

This Manual is provided by
CBTricks.com

Someone who wanted to help you repair your equipment
scanned this manual.

If you would like to help us put more manuals online support us.

Supporters of CBTricks.com paid for the hosting so you would have this file.

CBTricks.com is a non-commercial personal website was created to help promote the exchange of service, modification, technically oriented information, and historical information aimed at the Citizens Band, GMRS (CB "A" Band), MURS, Amateur Radios and RF Amps.

CBTricks.com is not sponsored by or connected to any Retailer, Radio, Antenna Manufacturer or Amp Manufacturer, or affiliated with any site links shown in the links database. The use of product or company names on my web site is not endorsement of that product or company.

If your company would like to provide technical information to be featured on this site I will put up on the site as long as I can do it in a non-commercial way.

The site is supported with donation from users, friends and selling of the Galaxy Service Manual CD to cover some of the costs of having this website on the Internet instead of relying on banner ads, pop-up ads, commercial links, etc. to pay my costs. Thus I do not accept advertising banners or pop-up/pop-under advertising or other marketing/sales links or gimmicks on my website.

ALL the money from donations is used for CBTricks.com I didn't do all the work to make money (I have a day job). This work was not done for someone else to make money also, for example the ebay CD sellers.

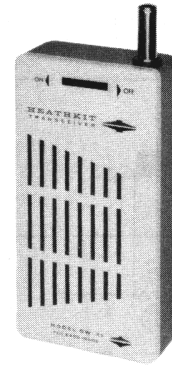
All Trademarks, Logos, and Brand Names are the property of their respective owners.
This information is not provided by, or affiliated in any way with any radio or antenna Manufacturers.
Thank you for any support you can give.



PHOTOFACT[®] with

CIRCUITRACE[®]

TRADE NAME : Heath Models GW-31, GWW-31
 SUPPLIER : Heath Co., A Subsidiary of Daystrom, Inc.
 Benton Harbor, Michigan
 TYPE SET : 4 Transistor Single Channel Transceiver
 POWER SUPPLY : 9 Volts DC
 RATING : 15MA @ 9VDC (Receive)
 26MA @ 9VDC (Transmit)
 TUNING RANGE : Any one of Channel 1 thru 23



ALIGNMENT INSTRUCTIONS

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:

A1, A2, GENERAL CEMENT #8282, 8606, 9295. . . . WALSICO #2526, 2543, 2544

RECEIVER ALIGNMENT

	SIGNAL GENERATOR	CHANNEL	ADJUST	REMARKS
1.	High side to antenna terminal, common to ground. Tune to channel frequency desired.		A1	Connect AC voltmeter across speaker voice coil. Adjust for maximum output.

