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PHOTOFACT® Folder



OSBORNE  
MODEL 300



TRADE NAME	Osborne Model 300		
MANUFACTURER	Osborne Electronics Corp., 13105 S. Crenshaw Blvd., Hawthorne, California		
TYPE SET	AC Operated 9 Transistor, 4 Channel Citizens Band Transmitter-Receiver (Converters Available for 6-12-24-32 Volt DC Operation)		
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles	RATING	4 Watts, .05 Amp. @117 Volts AC
TUNING RANGE	Any 4 of Citizens Band Channels 1 thru 23		

**ALIGNMENT INSTRUCTIONS**

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
Best results will be obtained when A5 and A7 are adjusted with unit connected to the antenna normally used and as nearly in the cabinet as possible.	
Suggested Alignment Tools:	
A1 thru A6.....	GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440 WALSCO #2526, 2543, 2544, 2545
A7.....	GENERAL CEMENT #5004, 5008, 5009 WALSCO #2520

RECEIVER ALIGNMENT

Connect DC VTVM between Point A and ground.

	SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
1.	Tune to 455KC (Unmod.) . Connect high side to antenna input, common to ground.	Not Used	A1, A2, A3	Remove Receive Crystal. Adjust A1, A2, and A3 for maximum deflection. Reinsert Crystal.
2.	Tune to channel frequency. Connect high side to antenna input, common to ground.	Highest Channel Used	A4	Adjust for maximum deflection while rocking A4. Note rate of drop-off on each side of peak and set to point just below peak on side of gradual drop-off.
3.	"	Center Channel Used	A5	Adjust for maximum deflection.

TRANSMITTER ALIGNMENT

Output frequency should be checked by an accurately calibrated secondary frequency standard to be sure frequency is within .005%.

**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
4.	Connect dummy load, RF watt meter or antenna to antenna input.	DC probe of VTVM to Point B .	A6	Adjust for maximum deflection while rocking. Note rate of drop-off on each side of peak and set to Point just below peak on side of gradual drop-off.
5.	"	Not Used.	A7	Adjust for maximum output.

