THIS EQUIPMENT SHALL BE IDENTIFIED IN THE AIRPLANE WIRING DIAGRAM AND SHALL BE LABELED ON THE AIRPLANE WIRING IN ACCORDANCE WITH SPEC. AN-W-14 EXCEPT THAT THE CABLE NUMBER OF THE CABLE IDENTIFICATION CODING SHALL BE AS ASSIGNED HEREIN.

(EXAMPLE OF THE FIRST WIRE IN THE TABLE BELOW)

RL96A18

REF. NOTE	WIRE NO.	MAXIMUM OPERATING VOLTAGE	MAX. ALLOWABLE RESISTANCE IN OHMS (71° C)	MINIMUM CABLE SIZE PERMITTED
	96	30	3	18
	97	30	3	18
6	99	0	0.001	14
3 & 6	100	50	3	14
4 & 5	AA	5000		10
4 & 5	FF	5000		10
4 & 5	GG	5000		10
3,4 & 5	HH	5000		10

7. WHEN ANTENNA LOADING UNIT CU-32/ART-13A IS INSTALLED A PLACARD SHALL BE INSTALLED VISIBLE TO EACH OPERATOR AS FOLLOWS: "WHEN USING LF CHANNEL ON THE FIXED WIRE ANTENNA, TRANSMISSION MUST BE LIMITED TO CW OPERATION. MCW OR VOICE TRANSMISSION WILL RESULT IN EQUIPMENT FAILURE."
6. GROUND CONNECTION FOR CABLE 99 (AND FOR CABLE 100 WHEN REQUIRED) SHALL BE MADE TO THE METAL FRAME OF THE AIRCRAFT. REMOVE ALL PAINT AT THE POINT OF CONTACT. GROUND LEADS SHALL BE KEPT AS SHORT AS POSSIBLE WITH ONLY ENOUGH SLACK TO ALLOW FREE MOVEMENT OF THE UNIT ON ITS SHOCK MOUNT
5. THE CONTRACTOR IS NOT REQUIRED TO LABEL CABLES AA, FF, GG, AND HH.
4. TO PREVENT CORONA DISCHARGE AT HIGH ALTITUDES ANTENNA LEADS, AA, FF, GG, AND HH SHALL BE SOLID COPPER WIRE INSULATED WITH BEADS IN-83 WHERE NECESSARY FOR PROTECTION. THE LEADS SHALL BE ROUTED TO PREVENT SHARP BENDS AND THEY SHALL BE SPAGED AT LEAST 1-1/2 INCHES FROM ALL METALLIC OBJECTS, EXCEPT LEAD FF WHICH SHALL HAVE AT LEAST 3/4 INCH CLEARANCE.
3. WHEN CONNECTION OF WIRE 100 TO AN AUXILIARY RECEIVING EQUIPMENT IS REQUIRED A TRAILING WIRE ANTENNA IS NECESSARY. WHEN A TRAILING WIRE ANTENNA IS INSTALLED AND NO CONNECTIONS TO AUXILIARY RECEIVING EQUIPMENT IS REQUIRED WIRE 100 SHALL BE GROUNDED. WHEN NO TRAILING WIRE ANTENNA IS INSTALLED PLUG PL-259 AND WIRE 100 SHALL BE DELETED.
2. WHEN ANTENNA LOADING UNIT CU-32/ART-13A IS INSTALLED PANEL MX-128/ART-13 SHALL BE REMOVED FROM THE RADIO TRANSMITTER AND REPLACED BY OSCILLATOR O-17/ART-13A.
1. THIS DRAWING SUPPLIMENTS DRAWING AD3544. CONNECTION OF LEADIN WIRE AA SHALL BE IN ACCORDANCE WITH THIS DRAWING.