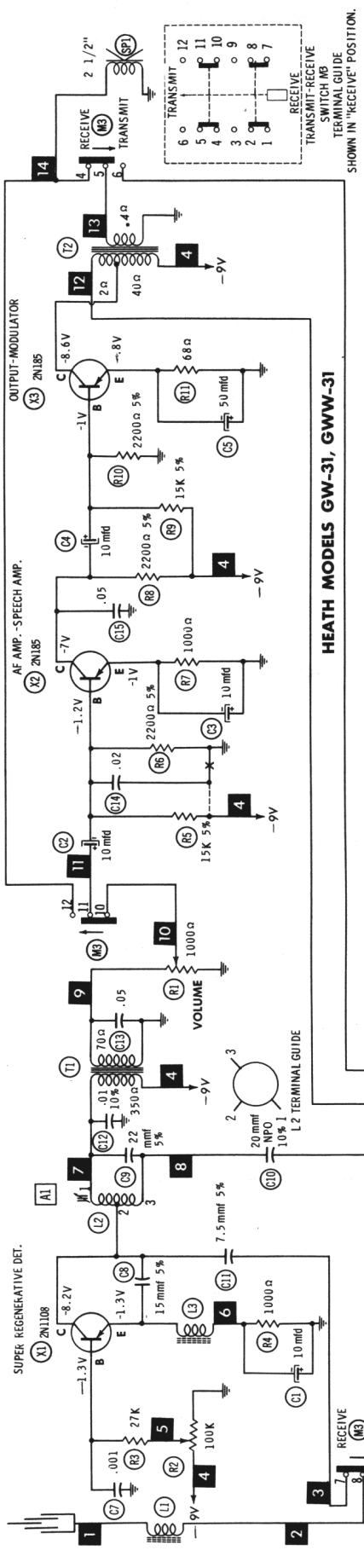
TRANSMITTER ALIGNMENT

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

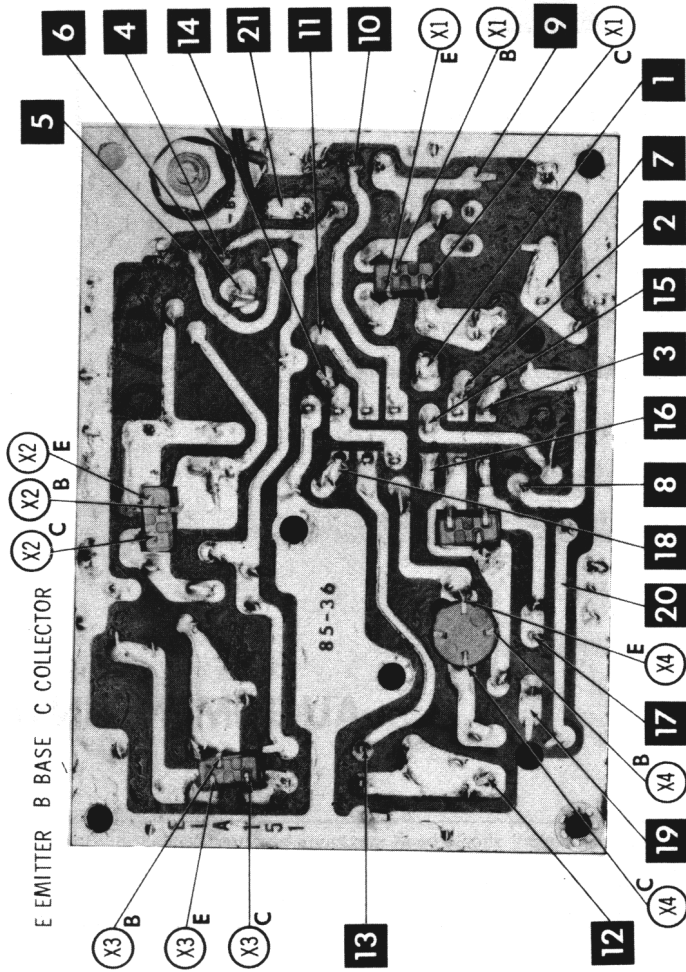
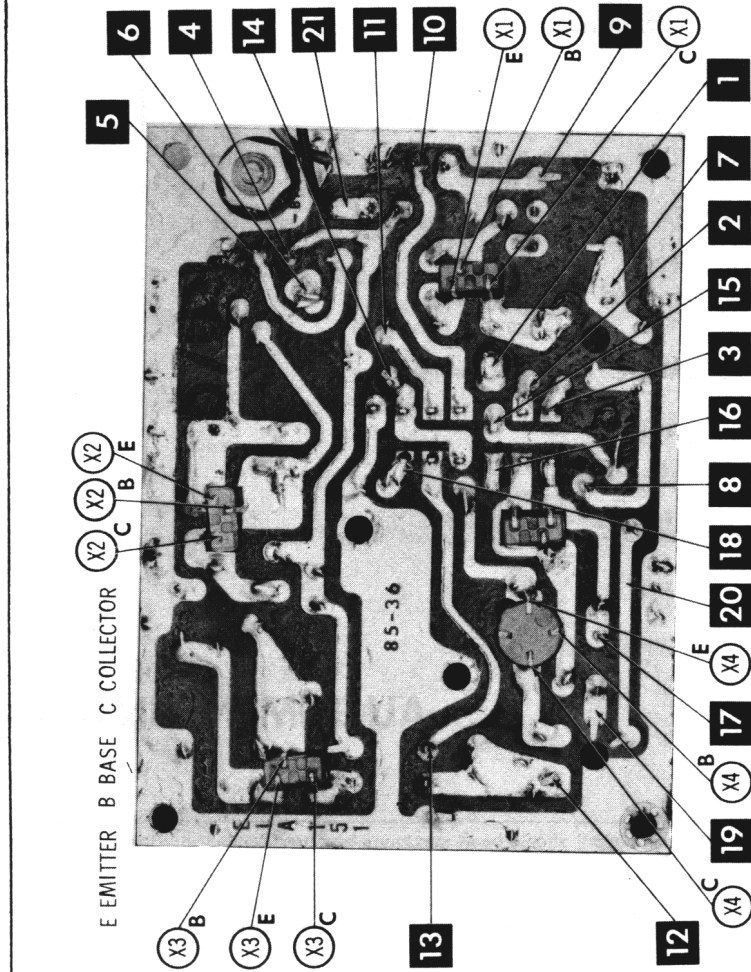
	SPECIAL INSTRUCTIONS	INDICATOR	ADJUST	REMARKS
1.	Maintain supply voltage at 9 volts during transmitter alignment. Connect antenna.	RF Wattmeter or Field Strength Meter.	A2	Key Transmitter. Adjust for maximum indication.

