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PHOTOFACT® Folder



SONAR
MODEL E



SONAR
MODEL E

TRADE NAME	Sonar Model E
MANUFACTURER	Sonar Radio Corp., 3050 W. 21st Street, Brooklyn 24, N. Y.
TYPE SET	AC-Battery Operated 9 Tube Citizens' Band Transmitter-Receiver
POWER SUPPLY	110-120 Volts AC (or) 6 Volt Storage Battery (or) 12 Volt Storage Battery
RATING	50 Watts, .48 Amp. @117 Volts AC (or) 4 Amp. @12.6 Volts DC (or) 8 Amp. @6.3 Volts DC
TUNING RANGE	Any 8 of Citizens' Band Channels 1 Thru 22 (Receiver May be Continuously Tuned Thru Band)

NOTICE

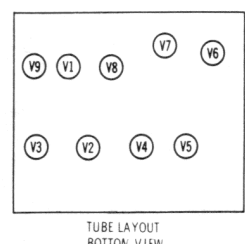
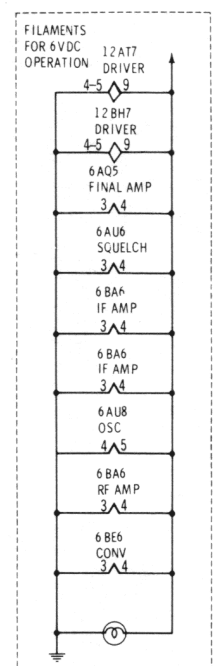
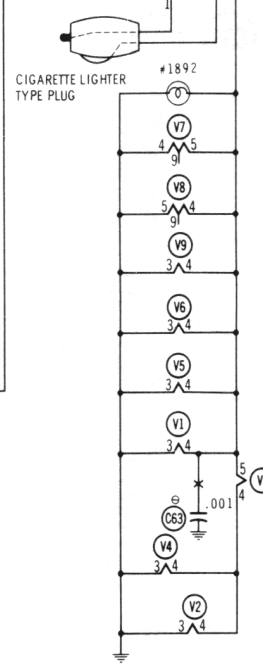
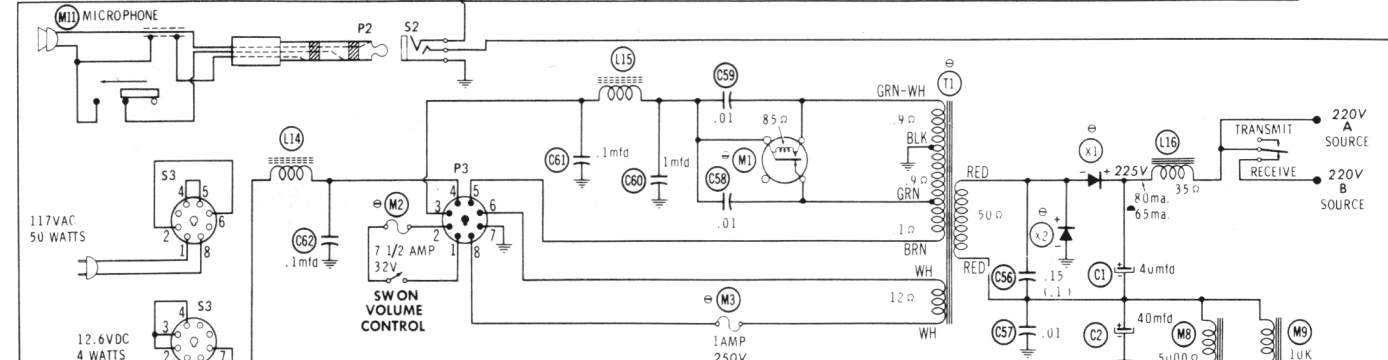
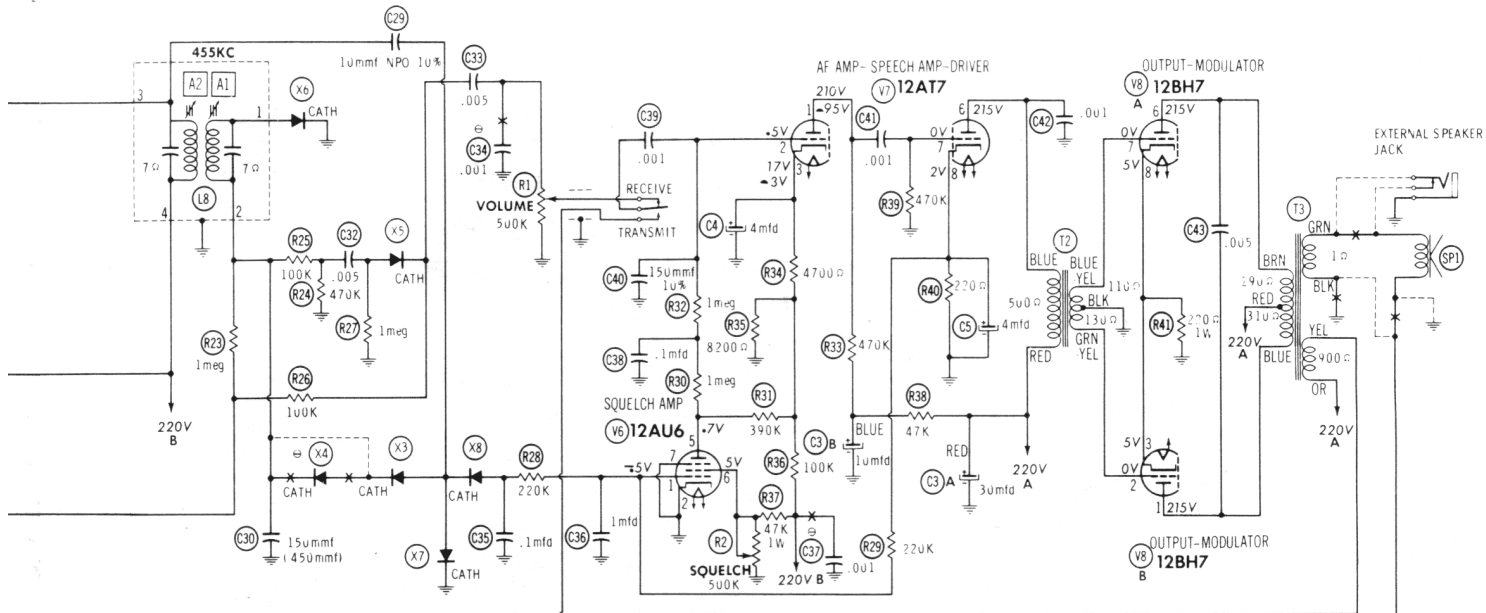
ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES & REGULATIONS PART 19, SUBPART D, SECTION 19.71).