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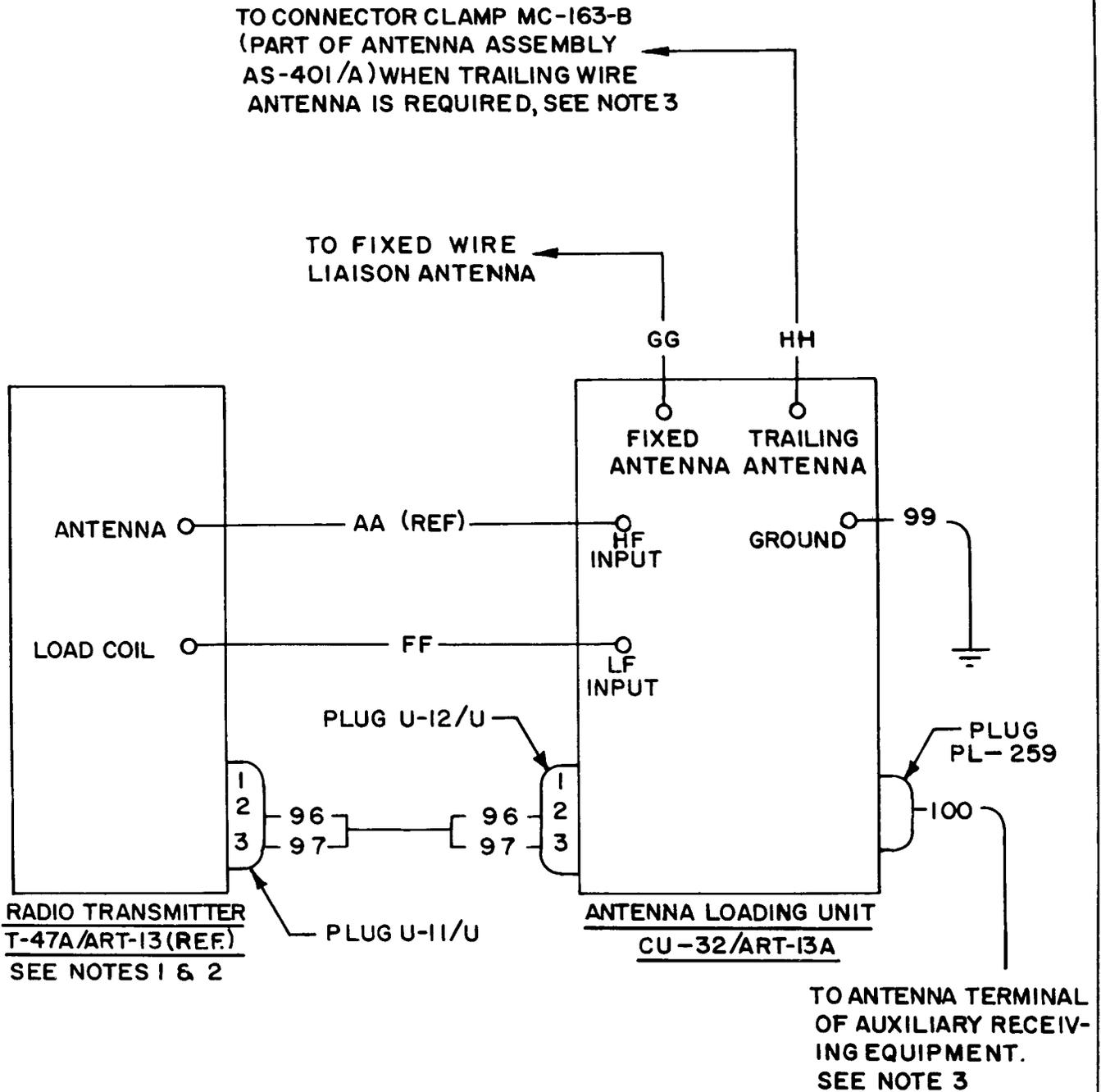


Figure 5-17. Antenna Loading Unit CU-32/ART-13A. Wiring Diagram