

PARTS LIST AND DESCRIPTION (CONTINUED)

TRANSFORMER (DRIVER)

ITEM No.	TURNS		REPLACEMENT DATA				NOTES
	RATIO	SEC.	IT'T PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T2	4	1	1020				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	IT'T PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T3	1000 Ω CT	250 CT	1021				

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA				NOTES
	SIZE	FIELD	V. C. IMP.	IT'T PART No.	QUAM PART No.		
SP1	2" x 8"	PM	3-4 Ω	1025			

FUSES

ITEM No.	RATING		REPLACEMENT DATA				BUSS PART No.
	TYPE		IT'T PART No.	HOLDER	FUSE	HOLDER	
M1	3AG 1/4A S/B	1/4A 125V 1A	1008 ① 1437 ②	101094	313, 250	121004	MDL 1/4 4405

① AC Power Supply.
② DC Power Supply.

MISCELLANEOUS

ITEM No.	PART NAME	IT'T PART No.	NOTES
M2	Crystal	1118	Receive
M3	Crystal	1028	Transmit
M4	Crystal	1021	2nd Converter (2.135MC)
M5	Switch	1021	Channel Selector (Rotary Type)
M6	Relay	1021	Polarity (2 Position Slide Type)
M7	Microphone	1062	Receive-Transmit (1050, 12VDC)

WIRING DATA

General-use Hook-up Wire Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead Use BELDEN No. 8524 (Stranded) Available in 12 Colors
8237 Low Loss (RG-8/U Type)
8240 (Solid) Miniature (RG-58/U)
8250 (Stranded) Miniature (RG-58A/U)
8497 3 Conductor - 1 Shielded for Press-to-Talk (Neoprene)
8498 3 Conductor - 1 Shielded for Press-to-Talk (Vinyl)
Ignition Noise Suppression Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap Use BELDEN No. 8681 (3/8 in.)

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES. (0 CURRENT)	IT'T PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
L15	.900A	.5 Ω	1056				

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	IT'T PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
T1	117V @ .105A (.172A)*	12V @ .360A DC	1110				* Transmit



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement

DATE 1-63

SET 614 FOLDER 10

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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TRADE NAME	ITT Model 320
MANUFACTURER	Distributor Products Div., International Telephone & Telegraph Corp., P. O. Box 99, Lodi, N. J.
TYPE SET	AC-Battery Operated 18 Transistor Citizens Band Transmitter-Receiver
POWER SUPPLY	110 - 120 Volts AC (or) 12 Volt Storage Battery
RATING	9 Watts, .105 Amp. @117 Volts AC (Receive) .36 Amp. @12.6 Volts DC (Receive) 17 Watts, .172 Amp. @117 Volts AC (Transmit) .82 Amp. @12.6 Volts DC (Transmit)
TUNING RANGE	Any 5 of Citizens Band Channels 1 thru 22

NOTICE

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 19, SUBPART D, SECTION 19.71.)



