

# PHOTOFACT<sup>®</sup>

**TRADE NAME:** Heath Models GW-22A, GWW-22A(For AC)  
 GW-22D, GWW-22D(For DC)  
**SUPPLIER:** Heath Co., Subsidiary of Daystrom, Inc.  
 Benton Harbor, Michigan  
**TYPE SET:** 8 Tube Transceiver  
**POWER SUPPLY:** 110 - 120 Volts AC, 60 Cycles (or)  
 6 or 12 Volt Storage Battery  
**RATING:** 45 Watts, .46 Amp. @117VAC (Rec.)  
 55 Watts, .56 Amp. @117VAC (Trans.)  
 3.4 Amp. @ 12.6VDC (Rec.)  
 4.0 Amp. @ 12.6VDC (Trans.)  
**TUNING RANGE:** Any 5 CB Channels 1 thru 23



## ALIGNMENT INSTRUCTIONS

**Suggested Alignment Tools:**  
 A1 thru A11.....GENERAL CEMENT #8606, 9295, 8282  
 WALSCO #2526, 2543, 2544, 2545

### RECEIVER ALIGNMENT

Volume Control should be at maximum. Output of generator should be no higher than necessary to obtain an output indication. Connect output meter across voice coil.

SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
High side thru .01mfd to pin 2 (grid) of V2 (Mixer), low side to chassis. Tune to 455KC (400% Mod.)	Any	A1 thru A4	Turn squelch control fully counterclockwise. Adjust for maximum output.
Across antenna jack. Tune to channel frequency.	Center Channel Used.	A5	Adjust clockwise until signal disappears. Adjust counterclockwise one full turn past point where signal reappears.
"	"	A6, A7, A8	Adjust for maximum output.

### TRANSMITTER ALIGNMENT

Only those persons properly licensed are permitted to make repairs or adjustments which may result in illegal operation. (Refer to FCC rules and regulations Part 19, Subpart D, Section 19.71).

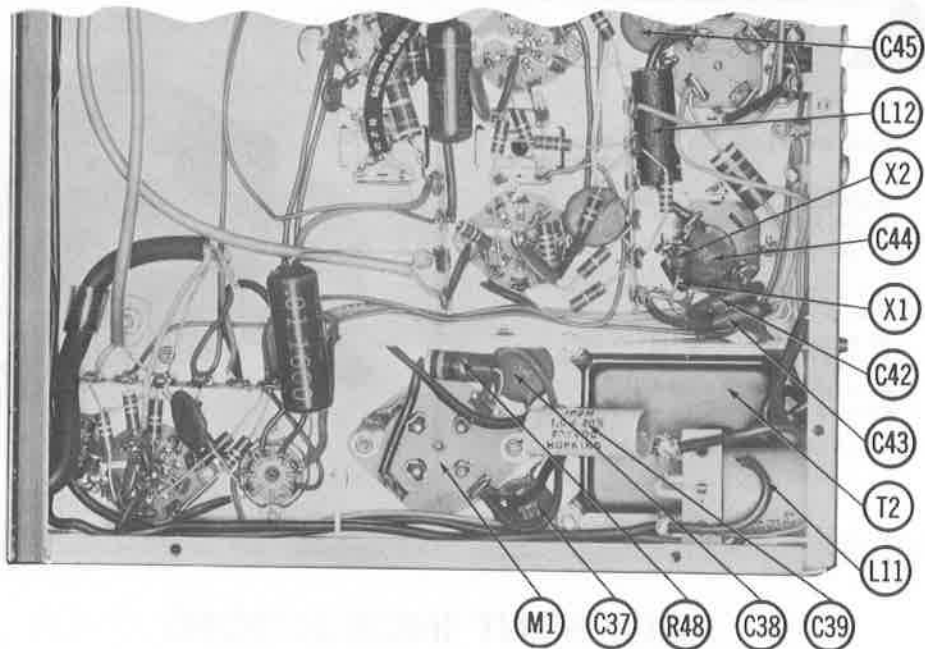
The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