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 LY230

the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1962 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



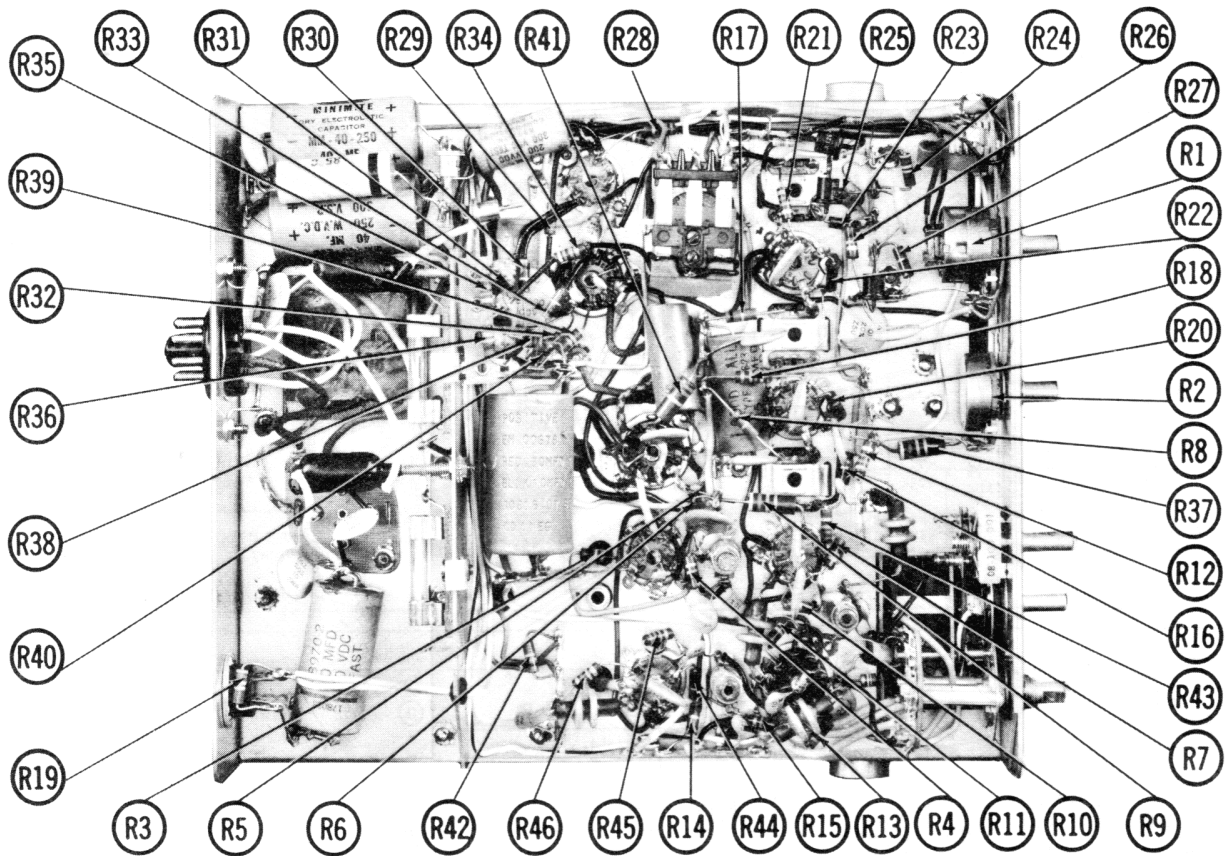
90VAC ACROSS T1 SECONDARY

RESISTANCE READINGS

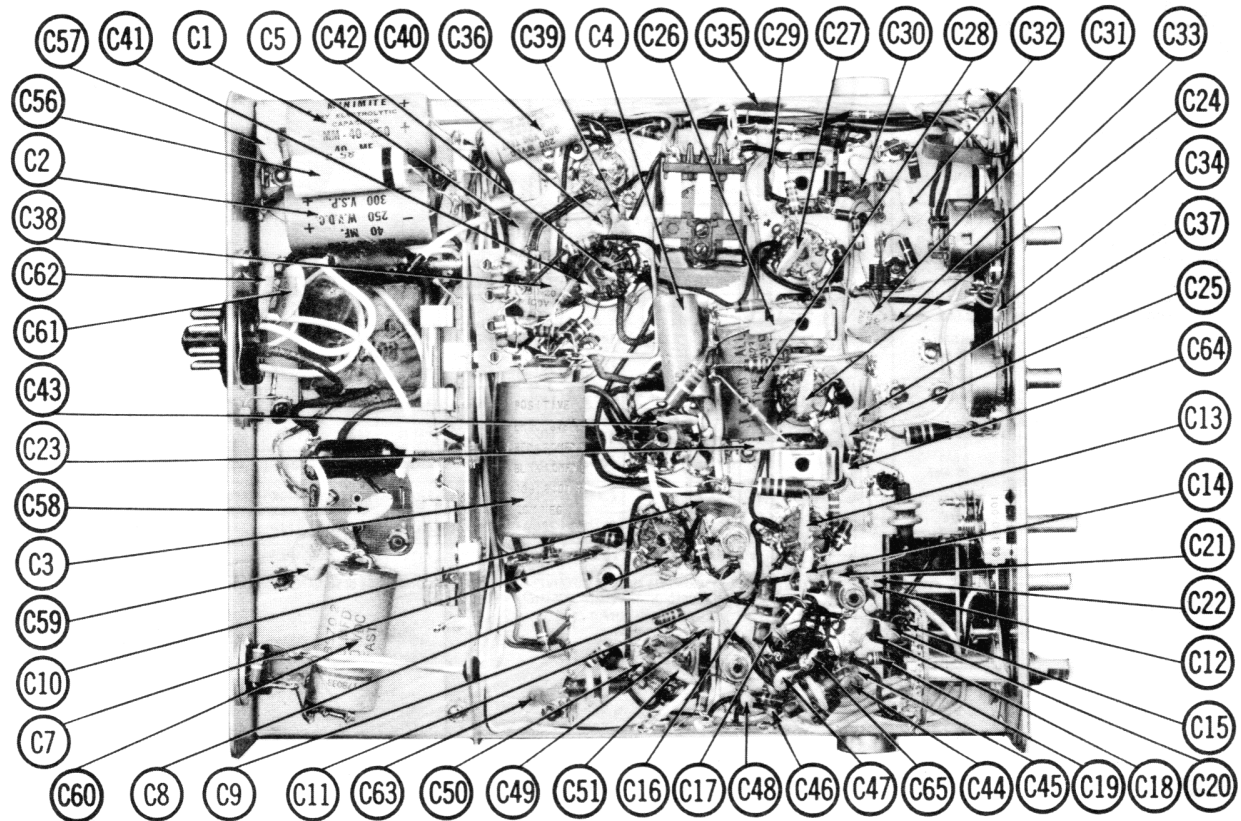
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BA6	80uK	0Ω	FIL	FIL	+2200Ω	+100K	0Ω		
V2	6BE6	27K	1000Ω	FIL	FIL	+1000Ω	+47K	850K		
V3	6AU8A	.1Ω	100K	+4700Ω	FIL	FIL	.1Ω	100K	+56K	+1000Ω
V4	6BA6	800K	0Ω	FIL	FIL	+1000Ω	+47K	100Ω		
V5	12BA6	7Ω	0Ω	FIL	FIL	+40Ω	+47K	62Ω		
V6	12AU6	200K	0Ω	FIL	FIL	400K	1200Ω	0Ω		
V7	12A7	+520K	2.4meg	13K	FIL	FIL	+535Ω	470K	220Ω	FIL
V8	12BH7	+345Ω	130Ω	220Ω	FIL	FIL	+325Ω	110Ω	220Ω	FIL
V9	12AO5	27K	.0Ω	FIL	FIL	+935Ω	+47K	27K		