HEATH MODELS GW-31, GWW-31

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



HEATH MODELS GW-31, GWW-31



RESISTANCE READINGS

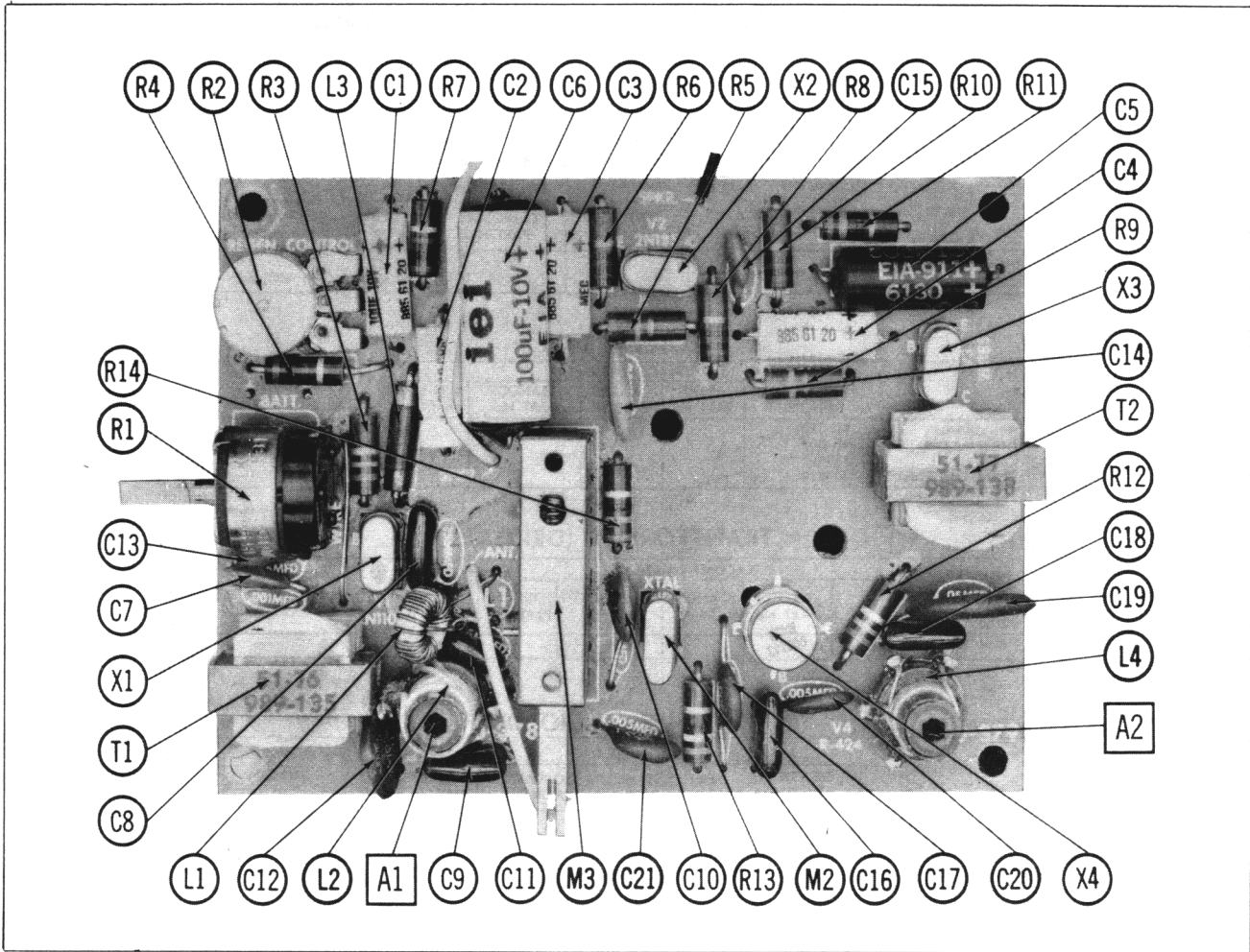
ITEM	TYPE	BASE	EMITTER	COLLECTOR
X1	2N1108	77K	1000Ω	1330Ω
X2	2N1185	2200Ω	1000Ω	12200Ω
X3	2N1185	2200Ω	68Ω	140Ω
X4	R424	3900Ω	68Ω	142Ω