ITT
MODEL 320

FOLDER 10
SET 614

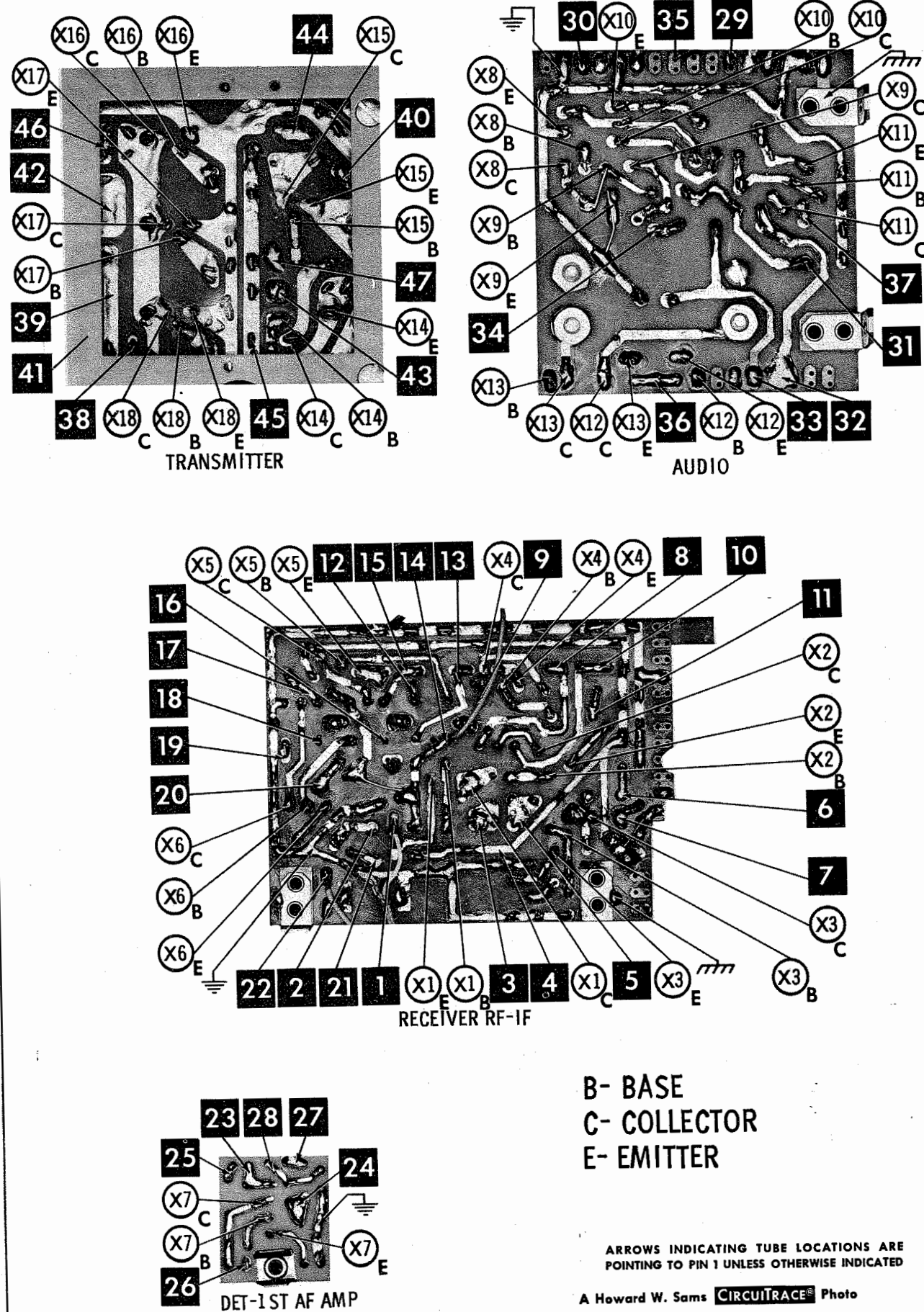
PHOTOFACT® Folder

with CIRCUITRACE®

ITT
MODEL 320

ITT
MODEL 320

SET 614 FOLDER 10



PARTS LIST AND DESCRIPTION

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			GENERAL ELECTRIC PART No.	RCA PART No.	
X1	M551	RF Amplifier	GE-1	2N1177	PNP
X2	S965A	Mixer	GE-1	2N1178	PNP
X3	R429	Oscillator	GE-1	2N1178	PNP
X4	R429	2nd Converter	GE-1	2N1426	PNP
X5	R429	1st IF Amplifier	GE-1	2N1180	PNP
X6	R429	2nd IF Amplifier	GE-1	2N1180	PNP
X7	M108	1st AF Amplifier	GE-2	2N406	PNP
X8	2N1274	1st Squelch Amplifier	GE-2	2N591	PNP
X9	2N1274	2nd Squelch Amplifier	GE-2	2N591	PNP
X10	2N1274	2nd AF Amp. - Speech Amp.	GE-2	2N591	PNP
X11	2N1274	Driver	GE-2	2N591	PNP
X12	2N250	Output-Modulator	GE-3	2N301	PNP
X13	PT855	Transmit-Modulator	GE-3	2N301	PNP
X14	PT855	Transmit-Modulator	GE-3	2N301	PNP
X15	PT855	Transmit-Modulator	GE-3	2N301	PNP
X16	PT857	Final RF Amplifier	GE-6	2N301	PNP
X17	PT857	Final RF Amplifier	GE-6	2N301	PNP
X18	PT857	Final RF Amplifier	GE-6	2N301	PNP

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Type or Part No.	RECTIFIERS		NOTES
			SARKES TARZIAN PART No.	RCA PART No.	
X19	800A	1403	IN3183	IN3183	AC Rectifier (IN536)
X20	800A	1403	IN3183	IN3183	Shunt Regulator (Zener 2470)
X21	800A	1403	IN3183	IN3183	Audio Detector (IN90)
X22	800A	1403	IN3183	IN3183	Noise Limiter (IN34)
X23	800A	0624	IN3183	IN3183	Squelch (IN270)
X24	800A	1153	IN3183	IN3183	
X25	800A	1679	IN3183	IN3183	
X26	800A	1154	IN3183	IN3183	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLTS	ITT PART No.	AEROVOX PART No.	REPLACEMENT DATA	
					GENERAL ELECTRIC PART No.	SPRAGUE PART No.
C1	15	15	1013	ECPD1505	MTL-10	VL-1168
C2	15	15	1013	ECPD1505	MTL-10	VL-1168
C3	15	15	1013	ECPD1505	MTL-10	VL-1168
C4	15	15	1013	ECPD1505	MTL-10	VL-1168
C5	15	15	1013	ECPD1505	MTL-10	VL-1168
C6	15	15	1013	ECPD1505	MTL-10	VL-1168
C7	15	15	1013	ECPD1505	MTL-10	VL-1168
C8	15	15	1013	ECPD1505	MTL-10	VL-1168
C9	15	15	1013	ECPD1505	MTL-10	VL-1168
C10	15	15	1013	ECPD1505	MTL-10	VL-1168