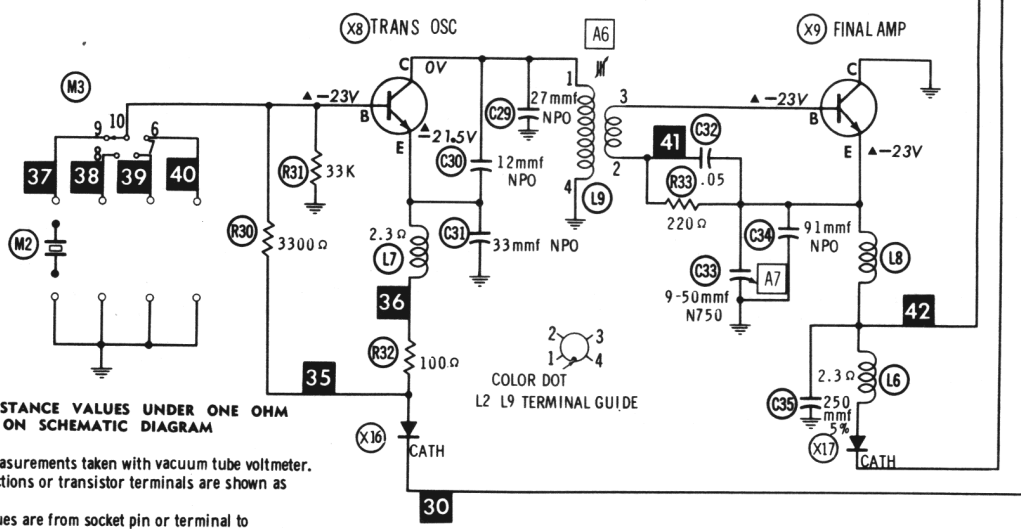
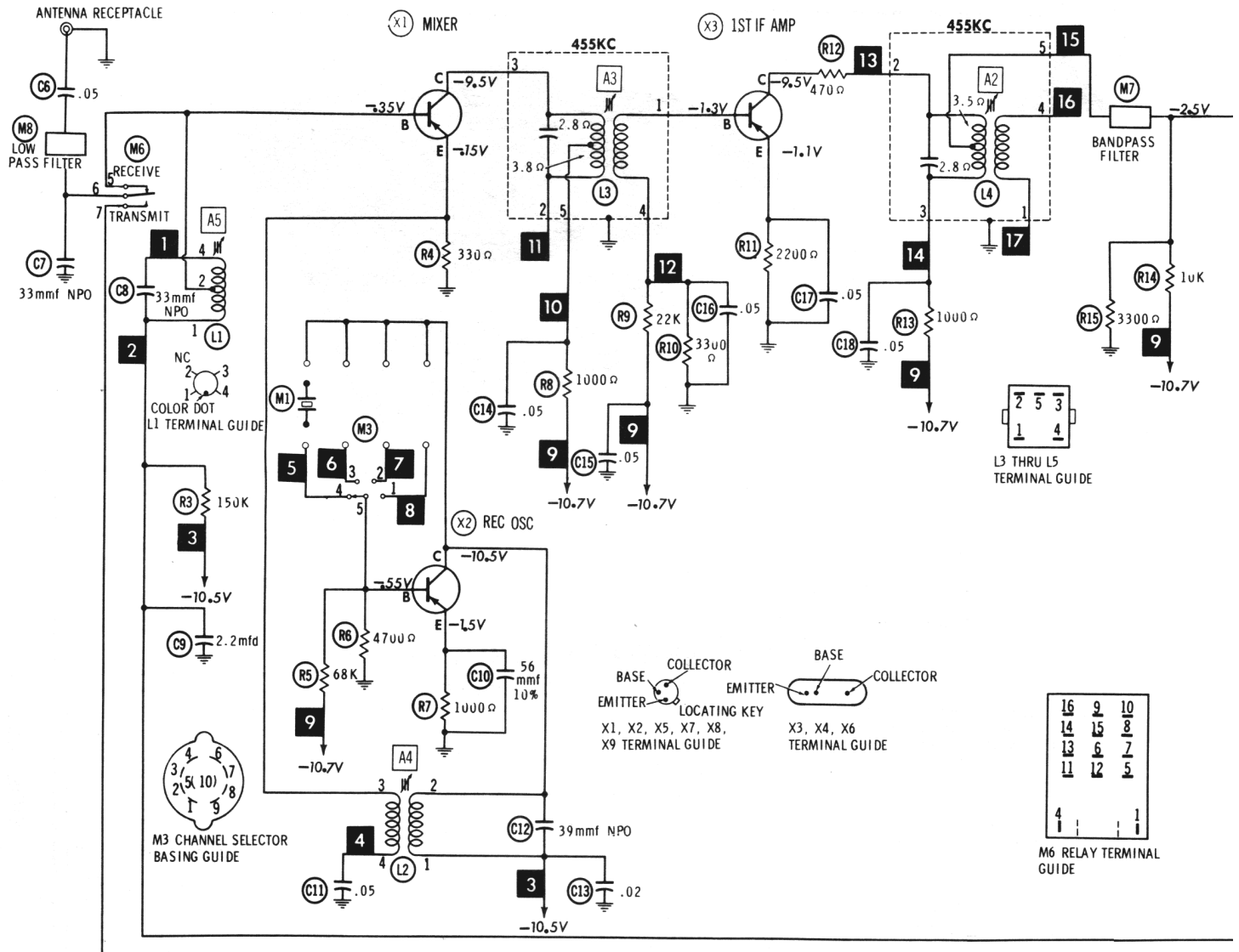
**HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana**