ALL MEASUREMENTS TAKEN IN RECEIVE POSITION UNLESS OTHERWISE DESIGNATED.
 * TAKEN IN TRANSMIT POSITION.
 † MEASURED FROM SWITCH ON VOLUME CONTROL.
 A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

©Howard W. Sams & Co., Inc. 1963

See parts list for alternate value or application.
 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 Howard W. Sams CIRCUITRACE® Photo



PARTS LIST AND DESCRIPTION TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	2N1108	Super Regenerative Det.	DS25	GE-1		PNP
X2	2N185	AF Amp. -Speech Amp.	DS26	GE-2	2N406	PNP
X3	2N185	Output-Modulator	DS26	GE-2	2N408	PNP
X4	R424	Transmit Osc.	DS34	GE-1		PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	HEATH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	10	10	25-54	P TT39	NLW10-15	MT1-5	T T12X10	MLV10-10	TE-1114
C2	10	10	25-54	P TT39	NLW10-15	MT1-5	T T12X10	MLV10-10	TE-1114
C3	10	10	25-54	P TT39	NLW10-15	MT1-5	T T12X10	MLV10-10	TE-1114
C4	10	10	25-54	P TT39	NLW10-15	MT1-5	T T12X10	MLV10-10	TE-1114
C5	50	10	25-55	P TT45	NLW50-10	MT1-16	T T10X50	MLV50-10	TE-1119
C6	100	10	25-56	P TT46	NLW100-12	MT1-19	T T12X100	MLV100-10	TE-1119, 3

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C7	.001		DI-1000	DM-102	H05D1	CCD-102	GP210	10TS-D10
C8	15 5%		ADM-15-150	TCZ-15			CNO-415	10TCC-Q15
C9	22 5%		ADM-15-220	TCZ-22			CNO-422	10TCC-Q22
C10	20 NPO 10%		NPO-DI 20	DTZ-20				10TCC-Q20
C11	7.5 5%	#20-52			C10Q2C	CC TO-200		
C12	.01 10%	#21-47						10TS-S10
C13	.05		T TD-05	CK-503	H05S5			TG-S50
C14	.02		T TD-02	CK-203	H05S2		TA-120	TG-S20
C15	.05		T TD-05	CK-503	H05S5			TG-S50
C16	47 5%		ADM-15-470	TCZ-47			CNO-447	10TCC-Q47
C17	.005 10%		DI-5000			CCD-502	JF-250	10TS-D50
C18	30 5%		ADM-15-300	TCZ-30				10TCC-Q30
C19	.05		T TD-05	CK-503	H05S5			TG-S50
C20	.005 10%		DI-5000			CCD-502	JF-250	10TS-D50
C21	.005 10%		DI-5000			CCD-502	JF-250	10TS-D50

Heath Part Number.

PARTS LIST AND DESCRIPTION (CONTINUED)

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			HEATH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1 R2	Volume & Switch Regeneration	1000Ω 100K	19-65 10-123				MCL15L

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	Ant. Load	40-380					
L2	Receiver Osc.	40-378					
L3	Choke (15uh)	45-51					
L4	Trans. Osc. Final	40-379					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
			HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T1	1.8	1	51-76					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
			HEATH PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC.						
T2	1450Ω Tap @ 700Ω	8-10Ω	51-77					

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		HEATH PART No.	QUAM PART No.	
SP1	2 1/2" PM 8-10Ω	1401-61		

BATTERIES

ITEM No.	VOLTAGE	HEATH PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M1	9V		2N6	246	M1602	

MISCELLANEOUS

ITEM No.	PART NAME	HEATH PART No.	NOTES
M2 M3	Crystal Switch Printed Board	1064-15 85-36 F509	Transmit Receive-Transmit

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	462-144	Volume
Knob	462-143	Slide Switch
Cabinet	90-176F	

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.)