Note 1. Not used in some versions.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA	
			AEROVOX PART No.	SPRAGUE PART No.
C11	.05		TTD-05	5GA-Q33
C12	.05		TTD-05	5GA-Q33
C13	.05		TTD-05	5GA-Q33
C14	.05		TTD-05	5GA-Q33
C15	.05		TTD-05	5GA-Q33
C16	.05		TTD-05	5GA-Q33
C17	.05		TTD-05	5GA-Q33
C18	.05		TTD-05	5GA-Q33

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA		SPRAGUE PART No.
			AEROVOX PART No.	ELMOCO PART No.	
C19	.05	#1417	TTD-05	CCD-180	5GA-Q18
C20	.05		TTD-05	CCD-180	5GA-Q18
C21	.05		TTD-05	CCD-180	5GA-Q18
C22	.05		TTD-05	CCD-180	5GA-Q18
C23	.05		TTD-05	CCD-180	5GA-Q18
C24	.05		TTD-05	CCD-180	5GA-Q18
C25	.05		TTD-05	CCD-180	5GA-Q18
C26	.05		TTD-05	CCD-180	5GA-Q18
C27	.05		TTD-05	CCD-180	5GA-Q18
C28	.05		TTD-05	CCD-180	5GA-Q18
C29	.05		TTD-05	CCD-180	5GA-Q18
C30	.05		TTD-05	CCD-180	5GA-Q18
C31	.05		TTD-05	CCD-180	5GA-Q18
C32	.05		TTD-05	CCD-180	5GA-Q18
C33	.05		TTD-05	CCD-180	5GA-Q18
C34	.05		TTD-05	CCD-180	5GA-Q18
C35	.05		TTD-05	CCD-180	5GA-Q18
C36	.05		TTD-05	CCD-180	5GA-Q18
C37	.05		TTD-05	CCD-180	5GA-Q18
C38	.05		TTD-05	CCD-180	5GA-Q18
C39	.05		TTD-05	CCD-180	5GA-Q18
C40	.05		TTD-05	CCD-180	5GA-Q18
C41	.05		TTD-05	CCD-180	5GA-Q18
C42	.05		TTD-05	CCD-180	5GA-Q18
C43	.05		TTD-05	CCD-180	5GA-Q18
C44	.05		TTD-05	CCD-180	5GA-Q18
C45	.05		TTD-05	CCD-180	5GA-Q18
C46	.05		TTD-05	CCD-180	5GA-Q18
C47	.05		TTD-05	CCD-180	5GA-Q18
C48	.05		TTD-05	CCD-180	5GA-Q18
C49	.05		TTD-05	CCD-180	5GA-Q18
C50	.05		TTD-05	CCD-180	5GA-Q18
C51	.05		TTD-05	CCD-180	5GA-Q18
C52	.05		TTD-05	CCD-180	5GA-Q18
C53	.05		TTD-05	CCD-180	5GA-Q18
C54	.05		TTD-05	CCD-180	5GA-Q18
C55	.05		TTD-05	CCD-180	5GA-Q18
C56	.05		TTD-05	CCD-180	5GA-Q18
C57	.05		TTD-05	CCD-180	5GA-Q18
C58	.05		TTD-05	CCD-180	5GA-Q18
C59	.05		TTD-05	CCD-180	5GA-Q18
C60	.05		TTD-05	CCD-180	5GA-Q18
C61	.05		TTD-05	CCD-180	5GA-Q18
C62	.05		TTD-05	CCD-180	5GA-Q18
C63	.05		TTD-05	CCD-180	5GA-Q18
C64	.05		TTD-05	CCD-180	5GA-Q18
C65	.05		TTD-05	CCD-180	5GA-Q18

ITT Part Number.

† Alternate Value.