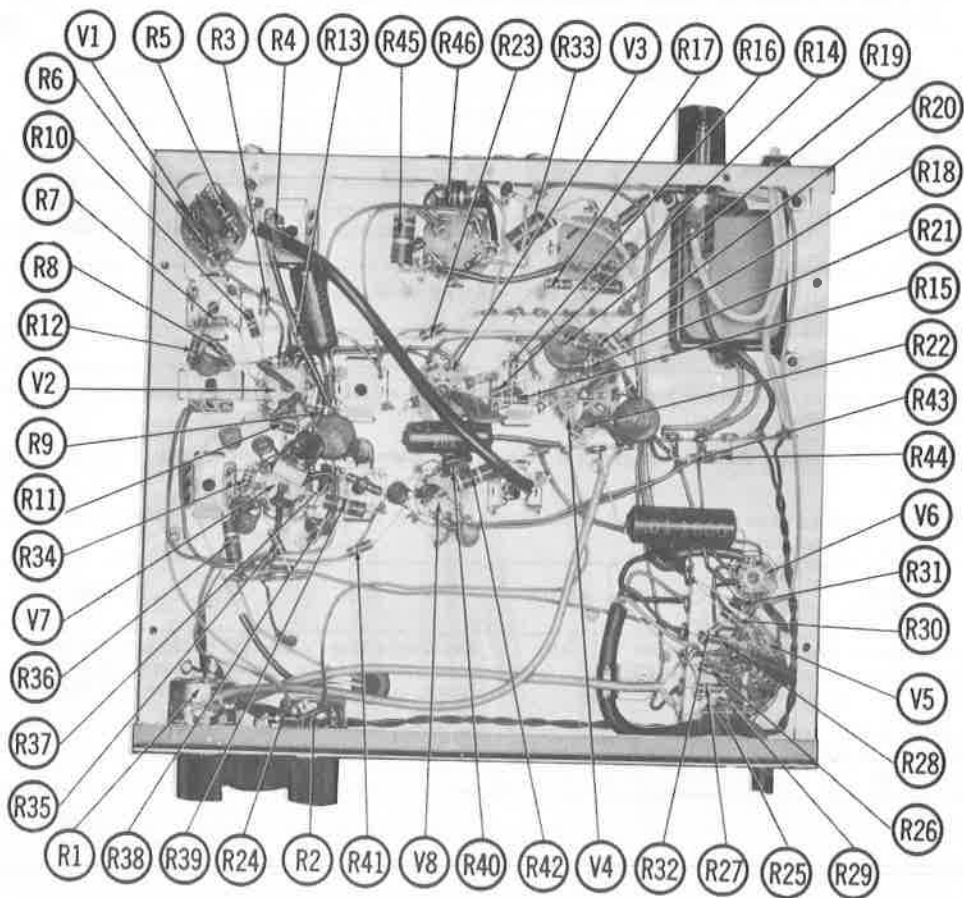
SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
#47 Pilot lamp dummy load.	Center Channel Used.	A9	Key transmitter. Adjust A9 clockwise until lamp goes out. Then turn counterclockwise till lamp just lights, continue for one turn. Check each channel to be sure oscillator starts each time.
Field strength meter, #47 dummy load lamp.	"	A10, A11	Key transmitter. Adjust for maximum.