ALL MEASUREMENTS MADE IN "RECEIVE" POSITION UNLESS OTHERWISE DESIGNATED.
 * MEASURED IN "TRANSMIT" POSITION.
 † MEASURED FROM OUTPUT OF X1.

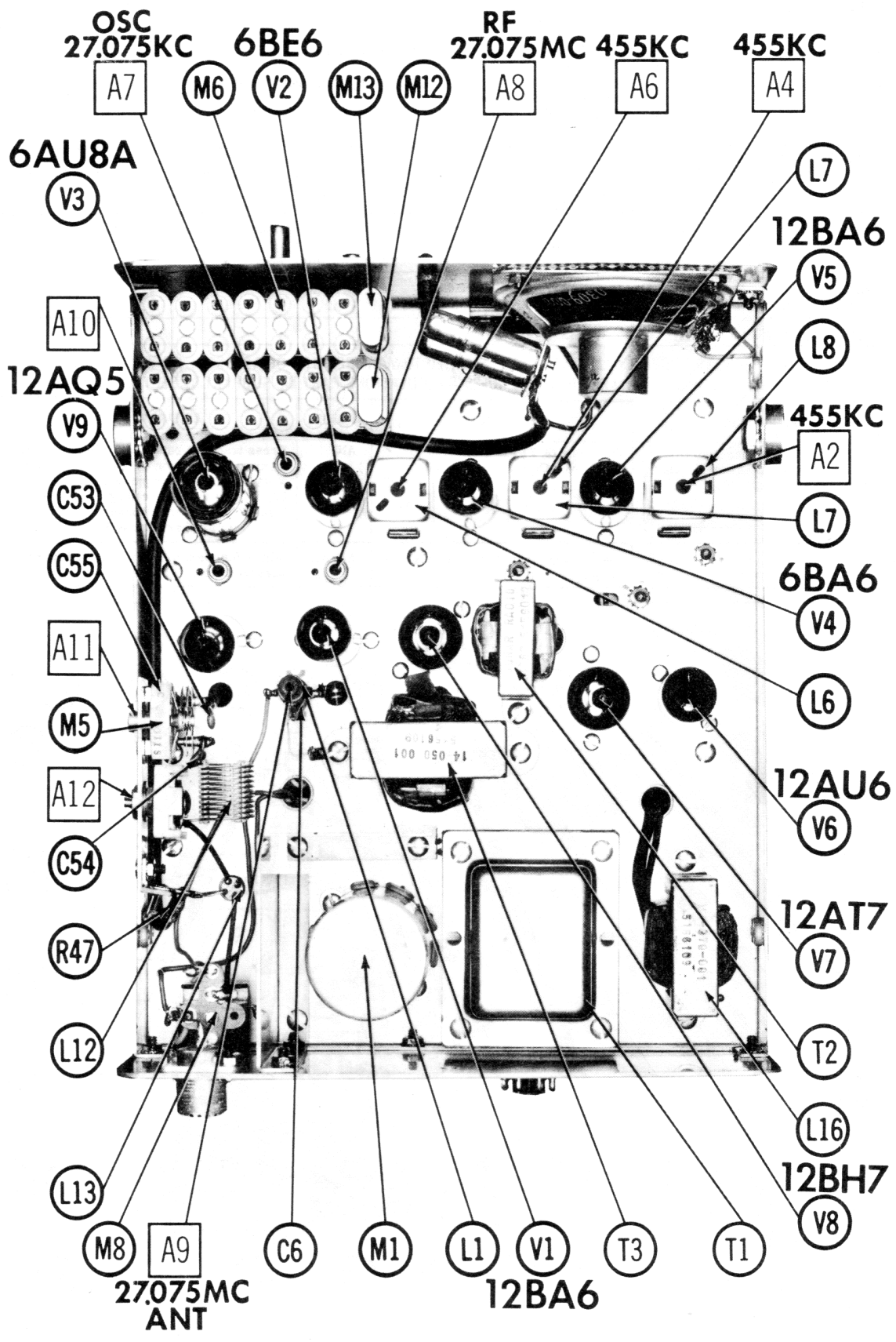
SONAR MODEL E



CHASSIS BOTTOM VIEW - RESISTOR IDENT.



CHASSIS BOTTOM VIEW - CAPACITOR IDENT.



CHASSIS - TOP VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA		REMARKS
	100K	100K	IRC PART No.	WORKMAN PART No.	
R3	100K				
R4	100K				
R5	2200Ω				
R6	100K				
R7	27K				
R8	1000Ω				
R9	47K 1W				
R10	1000Ω				
R11	100K				
R12	4700Ω				
R13	100K				
R14	1000Ω				
R15	56K				
R16	100K				
R17	1000Ω				
R18	47K				
R19	470K				
R20	1000Ω				
R21	47K				
R22	62Ω				
R23	1Meg				
R24	470K				
R25	100K				

Note 1. Not used in some versions.

* Alternate Value

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		SONAR PART No.	Miller PART No.	Stancor PART No.	Workman PART No.	
L1	Ant.	22-030-001	SW-609	RTC-8588	T232A	
L2	RF	22-060-001	617L-A	RTC-8609	T219	
L3	RF Choke (250uh)	22-060-001	TV-185	RTC-8598	T315	① Not used in some versions
L4	Osc. Plate	22-060-001	SW-608	RTC-8609	T216	
L5	RF Choke (250uh)	22-060-001	TV-185	RTC-8598	T315	
L6	1st IF	22-010-002	BC-352	RTC-8632	T807	
L7	2nd IF	22-010-002	BC-353	RTC-8633	T808	
L8	3rd IF	22-010-002	BC-353	RTC-8633	T808	
L9	RF Choke (250uh)	22-060-001	TV-185	RTC-8598	T315	
L10	Osc. Plate	22-060-002	SW-608	RTC-8609	T216	
L11	RF Choke (250uh)	22-060-001	TV-185	RTC-8598	T315	
L12	Final	22-070-001				
L13	Ant. Loading	22-110-001				
L14	FL. Choke (10uh)	22-100-003	BC-537	RTC-9182	T983	
L15	Hash Choke (10uh)	22-100-003	BC-537	RTC-9182	T983	

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA				NOTES
	CURRENT (Measured)	INDUCTANCE DC RES (1000 Ω)	SONAR PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
L16	.080A	35Ω	14-070-001				

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI	SEC. 1	SONAR PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
T1	18VCT @ 2.1A	90V @ .100A	14-010-002				① For 12VDC & 117VAC Part #14-010-001 used for 6VDC & 117VAC