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

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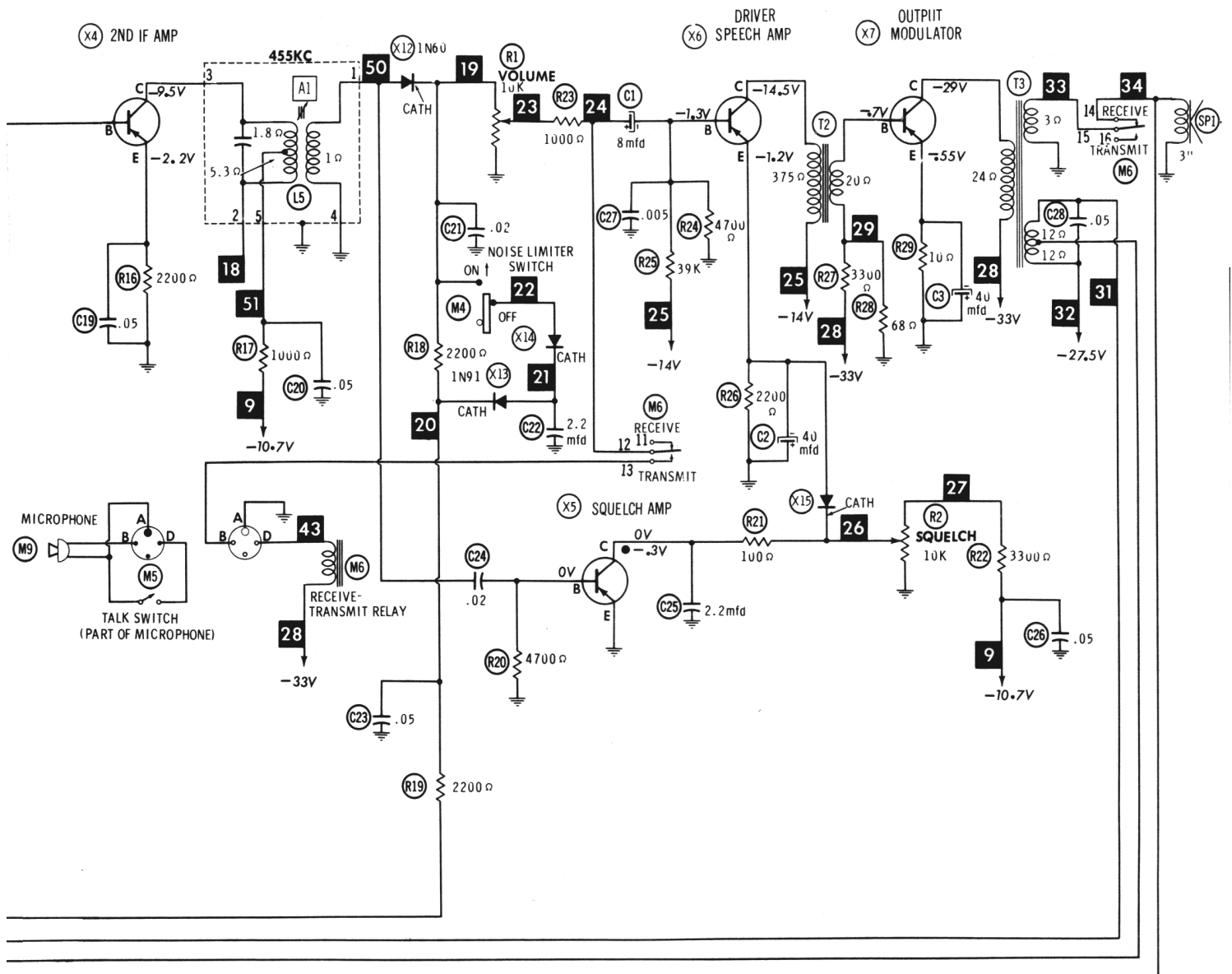
OSBORNE  
MODEL 300



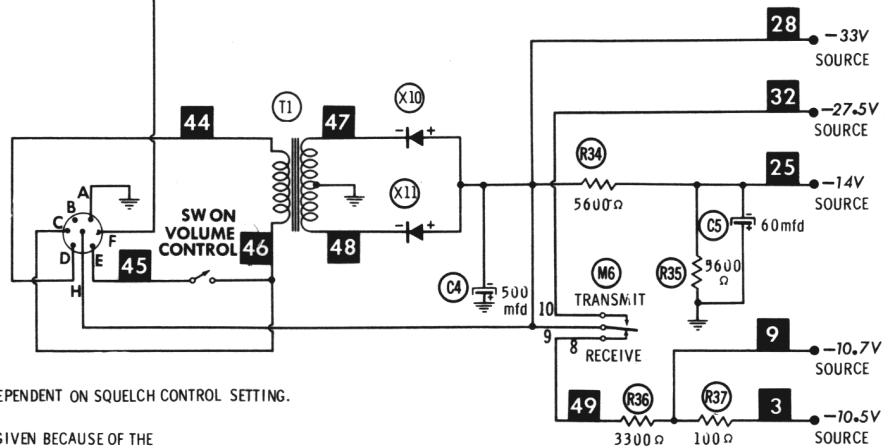
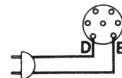
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

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 PHOTOFAC STANDARD NOTATION SCHEMATIC with **CIRCUITRACE**