CONTROLS

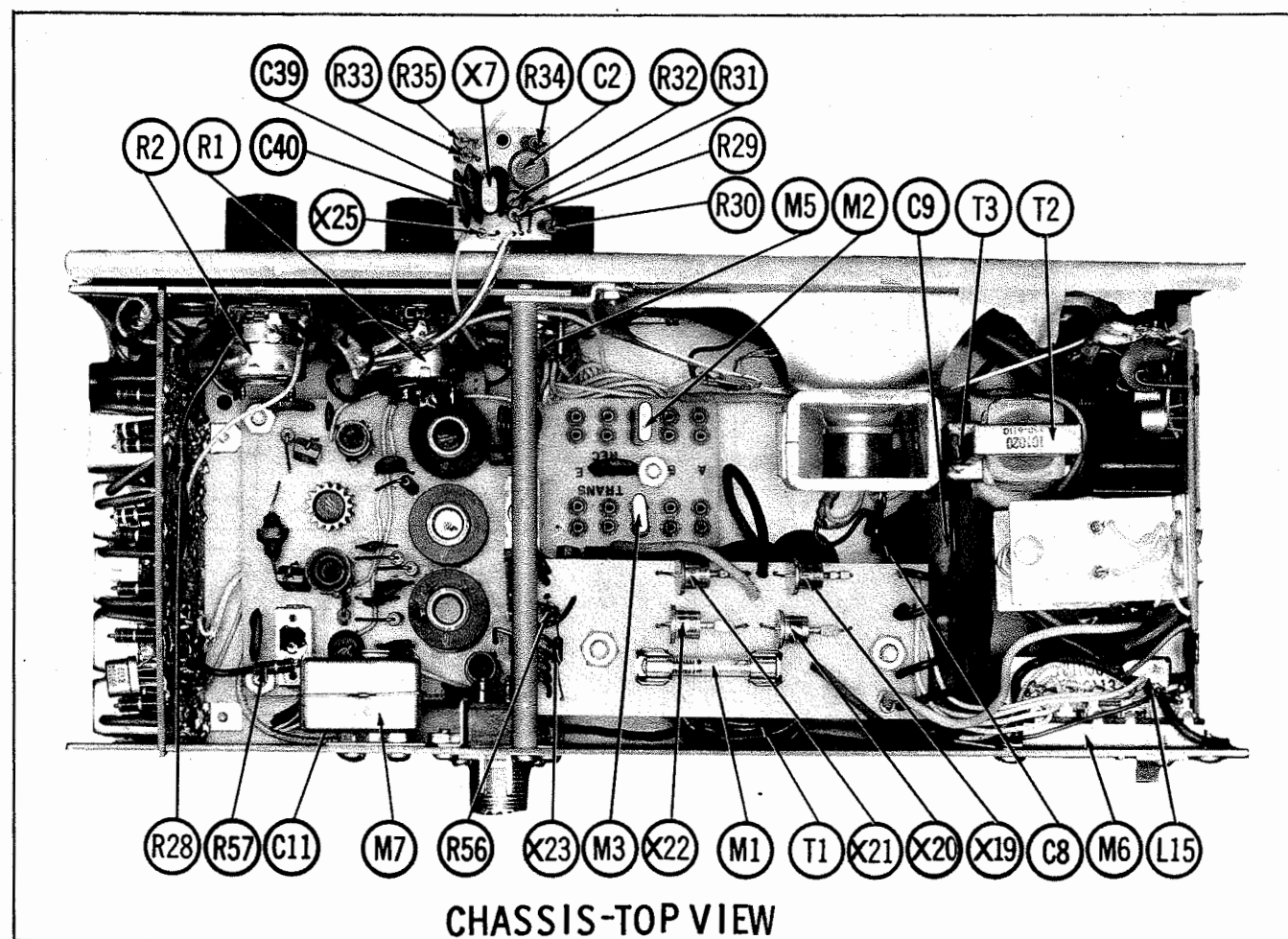
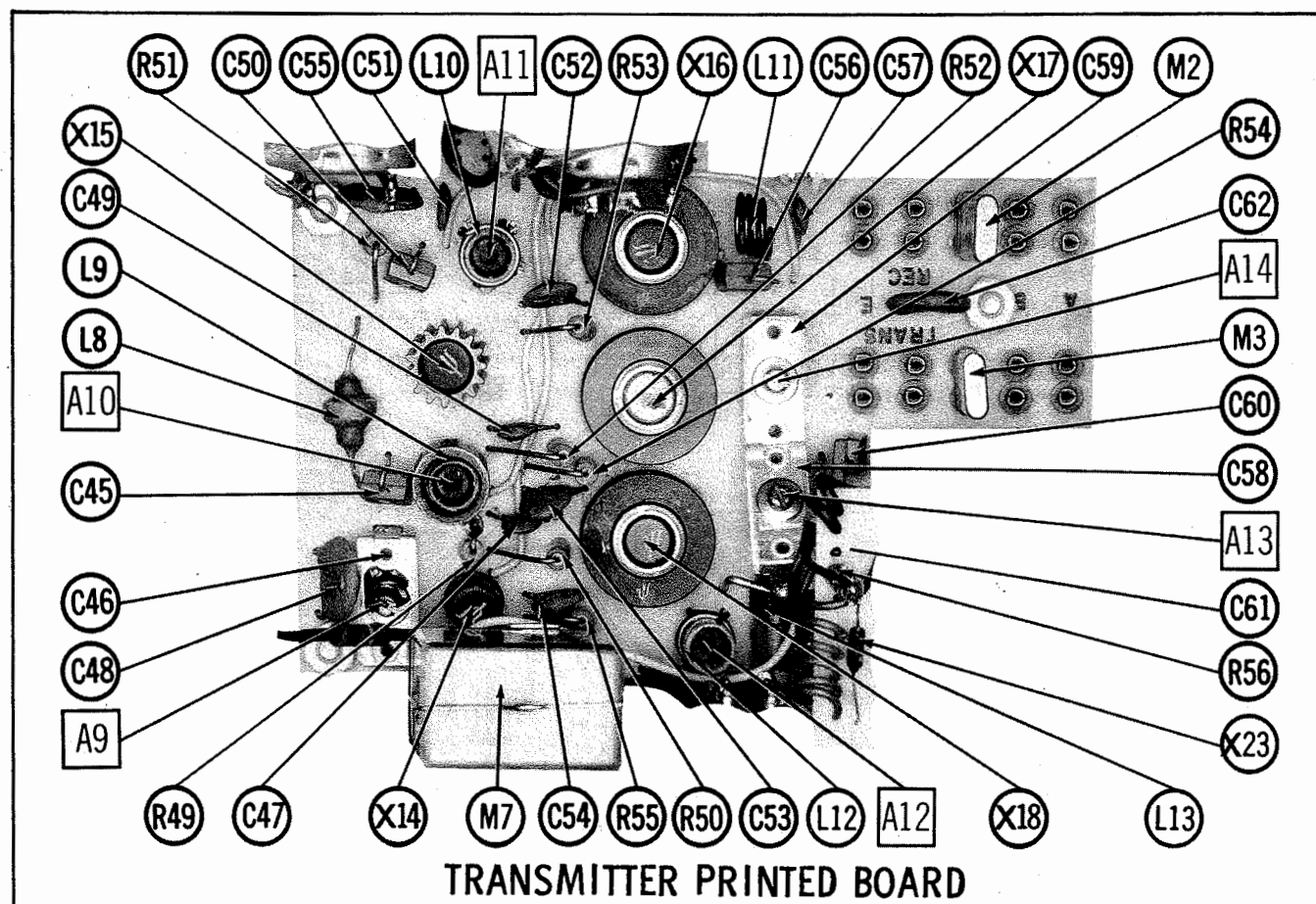
All wattages 1/2 watt, or less, unless otherwise listed.