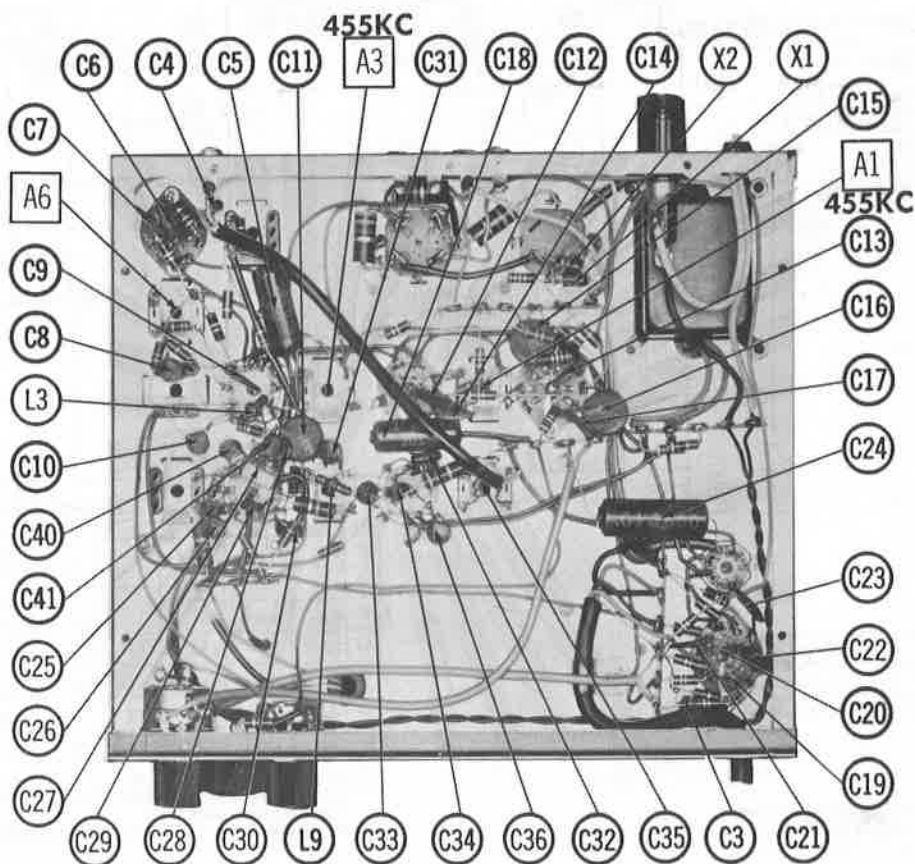
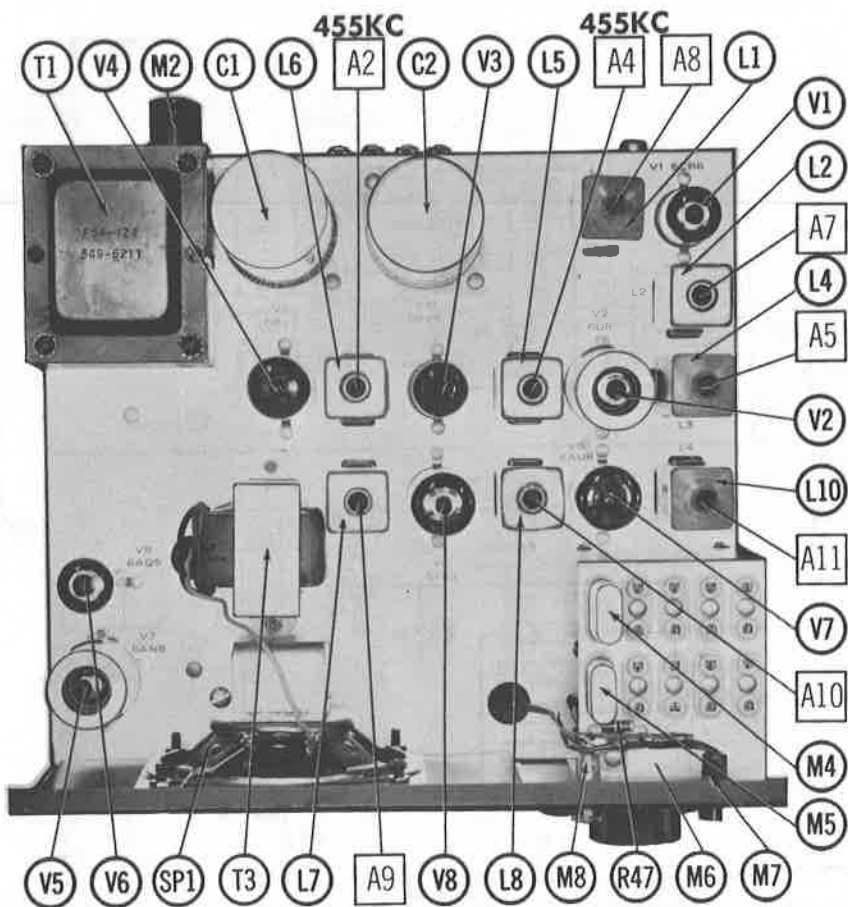
HEATH MODELS GW-22A/D, GWW-22A/D