117VAC 4 WATTS

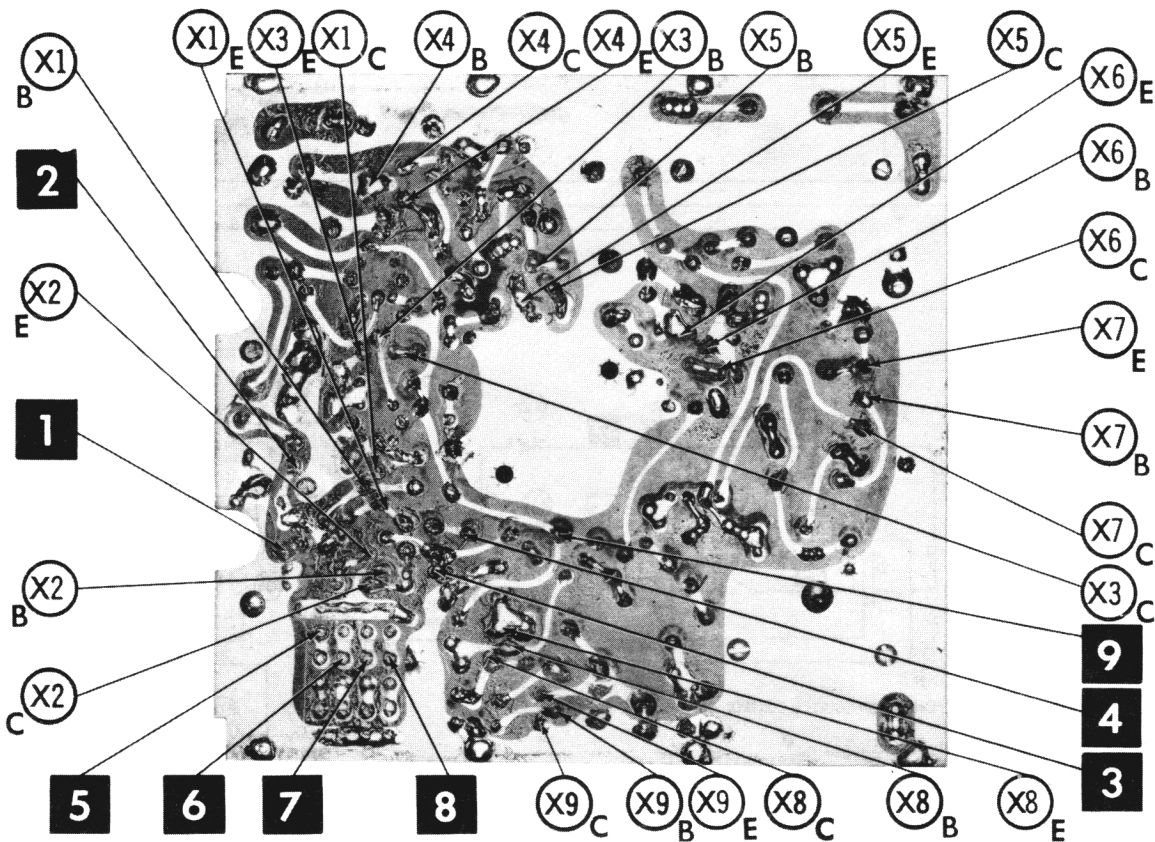
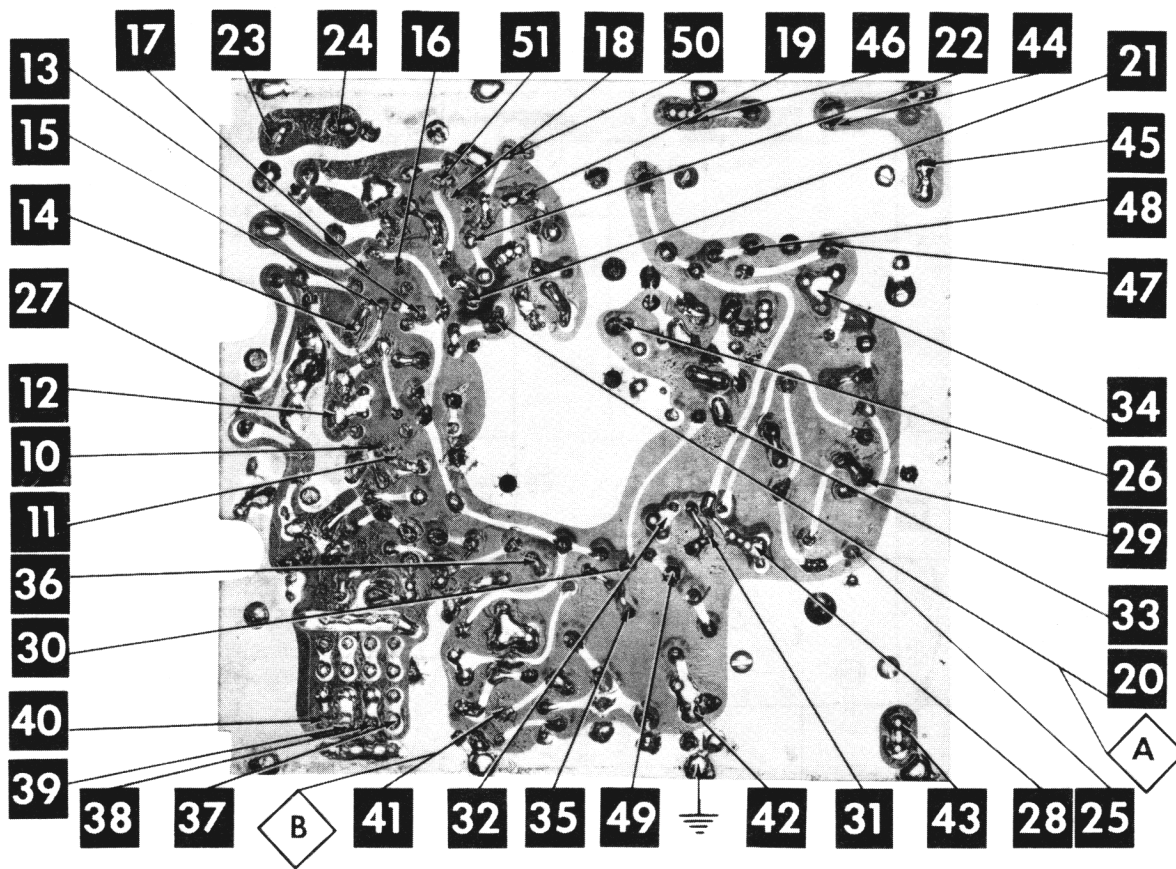


