

the hallicrafters co.

OCTOBER 1947
94X210

SERVICE BULLETIN FOR MODEL S-47



GENERAL:

- Tubes Fifteen
- Speaker output impedance 500 ohms.
- Antenna Provisions for external long wire antenna for AM bands and a folded dipole (200-ohm) for FM band.
- Tuning Manual and mechanical push buttons. (Five channels for AM and five channels for FM.)
- Tuning Range (BC) 540kc - 1700 Kc.
(A) 15 mc - 18 mc.
(B) 9 mc - 12 mc.
(C) 5.8 mc - 18 mc.
(FM) 88 mc - 108 mc.
- I. F. (AM) 455 Kc.
- I. F. (FM) 10.7 mc.
- Power Supply 105-125 V. 60 cycles A.C.
- Power Consumption 180 watts.

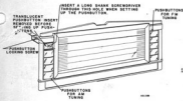


Fig. 1. View showing pushbutton setup.

INSERTING CALL LETTERS INTO TRANSLUCENT INSERT ASSEMBLY:

1. Slide out metal insert from translucent insert assembly. (See Fig. 2).
2. Insert call letter tab.
3. Replace metal insert.
4. Replace translucent insert assembly into pushbutton.

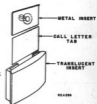


Fig. 2. View showing call letter installation.

BUTTON SETTING:

Note - Insulate the muting switch springs before setting the AM buttons.

1. Select any one pushbutton.
2. Pull translucent insert straight out.
3. Insert screw driver blade through large hole of pushbutton into slot of locking screw. (See Fig. 1).
4. Loosen locking screw about one-half turn. (Not more than one full turn.)
5. With pushbutton depressed, carefully tune in desired station with the manual control and tighten the locking screw.

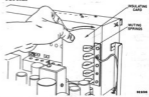


Fig. 3. Insulating the muting switch contacts

REPLACING DIAL LAMP:

Refer to Fig. 10 for location of the two pilot lamps. To gain access to the lamps remove the four front panel screws holding the panel to the cabinet and three chassis screws located under the cabinet. Pull the chassis clear of the cabinet. Unscrew and remove the knobs. Remove the four panel screws holding the panel to the chassis to release the panel exposing the pilot lamps for service. Replace pilot lamps with 6-8V, 150 ma. Mazda #47 equivalent.

ALIGNMENT PROCEDURE:

It will be necessary to remove the receiver chas-

sis from the cabinet and remove the chassis bottom plate to gain access to some of the I. F. transformer iron core adjustments. See Fig. 6.

The receiver is equipped with AUTOMATIC FREQUENCY CONTROL on the "FM" band to compensate for mechanical variations in the push-button mechanism. Correction factor is approximately 8 times: "Take hold" characteristics are: "Before" 100 kc and "Release" before 450 kc at a 0.2 volt input signal.

The standard RMA dummy mentioned in the alignment chart consists of a 200 muf condenser in series with a 20 uh r-f choke which is shunted by a 400 muf condenser in series with a 400 ohm carbon resistor.

ALIGNMENT PROCEDURE

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Pos.	Radio Dial Setting	Adjust	Remarks
1	0.01 mfd cap.	To stator plates of center section of AM tuning cap.	455 Kc	"BC"	1000 kc	33, 35, 36, 38, 31 & 34	Adjust for max. output. TUNE tone control set at No. 1.
2	0.01 mfd cap.	To stator plates of center section (No MODU- of FM tuning cap. lation)	10.7 mc	"FM"	Mid-scale	39, 312, 13 39, 311, 37 & 310	Adjust for max. AVC voltage as measured between pin #7 of SALS and ground with a 20,000-ohm per volt meter.
3	0.01 mfd cap.	To stator plates of center section (No MODU- of FM tuning cap. lation)	10.7 mc	"FM"	Mid-scale	314	Adjust for zero voltage as measured between junction of L16 and C34 with a 20,000-ohm per volt meter.
4	Std. RMA dummy.	To terminals "A" and "G" on ant. term. strip	1600 kc 800 kc	"BC" "BC"	1600 kc 800 kc	FW, N and I G	Adjust for max. output
5	Std. RMA dummy	To terminals "A" and "G" on ant. term. strip	16 mc	"C"	16 mc	2*, R and S	Adjust for max. output.
6	Std. RMA dummy	To terminals "A" and "G" on ant. term. strip.	18 mc 15 mc	"A" "A"	18 mc 15 mc	A*, O and N B*, P, and Q	Adjust for max. output
7	Std. RMA dummy	To terminals "A" and "J" on ant. term. strip.	12 mc 9 mc	"B" "B"	12 mc 9 mc	C*, J and K D*, L	Adjust for max. output.
8	Two 150 ohm carbon resistors	To terminals "D" and "D" on ant. term. strip; use 150 ohm resistor in each lead.	108 mc	"FM"	108 mc	T*, U and V	Adjust for max. output.