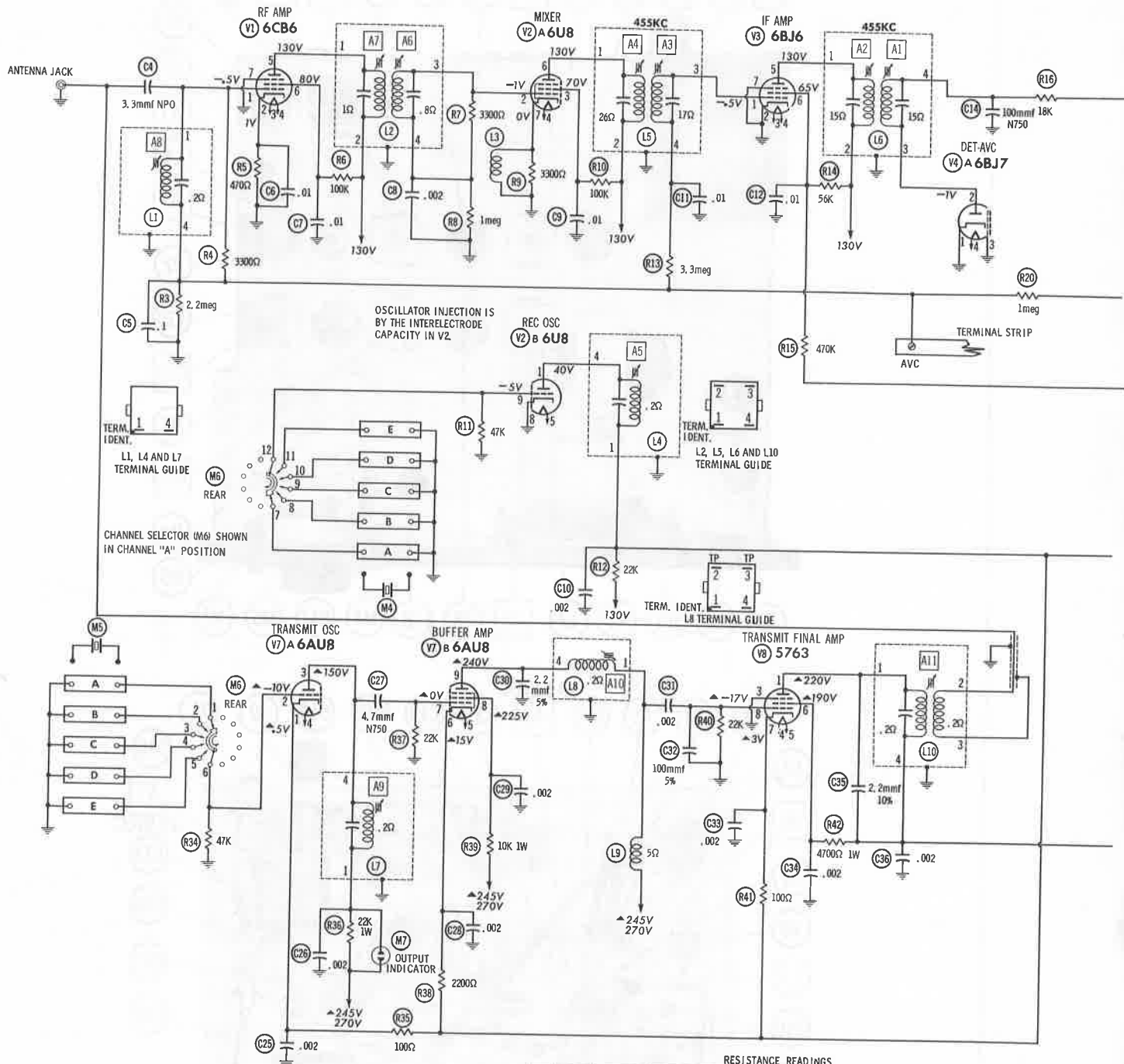
**HOWARD W. SAMS & CO., INC.** Indianapolis 6, Indiana