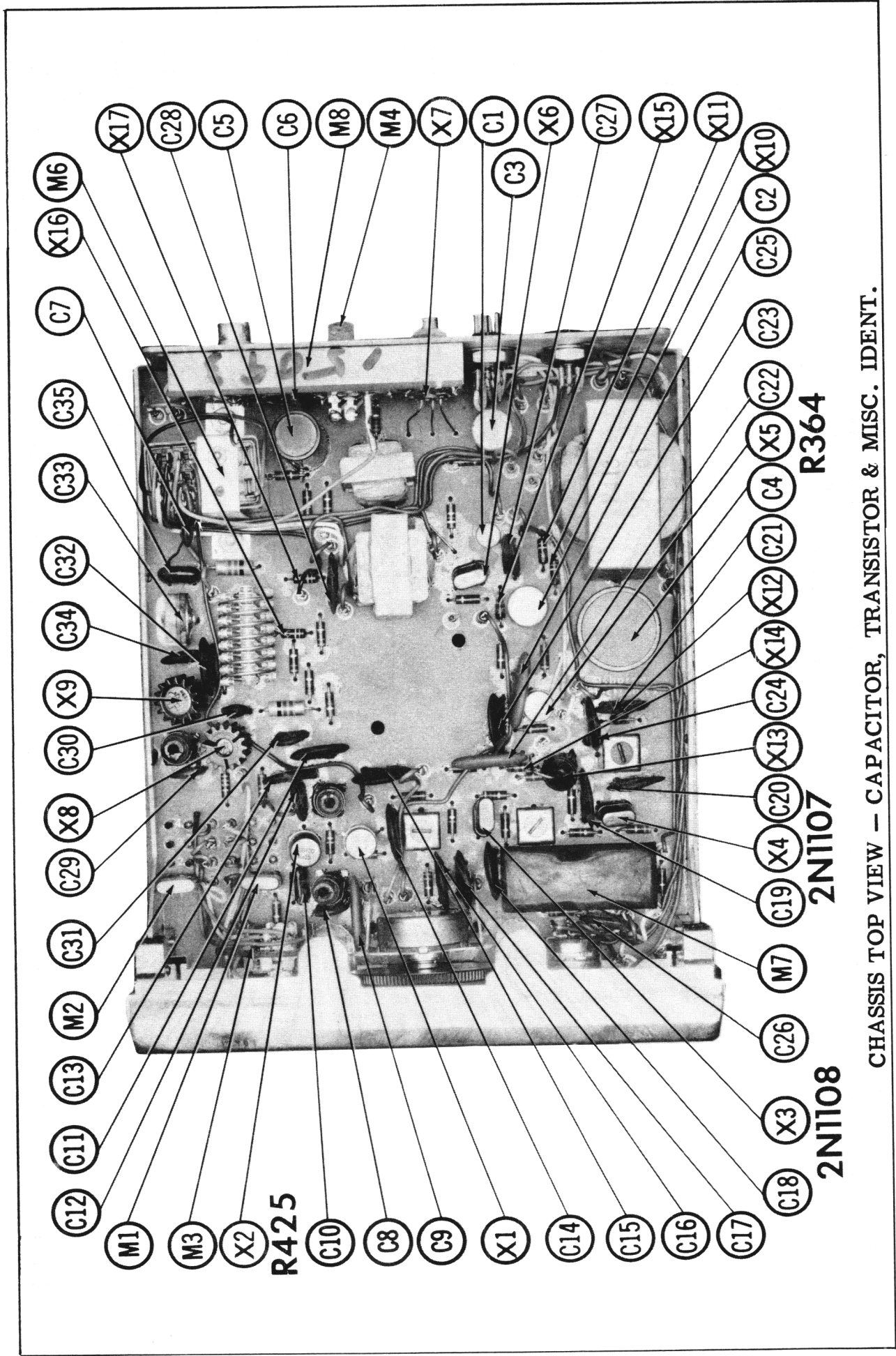
● TAKEN IN "TRANSMIT" POSITION DEPENDENT ON SQUELCH CONTROL SETTING.