* NOTE - Calibration adjustments.

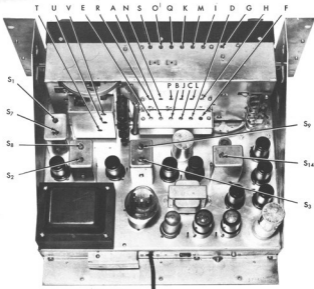


Fig. 4. Top view showing alignment points.

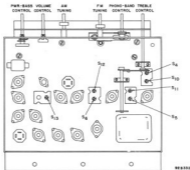


Fig. 5. Bottom view showing alignment points.

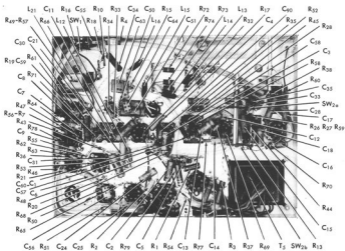


Fig. 6. Bottom view of receiver showing component location.

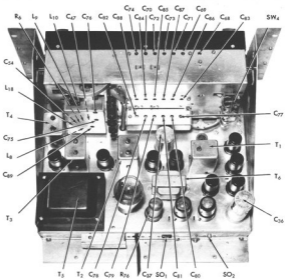


Fig. 7. Top view showing component location.

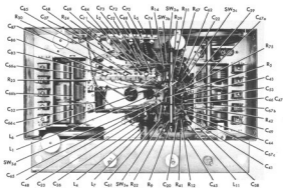


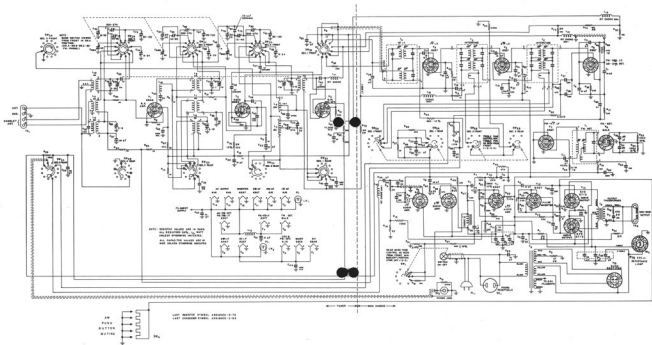
Fig. 8. Front view of R.F. chassis showing component location.