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA				NOTES
	PRI	SEC.	SONAR PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
T2	1	1	14-020-001				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI	SEC. 1	SONAR PART No.	Meritt PART No.	Stancor PART No.	Thordarson PART No.	
T3	16K	CT	14-080-001				

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA				NOTES
	SIZE	FIELD V. C. IMP.	SONAR PART No.	Meritt PART No.	Stancor PART No.	QUAM PART No.	
SPI	3"	PM	14-16Q				

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				NOTES
				CORNELL-DUBILIER PART No.	MALLOY PART No.	RADIART PART No.	SONAR PART No.	
M1	Interrupter	12.6 VDC	115%	6301	G1601	8301	29-030-001	12 Volt Versions
	Interrupter	6.3 VDC	115%	5301	1801	5301	29-030-002	6 Volt Versions

FUSES

ITEM No.	TYPE	RATING	FUSE	REPLACEMENT DATA				BUSS PART No.
				SONAR PART No.	HOLDER	LITTELFUSE PART No.	FUSE	
M2	3AG	7A	32V	3107.5 (3AG 7½A 32V)	357001	357001	AGC 7½	4405
	3AG	10A	32V	31010 (3AG 10A 32V)	357001	357001	AGC 10	4405
	3AG	6A	32V	42-010-009 (12VDC Operation)	311006 (3AG 6A 32V)	357001	AGC 6	4405
M3	3AG	1A	250V	312001 (3AG 1A 250V)	357001	357001	AGC 1	4405
	3AG	2A	250V	312002 (3AG 2A 250V)	357001	357001	AGC 2	4405

MISCELLANEOUS

ITEM No.	PART NAME	SONAR PART No.	NOTES
M4	Variable Cap.	08-100-002	Receiver Oscillator
M5	Variable Cap.	08-150-003	Transmitter Output
M6	Switch	10-030-001	Tune-Crystal (Manual-Crystal Tuning, Rotary Type)
M7	Switch	10-030-002	Channel Selector (Rotary Wafer, 8 Position)
M8	Relay	18-030-001	Antenna (SPDT)
M9	Relay	18-010-001	Change-over (3PDT)
M10	"S" Meter	32-010-002	Includes Plug
M11	Microphone	43-010-001	Receive (Order by Channel & Freq. Desired)
M12	Crystal		Transmit (Order by Channel & Freq. Desired)
M13	Crystal		

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
Shielded Antenna Lead	8524 (Stranded) Available in 12 Colors
	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	8497 (3 Conductor - 1 Shielded for Press-to-Talk (Neoprene)
	8498 (3 Conductor - 1 Shielded for Press-to-Talk (Vinyl))
Ignition Noise Suppression	7300-Series Spark-Plug Sets
Bonding Strap	8661 (3/8 in.)

TUBES

GENERAL ELECTRIC		RAYTHEON		PENNINGTON		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	TYPE
V1	RF Amplifier	12BA6	V6	Squelch Amp.	12AU6		
V2	Mixer	6BE6	V7	AF Amp. -Speech Amp. -	12AT7		
V3	Rec. Osc. -Trans. Osc.	6AU8A	V8	Output-Modulator	12BH7		
V4	1st IF Amplifier	6BA6	V9	Final Amplifier	12AQ5		
V5	2nd IF Amplifier	12BA6					

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	CURRENT RATING (Measured)	RECTIFIERS			DIODES		NOTES
		ORIGINAL Part or Type No.	SARKIS TARZIAN PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.		
X1	.080A	19-040-002	40H	1N1763			* Not used in some versions.
X2	.080A	19-040-002	40H	1N1763			
X3		19-040-001	2F4	1N1763			
X4		19-040-001*	2F4	1N1763			
X5		19-040-001	2F4	1N1763			
X6		19-050-001		1N295			
X7		19-050-001		1N295			
X8		19-050-001		1N295			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP. VOLT.	REPLACEMENT DATA			
		AEROVOX PART No.	SONAR PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C1	40	PR51580	BR4025	QTI-14	TC58
C2	40	PR51580	BR4025	QTI-14	TC58
C3A	30	PR52410	BR4025	QTI-14	TC58
C4	10	PR51580	BR4025	QTI-14	TC58
C5	4	PR51580	BR4025	QTI-14	TC58