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

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

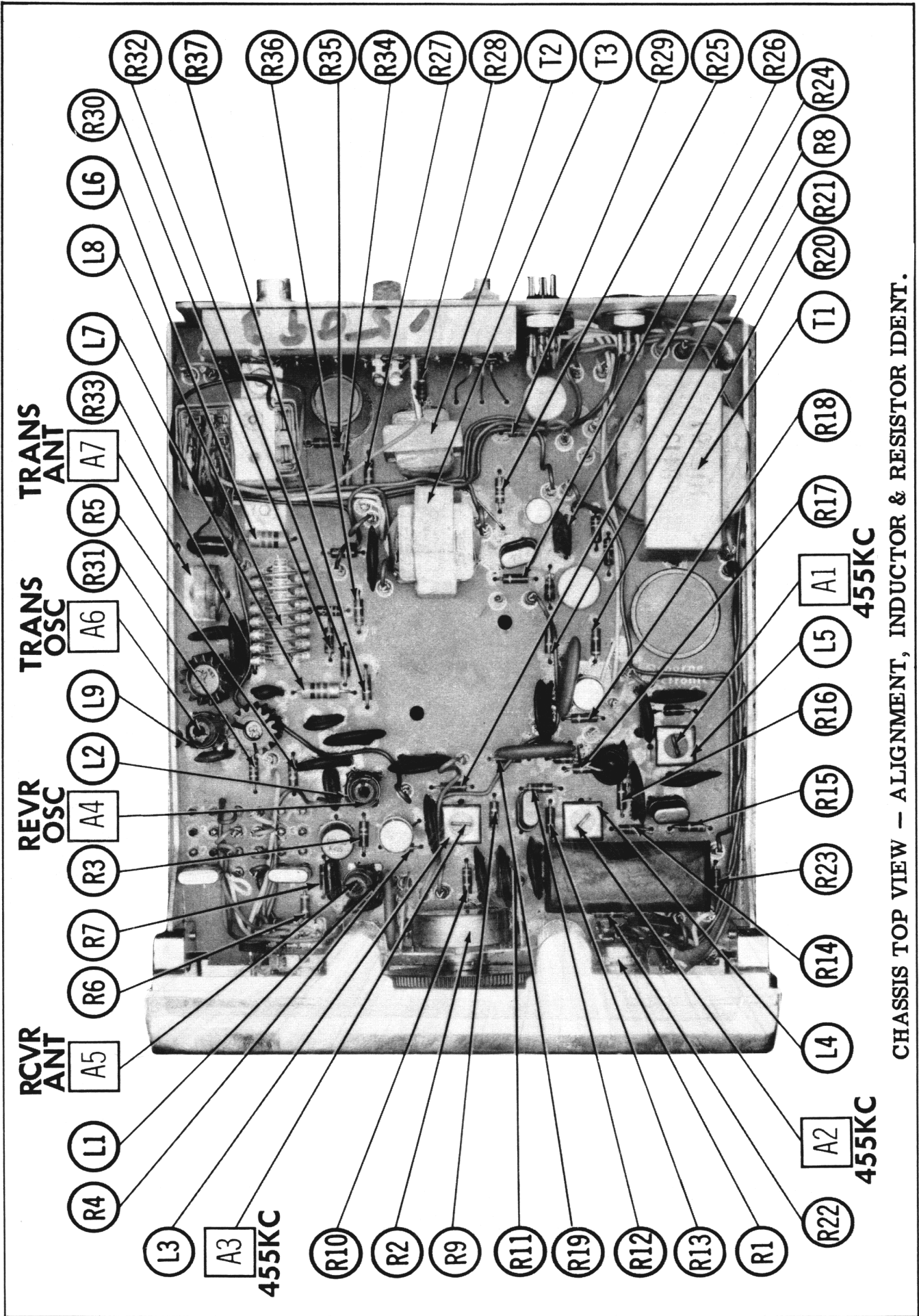
**OSBORNE  
MODEL 300**





- C12 C11 C13 M2 C31 X8 C29 X8 C30 X9 C34 C32 C33 C35 C7 X16 M6 X17 C28 C5 C6 M8 M4 X7 C1 X6 C27 X15 X11
- M1 M3 X2 R425 C10 C8 C9 X1 C14 C15 C16 C17 C18 X3 C26 M7 C19 X4 C20 X13 C24 X14 X12 C21 C4 X5 C22 C23 C25 C2 X10
- 2N1108 2N1107 R364

CHASSIS TOP VIEW - CAPACITOR, TRANSISTOR & MISC. IDENT.



CHASSIS TOP VIEW - ALIGNMENT, INDUCTOR & RESISTOR IDENT.

# PARTS LIST AND DESCRIPTIONS

## WIRING DATA

General-use Hook-up Wire . . . . .	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Shielded Antenna Lead . . . . .	Use BELDEN No. 8214 Lowest Loss (RG-8/U Type) 8237 Low Loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable . . . . .	Use BELDEN No. 8497 3 Conductor- 1 Shielded for Press-to-Talk (Neoprene) 8496 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. 8661 (3/8 in.)

### TRANSISTORS

ITEM No.	MFR. PART NO.	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	8314	Mixer	2N1179		PNP
X2	8308	Rec. Osc. (R425)	2N1178		PNP