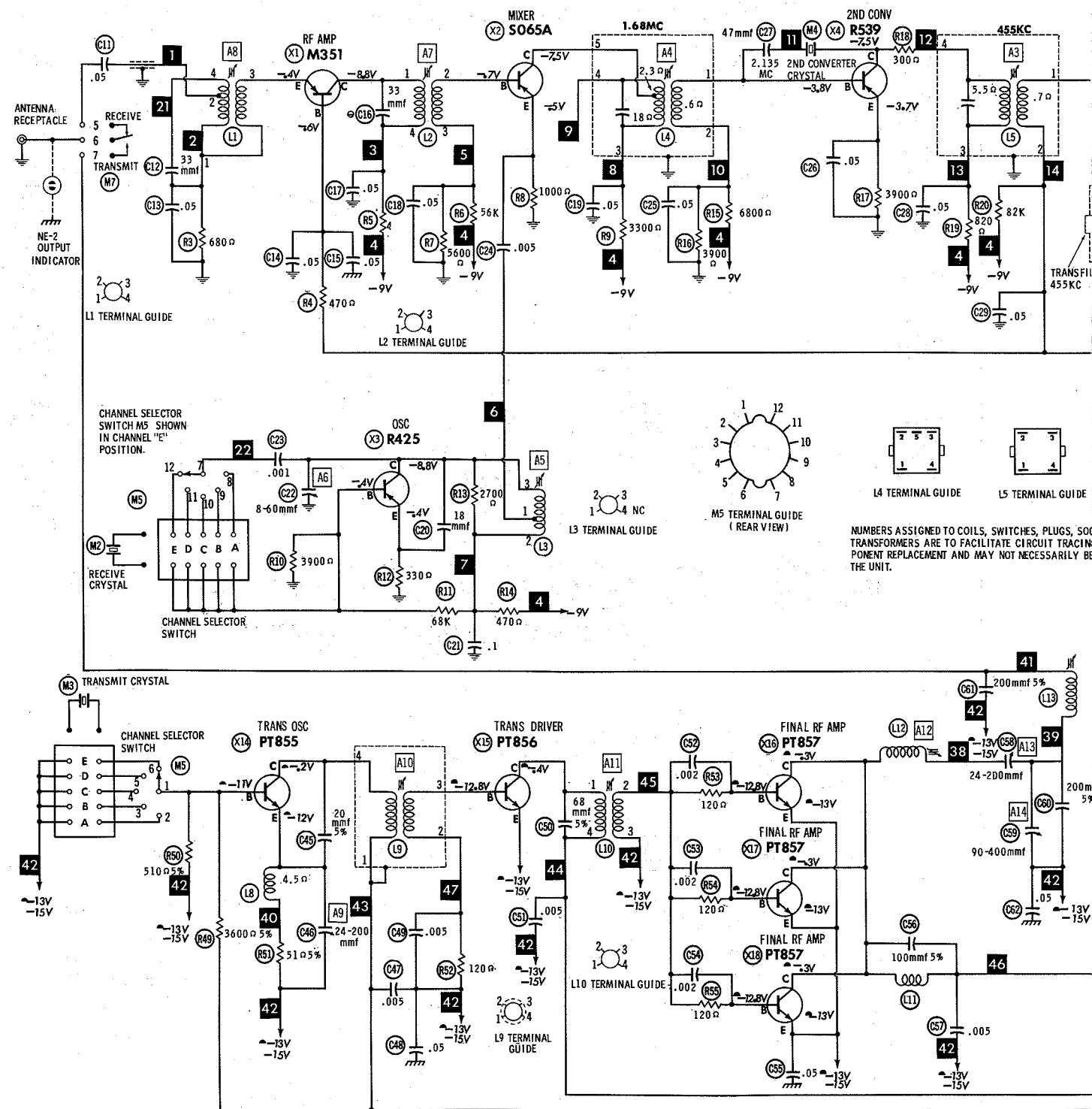
ITEM No.	USE	RESISTANCE	ITT PART No.	CENTRALAB PART No.	REPLACEMENT DATA	
					CLAROSTAT PART No.	MALLORY PART No.
R1	Volume, Power On-Off	5000Ω	1007	B-11, KR-2 or (P2-5000, S1204, KR-1)	Q13-114, 76-2	U-12, U827 or (UAS3A, U842, SFI000)
R2	Squelch Squelch On-Off	5000Ω	1189	B-11, KR-1 or (P2-5000, S1204, KR-2)	Q13-114, 76-1	U-12, U828 or (UAS3A, U841, SFI000)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA	
			ITT PART No.	WORKMAN PART No.
R3	680Ω		4700	4700
R4	470Ω		4700	4700





ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED
 ■ MEASURED IN TRANSMIT POSITION

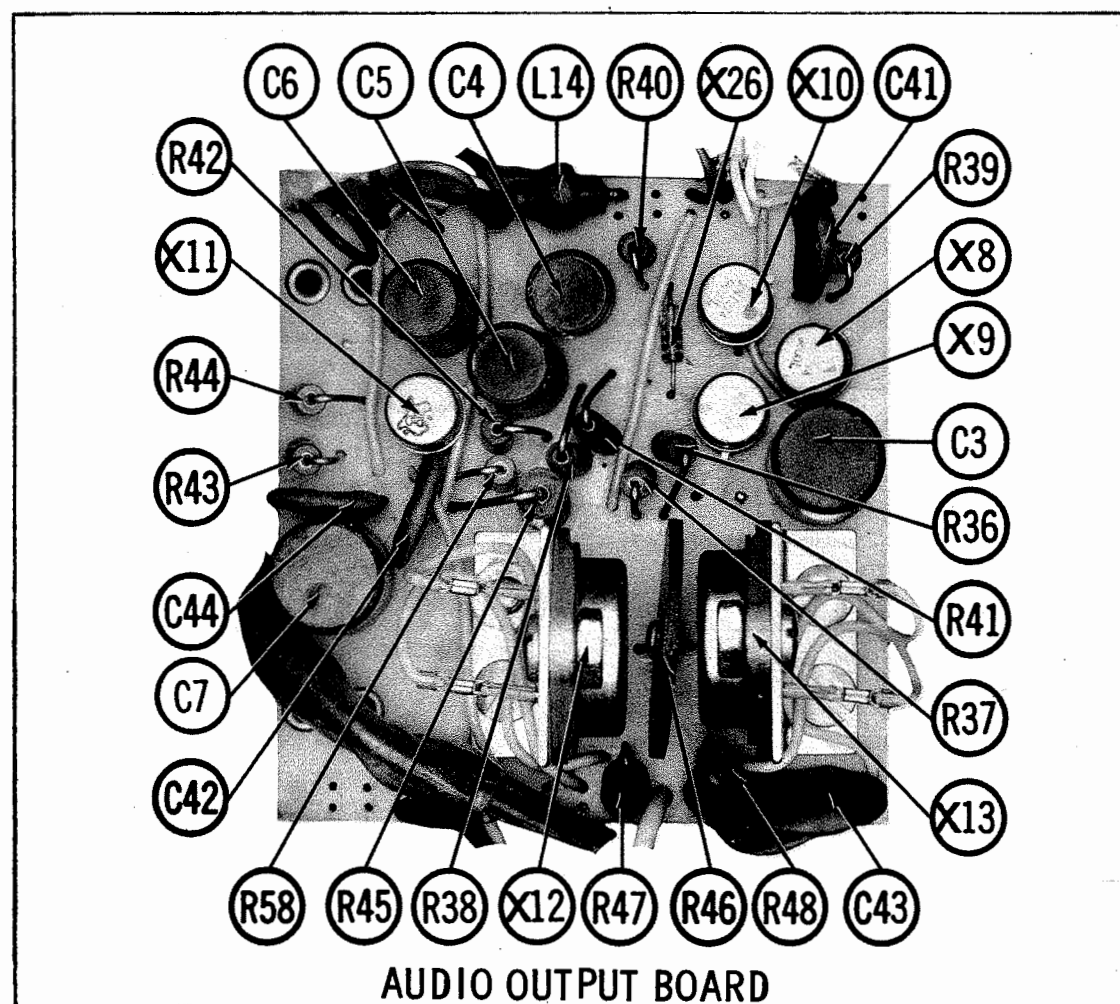
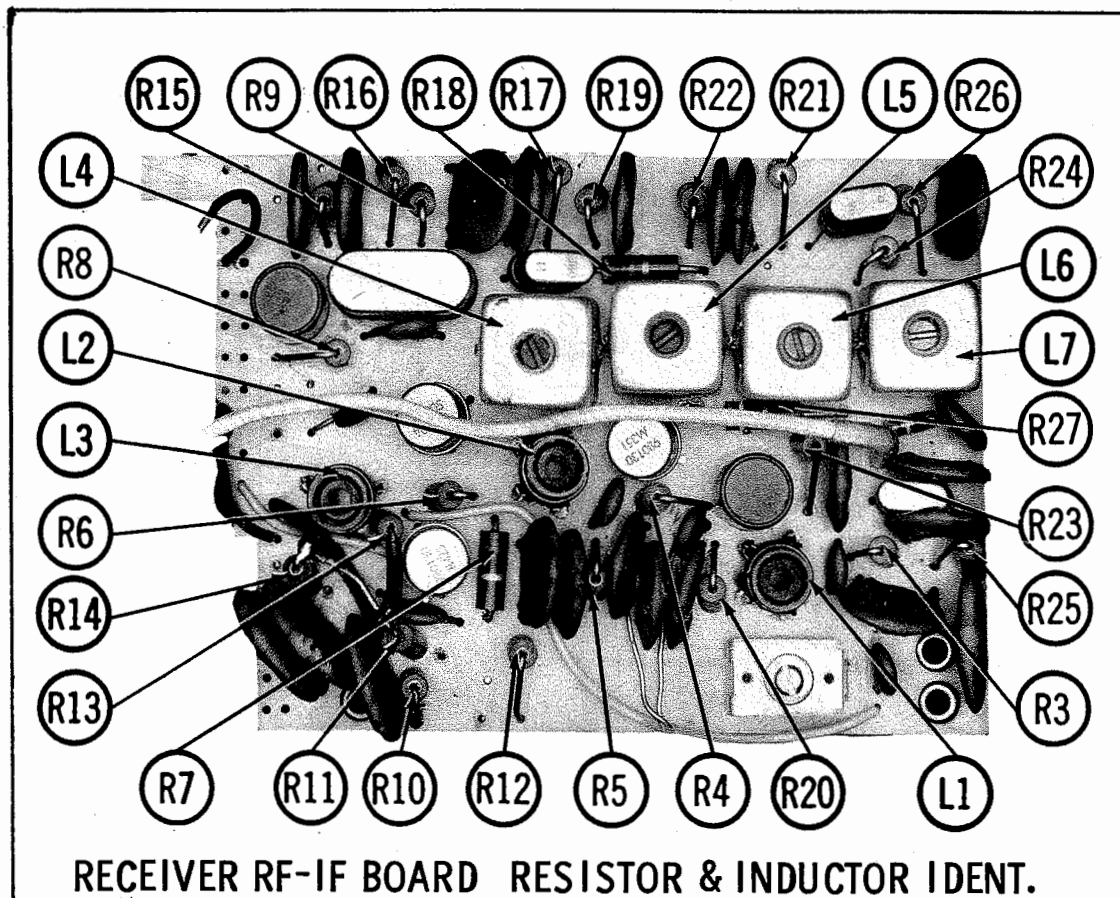
SEE PARTS LIST FOR ALTERNATE
 VALUE OR APPLICATION

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE
 WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
 with CIRCUITTRACE

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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Suggested Alignment Tools:

A1, A2, A3, A4.....	GENERAL CEMENT #5009, 8195, 8274, 8275, 8278, 8279, 8987, 8988, 8989
A5, A7, A8, A10, A11, A14.....	WALSCO #2515, 2531, 2532
A6, A9, A12, A13.....	GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
	WALSCO #2526, 2543, 2544, 2545
	GENERAL CEMENT #5000, 5003, 5066, 8271, 8272, 8276, 8277, 8290, 8609, 8722, 9150, 9298
	WALSCO #2515, 2516, 2518, 2519, 2525, 2541