DC POWER - PARTIAL BOTTOM VIEW







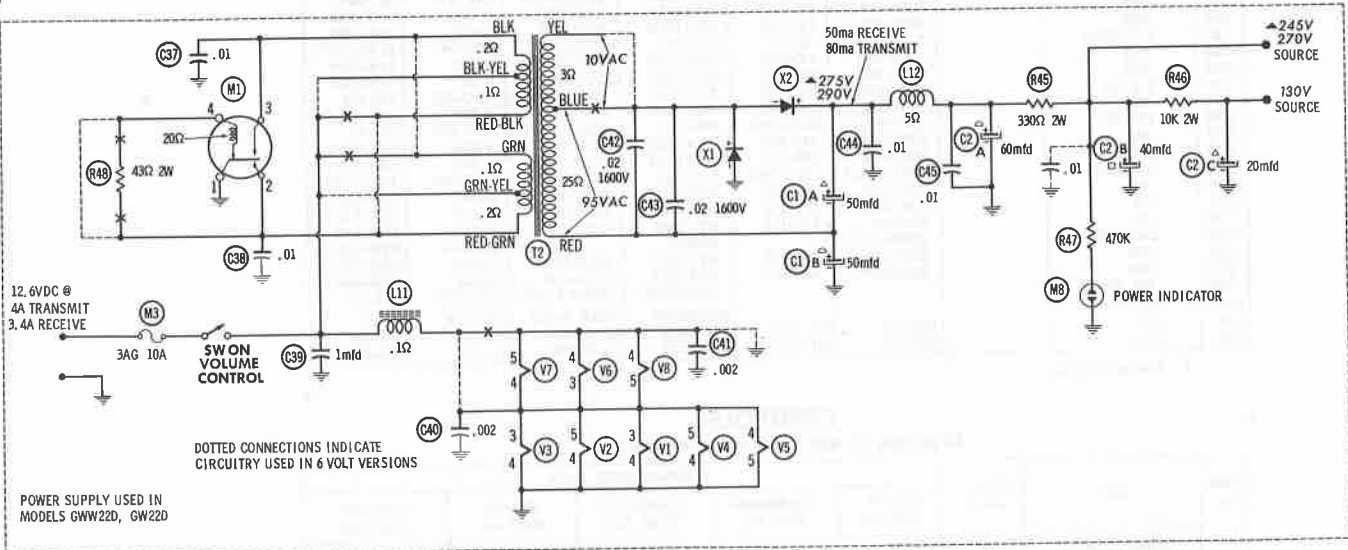
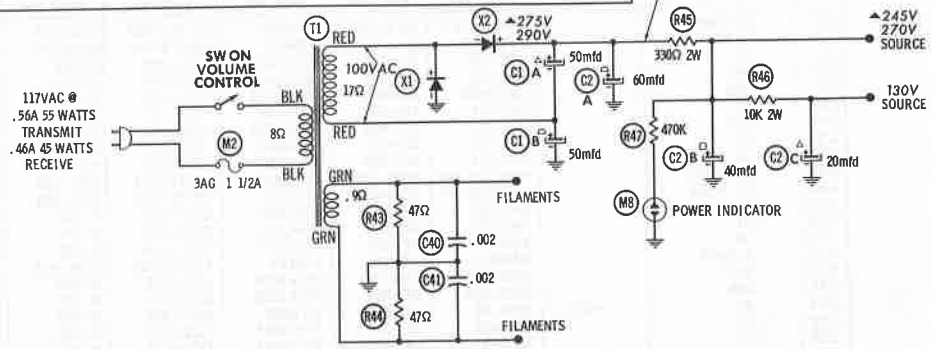
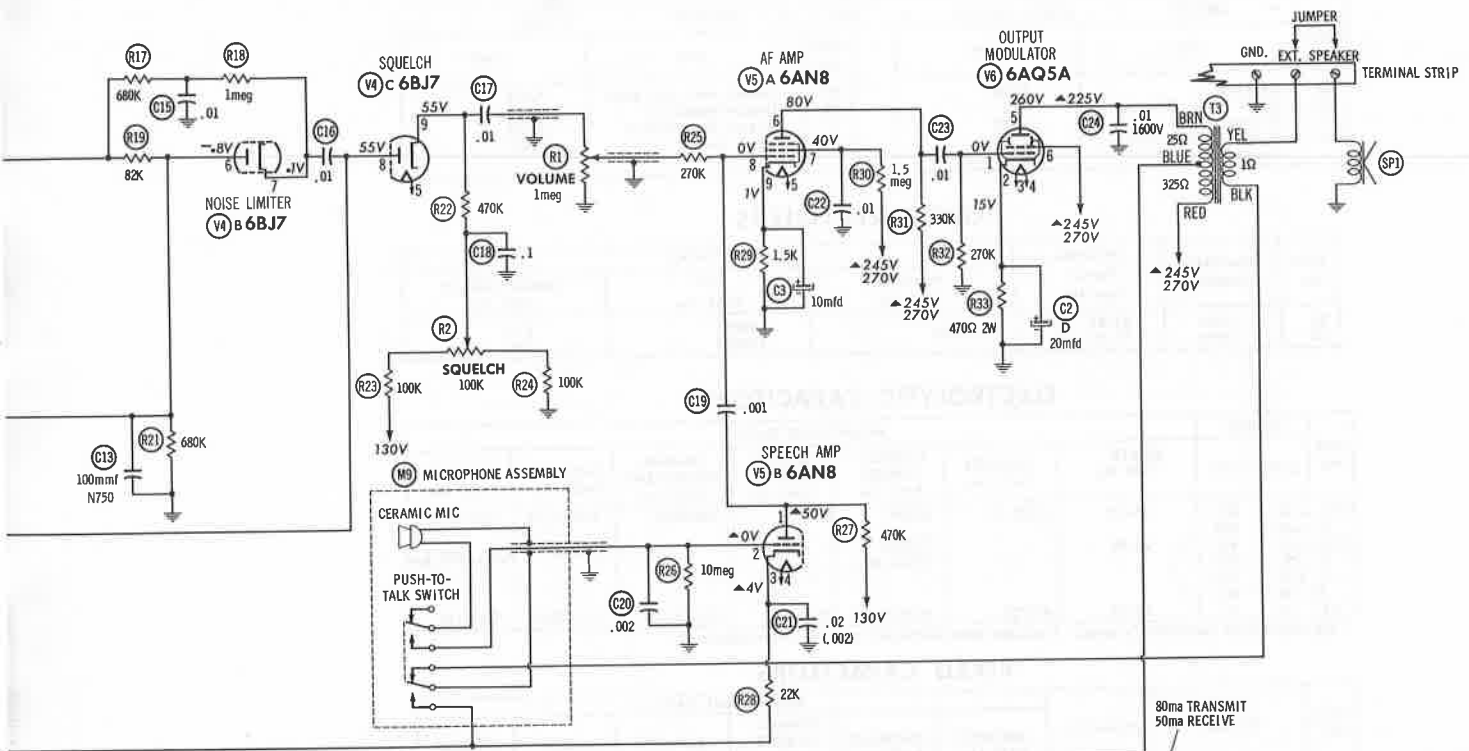
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6	1.1meg	470Ω	FIL	FIL	110K	110K	0Ω		
V2	6U8	132K	1meg	†110K	FIL	FIL	110K	5Ω	0Ω	47K
V3	6BJ6	4.4meg	0Ω	FIL	FIL	110K	166K	0Ω		
V4	6BJ7	0Ω	710K	0Ω	FIL	FIL	610K	2.5meg	1540K	†350K
V5	6AN8	†A450K	†10meg	†22K	FIL	FIL	1330K	11.5meg	500K	1500Ω
V6	6AQ5A	270K	470Ω	FIL	FIL	†680Ω	†330Ω	NC		
V7	6AU8	†100Ω	†47K	†122K	FIL	FIL	†2200Ω	†22K	†110K	†1335Ω
V8	5763	†A660Ω	NC	0Ω	FIL	FIL	†A5400Ω	†100Ω	†22K	TP