X3	8301	1st IF Amp. (2N1108)	2N1180		PNP
X4	8300	2nd IF Amp. (2N1107)	2N1180		PNP
X5	8309	Squelch Amp. (R364)	2N406	2N465	PNP
X6	8312	Driver-Speech Amp.	2N406	2N465	PNP
X7	8310	Output-Modulator (S-499)	2N406		PNP
X8	8313	Trans. Osc.			NPN
X9	8316	Final Amp.			NPN

### POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	ORIGINAL Part or Type No.	RECTIFIERS		DIODES	NOTES
			RCA PART No.	SARKES TARZIAN PART No.	RAYTHEON PART No.	
X10	.015A	8306	1N1763	F2		Power Rectifier
X11	.015A	8308	1N1763	F2		Power Rectifier
X12		8305			1N60	Detector
X13		8318				Noise Limiter (1N91)
X14		8305			1N60	Noise Limiter
X15		8305			1N60	Squelch Diode
X16		8306	1N1763			Transmit Limiter
X17		8306	1N1763			Transmit Limiter

### ELECTROLYTIC CAPACITORS

ITEM No.	RATING		OSBORNE PART No.	REPLACEMENT DATA					SPRAGUE PART No.
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	
C1	8	10	8220	BCD12008	ECPB407	MT1-5	PET1340	MLV10-10	VL-1126
C2	40	6	8223	BCD6050	ECPB115	MT1-15	TT6X40	MLV40-6	VL-1094
C3	40	6	8223	BCD6050	ECPB115	MT1-15	TT6X40	MLV40-6	VL-1094
C4	500	30	8224						
C5	60	40	8222	PTT98	ECPB816	MT1-17	PET1980	MLV50-50	TE-1307

### FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C7	33 NPO		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C8	33 NPO		NPO-DI 33	DTZ-33	C10Q33C	CCTO-330	CNO-433	10TCC-Q33
C9	2.2mfd 3V	#8216		UK-225				HY-150
C10	56 10%		1469-000056	TCZ-56	22R5Q56	CM-19B-560	CNO-456	MS-456
C11	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C12	39 NPO		NPO-DI 39	DTZ-39	C10Q39C	CCTO-390	CNO-439	10TCC-Q39
C13	.02		BPD-02	DD-203	H-0582	CCD-203	TA-120	TG-820
C14	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C15	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C16	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C17	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C18	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C19	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C20	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C21	.02		BPD-02	DD-203	H-0582	CCD-203	TA-120	TG-820
C22	2.2mfd 3V	#8216		UK-225				HY-150
C23	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C24	.02		BPD-02	DD-203	H-0582	CCD-203	TA-120	TG-820
C25	2.2mfd 3V	#8216		UK-225				HY-150
C26	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C27	.005		BPD-005	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C28	.05		BPD-05	DDA-503	H-0585		TA-150	TG-850
C29	27 NPO		NPO-DI 25	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C30	12 NPO			TCZ-12	C10Q12C	CCTO-120	CNO-412	10TCC-Q12
C31	33 NPO		NPO-DI 33	DTZ-33	C10Q33C	CCTO-33	CNO-433	10TCC-Q33
C32	.05		BPD-05	DDM-503	H-0585		TA-150	TG-850
C33	9-50 N750	#8250		822-AN		404		
C34	91 NPO		NPO-DI 100	TCZ-91	C10Q91C	CCTO-101	CNO-310	10TCC-Q91
C35	250 5%		1469-00025	TCZ-240	22R5T25	CM-19B-251J	MCE240	MS-325

# Osborne Part Number.

### CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			OSBORNE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	10K	8424	JP2-103	44-10K-W		
R2	Squelch	10K	8425				



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R3	150K				R21	100Ω			
R4	330Ω				R22	3300Ω			
R5	68K				R23	1000Ω			
R6	4700Ω				R24	4700Ω			
R7	1000Ω				R25	39K			
R8	1000Ω				R26	2200Ω			
R9	22K				R27	3300Ω			
R10	3300Ω				R28	68Ω			
R11	2200Ω				R29	10Ω			
R12	470Ω				R30	3300Ω			
R13	1000Ω				R31	33K			
R14	10K				R32	100Ω			
R15	3300Ω				R33	220Ω			
R16	2200Ω				R34	5600Ω			
R17	1000Ω				R35	5600Ω			
R18	2200Ω				R36	3300Ω			
R19	2200Ω				R37	100Ω			
R20	4700Ω								

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		OSBORNE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Receiver Ant. Coil	8416					
L2	Receiver Osc.	8415					
L3	1st IF	8421					
L4	2nd IF	8421					
L5	3rd IF	8422					
L6	RF (22uh)	8420	TV-192	9310-44	RTC-8525	T863	
L7	RF (22uh)	8420	TV-192	9310-44	RTC-8525	T863	
L8	Trans. Output	8418					
L9	Trans. Osc.	8417					

## TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	OSBORNE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117VAC @ .05A	47VAC @ .070A	8413					

## TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	OSBORNE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6	1	8427					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	OSBORNE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	300Ω	3-4Ω	8426					

## SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	OSBORNE PART No.	QUAM PART No.	
SP1	3"	PM	3-4Ω	8429		

## MISCELLANEOUS

ITEM No.	PART NAME	OSBORNE PART No.	NOTES
M1	Crystal	8453	Receive (When Ordering, Mention Model, Part Number and Channel or Freq.)
M2	Crystal	8451	Transmit (When Ordering, Mention Model, Part Number and Channel or Freq.)
M3	Switch	8523	Channel Selector
M4	Switch	8529	Noise Limiter SPST
M5	Switch	8530	Talk (Mounted on Mic) Spring Loaded SPST Normally Open
M6	Relay	8419	Receive - Transmit
M7	Filter	8423	Band Pass
M8	Filter	8918	Low Pass
M9	Microphone	8428	