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA			
			AEROVOX PART No.	SONAR PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C6	25 NPO 10%		NPO-DI 25	06-130-003	CCTO-270	CNO-425
C7	25 NPO 10%		NPO-DI 25	06-130-003	CCTO-270	CNO-425
C8			BPD-001	06-230-001	CCD-102	B-210
C9	25 NPO 10%		NPO-DI 25	06-130-003	CCTO-270	CNO-425
C10			BPD-01	06-130-003	CCD-103	B-110
C11	10 NPO 10%	(25) †	NPO-DI 10	06-130-002	CCTO-100	CNO-410
C12	10 NPO 10%		NPO-DI 10	06-130-002	CCTO-100	CNO-410
C13			BPD-01	06-130-002	CCD-103	B-110

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C15	50 10%		1469-00005	TCZ-50	22R5Q5	CM-19B-500K	MCR255	MS-450
C16	50 10%		1469-00005	TCZ-50	22R5Q5	CM-19B-500K	MCR255	MS-450
C17	150 10%		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C18	150 10%		DI-150	DD-151	L107T5	CCD-151	GP315	10T5-T15
C19	2.7 10%		NPO-SI 3.0	DTZ-3-10	C10V3C	CCD-3-104	GEM-2015	10TCC-V27
C20	6.8 NPO 10%		NPO-DI 6.8	DTZ-6.8	C10V68C	CCTO-688	CNO-568	10TCC-V68
C21	3.9 NPO 10%		NPO-DI 10	DTZ-10	C10V4C	CCTO-100	CNO-410	10TCC-V39
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	.15 200V		P288N-15	DD-103	C10B2P15	CCD-103	B-110	5HK-S10
C29	10 NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CCD-100	CNO-410	10TCC-Q10
C30	10 NPO 10%	(450) †	DI-150	DD-151	L107T5	CCD-151	GP315	10T5-T15
C31	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C32	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C33	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C34	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C35	.1mfd 100V		P288N-1.0	DD-102	CUB2W1	IDP-2-104	BT-010	TH-P10
C36	.1mfd 200V	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C37	.1mfd 100V		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C38	.1mfd 100V		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C39	.001		DI-150	DD-151	L107T5	CCD-151	GP315	10T5-T15
C40	150 10%		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C41	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C42	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C43	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C44	10 NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CCD-100	CNO-410	10TCC-Q10
C45	150 10%		DI-150	DD-151	L107T5	CCD-151	GP315	10T5-T15
C46	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C47	10 NPO 10%		NPO-DI 10	DTZ-10	C10Q1C	CCD-100	CNO-410	10TCC-Q10
C48	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C49	10 NPO 5%		NPO-DI 10	DTZ-10	C10Q1C	CCD-100	CNO-410	10TCC-Q10
C50	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-S10
C51	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-S10
C52	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-S10
C53	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-S10
C54	6.8 NPO 10%	#09-210-001	NPO-DI 6.8	DTZ-6.8	C10V68C	CCD-688	CNO-568	10TCC-V68
C55	100-600		P488N-15	DD-103	CUB4P15	4DP-4-154	GEM-4015	4TM-P15
C56	.15 400V	(.1) †	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C57	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C58	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C59	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C60	1mfd 50V		P288N-1.0	DD-103	CUB2W1	IDP-5-105	GEM-21	2TM-M1
C61	1mfd 100V		BPD-001	DD-102	DPM52P1	IDP-2-104	BT-010	TH-P10
C62	.1mfd 100V	Note 1	BPD-001	DD-102	DPM52P1	IDP-2-104	BT-010	TH-P10
C63	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C64	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C65	.001	Note 1	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

† Alternate Value.

Sonar Part Number.

Note 1. Not used in some versions.

CONTROLS

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

ITEM No.	USE	RESIST. ANCE	REPLACEMENT DATA			
			SONAR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.
R1	Volume, & Switch	500K	03-504-001	B-60-5, or (AB-60, AK-21, KR-2)	A47-500K-Z/RS-2, SWE-Z/RS-2	Q13-133, 76-2, or (BU, CF25, SSI, WF) * (U48, or U48, or (BU, CF25, SSI, DC1) *
R2	Squelch	500K	03-504-003	B-60, or (AB-60, AK-21)	A47-500K-Z/RS-2	U48, US-27, or (U45A, SF1000, U542)

* "SNAPTROL"