ALL MEASUREMENTS MADE IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.  
 † MEASURED FROM OUTPUT OF X2.  
 NC NO CONNECTION ▲ MEASURED IN TRANSMIT POSITION. TP TIE POINT



HEATH MODELS GW-22A/D, GWW-22A/D

# PARTS LIST AND DESCRIPTION

## TUBES

ITEM No.	USE	REPLACEMENT DATA		
		HEATH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.
V1	RF Amp.	6CB6		
V2	Mixer - Osc. (Rec.)	6U8		
V3	IF Amp.	6BJ6		
V4	Detector-AVC-Noise Limiter-Squelch	6BJ7		

## POWER RECTIFIERS

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS		
			MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.080A	57-27	VB400	1N3254	F-4
X2	.080A	57-27		1N3254	F-4

## ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	HEATH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	.50	200	25-58	AFH2-33	B0280	KC2-33	TMD2655	FP242, 5A	TVL-2578
B	.50	200	25-93		C0385 BR20-250			FP448	TVLS-4708, 10*
C2A	.60	450							
B	.40	350							
C	.20	350							
D	.20	250	25-54	PTT39	NLW10-15	MT1-5	MLV10-10	TT12X10	TE-1114
C3	.10	.10							

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## 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.	
C4	3.3 NPO	( .002 ) †	NPO-DI 3, 3	DTZ-3R3	C10V33C	CC70-3R3	CNO-533	10TCC-V33	
C5	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM-401	4TM-P10	
C6	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C7	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C8	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C9	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C10	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C11	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C13	100 N750		N750-DI 100	DTN-100	C10T1U	CC7N-101	CN7-310	10TCU-T10	
C14	100 N750		N750-DI 100	DTN-100	C10T1U	CC7N-101	CN7-310	10TCU-T10	
C15	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C16	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C17	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C18	.1 200V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM-401	4TM-P10	
C19	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10	
C20	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C21	.02		BPD-02	DD-203	BYA6S2	CCD-203	B-120	5HK-S20	
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 1600V		VBC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BL-S10	
C25	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C26	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C27	4.7 N750		N750-SI 5, 0	TCN-5	C10V5U	CCTN-050	CN7-547	10TCU-V47	
C28	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C29	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C30	2.2 5%		1489-00022	DTZ-22	22R5Q22	CM-20B-220J	CNO-422	MS-422	
C31	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C32	100 5%		1489-0001	DTZ-100	22R5T1	CM-20B-101J	CNO-310	MS-310	
C33	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C34	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C35	2.2 10%		NPO-SI 2, 2	TCZ-2R2	C10V22C	CC70-2R2	CNO-522	10TCC-V22	
C36	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C39	1mfd 200V		P288N-1, 0	MP2W1			GEM-21	2TM-M1	
C40	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C41	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20	
C42	.02 1600V		BPD-002	DD-202	DPMS16S2	16DP-4-203	UAC-120	MB-S2	
C43	.02 1600V		BPD-002	DD-202	DPMS16S2	16DP-4-203	UAC-120	MB-S2	
C44	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	
C45	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10	