RECEIVER ALIGNMENT

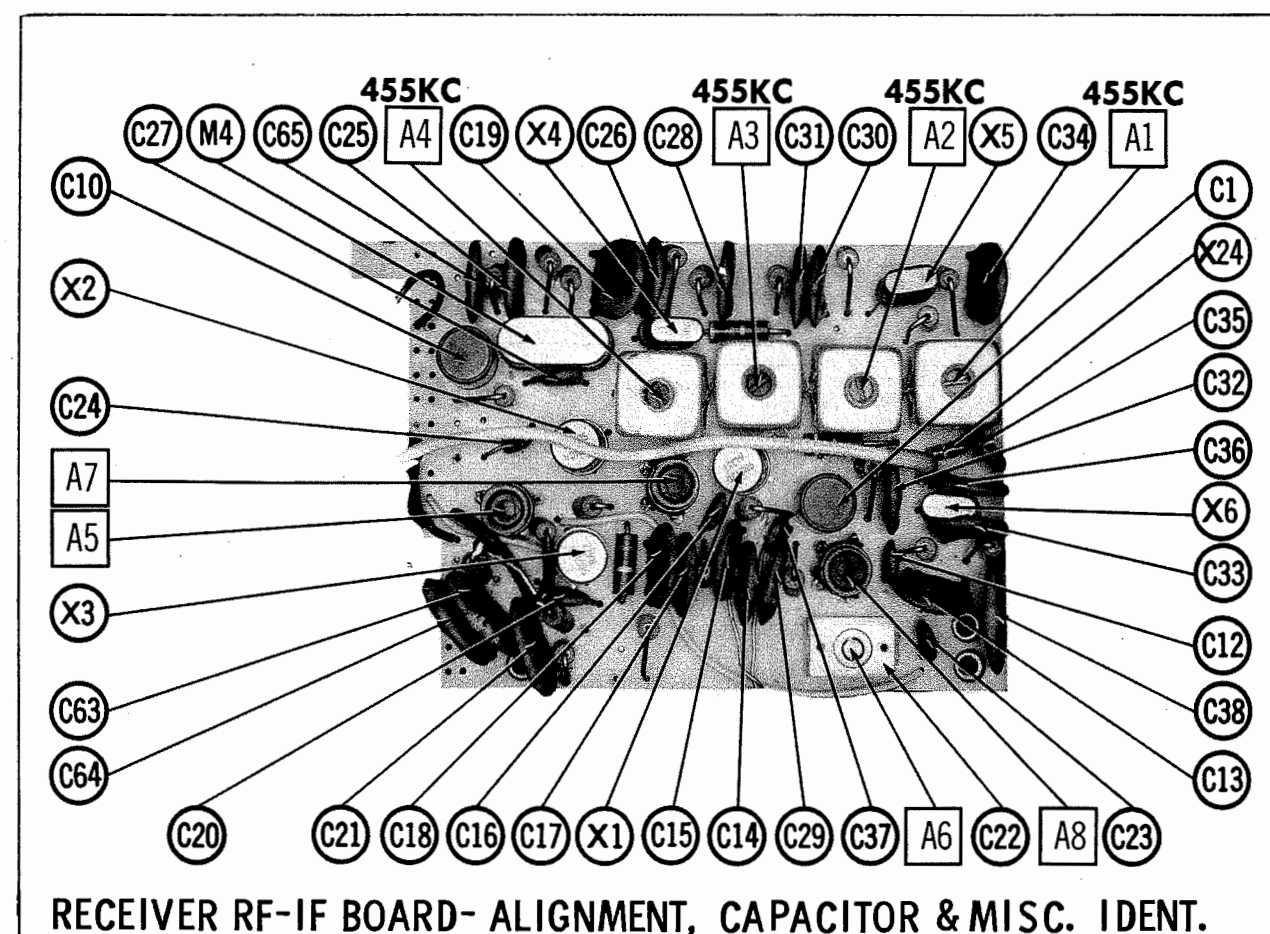
Connect output meter across voice coil.

	SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
1.	High side thru .05mfd to base of X2, low side to ground. (455KC, 400% Mod.)	Any	A1, A2, A3	Adjust for maximum deflection.
2.	Tune generator to 1.68MC (400% Mod.)	Any	A4	Adjust for maximum deflection.
3.	Not Used	Highest Used	A5, A6	Connect DC VTVM to X2 emitter, low side to ground. Adjust for maximum deflection.
4.	High side to antenna terminal, low side to ground. Tune generator to channel frequency.	Center Channel	A7, A8	Adjust for maximum deflection.

TRANSMITTER ALIGNMENT

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 19, SUBPART D, SECTION 19.71)

	SPECIAL INSTRUCTIONS	INDICATOR	ADJUST	REMARKS
1.	Place channel selector switch near center channel. Connect antenna or dummy load.	RF Wattmeter or Field Strength Meter. Remove shorting wire between pins 3 and 4 of power socket. Connect an 0-500 DC Milliammeter between these two pins.	A9, A10, A11, A12	Key transmitter. Adjust for maximum output. Milliammeter must not exceed 380MA. Reconnect shorting wire.
2.	Connect antenna.	RF Wattmeter or Field Strength Meter.	A13, A14	Adjust for maximum output.



MODEL 320
ITT

FOLDER 10