† Alternate Value.

## CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			HEATH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume & Switch	1meg	19-28	F2-1meg, SU204, KR-1 or (B-70-S)	A47-1meg-Z, RS-2, SWE-12	B13-137, SK3, 76-1 or (BU2, CF26, SS3, GC)*	UA16A, SL2500, US-41 or (RU16A, SL38, SL2500, US-41) or (U53, US-26)
R2	Squelch	100K	10-12	F1-100K, SU204, or (B-40)	A47-100K-S, RS-2	B11-128, SK3 or (BU2, CF13, SS3, DC1)*	UA15L, SL2500 or (RU15L, SL38, SL2500) or (U41)

\* "SNAPTROL"

# PARTS LIST AND DESCRIPTION (CONTINUED)

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		HEATH PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	Antenna Coil						
L2	RF Coil	40-442					
L3	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L4	Rec. Osc.	40-312					
L5	1st IF	52-38	BC-352	14-C1	RTC-8632	T607	
L7	2nd IF	52-29	BC-353	14-C2	RTC-8633	T608	
L7	Trans. Osc.	40-312					
L8	Trans. Driver	40-431					
L9	RF Choke (30uh)	45-27	TV-180	72F335AP	RTC-8593	T972	
L10	Final	40-432					
L11	Line Filter Choke	45-20					
L12	Filter Choke (80uh)	45-7		6177	RTC-9171	T886	

## TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .56A	100VAC @ .22A (AC)	6.3VAC @ 3.4A	(F) 54-124					
T2	12.6VDC @ 2.2A	105VAC Tap @ 95VAC @ .18A (AC)		55-8					

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	5000Ω Tap @ 4300Ω	3-4Ω	(F) 51-94					

## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		HEATH PART No.	QUAM PART No.	
SP1	3 1/2" PM 3-4Ω	401-72	3A05	

## VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			NOTES
				HEATH PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
M1	Interrupter	6V	115v	68-5	5372	1610	

## FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			HEATH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	1 1/2A	421-1 ①	423-1	31201.5	342012	AGC 1 1/2	HKP
M3	3AG	10A	421-30 ②	423-8	311010	155020	AGC 10	HMJ

- ① AC Operation Only.  
② DC Operation Only.

## MISCELLANEOUS

ITEM No.	PART NAME	HEATH PART No.	NOTES
M4	Crystal (Rec.)	Order by Channel	
M5	Crystal (Trans.)	Order by Channel	
M6	Switch (Ch. Sel.)	83-94	
M7	Indicator (Output)	412-13	
M8	Indicator (Power)	412-12	
M9	Microphone Ass'y.	480-29	

## CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Knob - Volume, Squelch	462-159	Cabinet - Front Panel	203-M330F834
Knob - Channel Selector	462-139	Cabinet	90-M249F

## 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. 8498 Single Conductor Shielded (Neoprene)	8498 Single Conductor Shielded (Vinyl)
Ignition Noise Suppression . . . . .	Use BELDEN No. 7300-Series Spark-Plug Sets	
Bonding Strap . . . . .	Use BELDEN No. 8661 (3/8 In.)	

HEATH MODELS GW-22A/D, GWW-22A/D