SERVICE PARTS LIST

REF. NO.	DESCRIPTION	MILLIAMPERE PART NUMBER
0-1, 3, 4, 5, 6, 8, 9, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26	.01 mfd 400 V., tubular paper	46A2103T
0-2, 26, 27, 28	.02 mfd 400 V., tubular paper	46A2103F
0-7, 11, 31, 32, 50, 51	.05 mfd. 400 V., tubular paper	46A2103P
0-25	.01 mfd 400 V., molded paper	46A2103J
0-30	.1 mfd 200 V., tubular paper	46A2104K
0-33	.025 mfd 400 V., tubular paper	46A2102J
0-34	.053 mfd 400 V., tubular paper	46A2102L
0-36	40-20 mfd 450 V., 20 mfd. 30 V., electrolytic	45B2099
0-37	40-10 mfd 450 V., 20 mfd. 30 V., electrolytic	45B1100
0-38, 39	500 mfd 500 V., ceramic	47A147
0-40, 42, 43, 44	5000 mfd 500 V., ceramic	47A148
0-41	10,000 mfd 150 V., ceramic	47B32103AK
0-45	10 mfd 500 V., ceramic	47A149
0-46, 47	47 mfd 500 V., ceramic	47A150
0-48	1.5 mfd., ceramic	47A160-3
0-49	20 mfd 500 V., mica	CM20A220K
0-52, 64	200 mfd 500 V., mica	CM20A220M
0-54	22 mfd 500 V., mica	CM20A220C
0-55	22 mfd 500 V., mica	CM20A220M
0-58, 59, 58	220 mfd 500 V., mica	CM20A221M
0-53	330 mfd 500 V., mica	CM20A330M
0-60, 61, 62	47 mfd 500 V., mica	CM20A470M
0-63	.001 mfd 500 V., mica	CM20A102M
0-65	.0025 mfd 500 V., mica	CM20A102J
0-66	Tuning condenser, "4M"	48C170
0-67	Tuning condenser, "7M"	48C175
0-68	570 mfd. trimmer.	44A189
0-69, 70, 71, 72, 73, 74	Trimmer assembly, ant. stage.	44B190
0-75	Trimmer, FM, mixer stage.	44A192
0-76	Trimmer, FM, ant. stage.	44A194
0-77, 78, 79, 80, 81, 82	Trimmer assembly, osc. stage.	44B195
0-83, 84, 85, 86, 87, 88	Trimmer assembly, mixer stage.	44B196
0-89	Trimmer, FM, osc. stage	44A208
0-92	39 mfd. 500 V., ceramic	CC30A390M
RESISTORS		
R-1, 2	330 ohms 5 watts, Ww.	24A864
R-3	47 ohms 4 watts, Carbon.	RC20AE330M
R-4	2 meg-ohms, volume control	25A865
R-5, 6	10 ohms 5 watt, carbon	RC20AE100M
R-7, 49	33,000 ohms 5 watt, carbon	RC20AE330M
R-8	100 ohms 5 watt, carbon	RC20AE101M
R-9, 10, 12, 13, 14, 17	1000 ohms 5 watt, carbon	RC20AE102M
R-15, 16	10,000 ohms 5 watt, carbon	RC20AE103M
R-17, 19, 20, 21, 22, 23, 24	500,000 ohms 5 watt, carbon	RC20AE104M
R-28	33 ohms 5 watt, carbon	RC20AE330M
R-26, 27, 28, 29, 30, 31	1 meg-ohm 5 watt, carbon	RC28AE105M
R-32	150 ohms 5 watt, carbon	RC20AE150M
R-33, 34	100,000 ohms 5 watt, carbon	RC20AE104K
R-35, 36, 37, 38, 39	220 ohms 5 watt, carbon	RC20AE220M
R-40, 58, 59	47,000 ohms 5 watt, carbon.	RC20AE470M
R-41, 42, 78	22,000 ohms 5 watt, carbon	RC20AE220M
R-43, 44, 52, 64	220,000 ohms 5 watt, carbon	RC20AE220K
R-45, 50, 51	330,000 ohms 5 watt, carbon	RC20AE330K
R-46	100 ohms 5 watt, carbon	RC20AE101K
R-47, 48	3300 ohms 5 watt, carbon	RC20AE332M
R-53	3900 ohms 5 watt, carbon	RC20AE392M
R-54	12,000 ohms 5 watt, carbon	RC20AE123M
R-55	470 ohms 5 watt, carbon	RC20AE470M
R-56	6700 ohms 5 watt, carbon	RC20AE670M
R-57	6700 ohms 5 watt, carbon	RC20AE670M
R-60, 81	68,000 ohms 5 watt, carbon.	RC20AE680M
R-62, 65	470,000 ohms 5 watt, carbon	RC20AE470K
R-63	390,000 ohms 5 watt, carbon	RC20AE390K
R-64	300,000 ohms 5 watt, carbon	RC30AE300K
R-67	33,000 ohms 1 watt, carbon.	RC30AE330M
R-68, 69, 70	47,000 ohms 1 watt, carbon.	RC30AE470M
R-71	33,000 ohms 1 watt, carbon	RC30AE330M
R-72, 73, 74	15,000 ohms 2 watt, carbon	RC40AE150M

SERVICE PARTS LIST (Continued)

REF. NO.	DESCRIPTION	MILLIAMPERE PART NUMBER
R-75	33,000 ohms 2 watts, carbon	RC40AE330K
R-76	330 ohms, plug-in ballast	24B870
R-79	470 ohms 2 watts, carbon	RC40AE470M
TRANSFORMERS AND COILS		
T-1	Transformer, FM detector	50C200
T-2, 3	Transformer, interstage i.f.	50C209
T-4	Transformer, 1st. i.f.	50C230
T-5	Transformer, power	52C151
T-6	Transformer, audio output	55B096
L-1	Mixer coil for SW band	51B905
L-2	Antenna coil for BC band	51B905
L-3	Oscillator coil for SW band	51B906
L-4	Antenna coil for SW band	51B909
L-5	Mixer coil for BC band	51B910
L-6	Oscillator coil for BC band	51B911
L-7	Oscillator coil for FM band	51B914
L-8	Mixer coil for FM band	51B915
L-9	Antenna coil for FM band	51B916
L-10	Plate choke, osc. stage	53B008
L-11	Socket, miniature (tube)	53B009
L-12	Filter choke, ant. stage	53A106
L-13, 14, 15, 16	R.F. choke	53A115
L-17	R.F. choke, ant. stage plate	53A115
L-21	Audio choke	54B042
SWITCHES		
SM-1	Power & bias tone switch ass'y	60A307
SM-2	Treble switch ass'y.	60A364
SM-3	Band switch	60C266
SM-4	Muting switch	16A092
PLUGS AND LAMPS		
PL-1	Line cord and plug	87B1625
PL-2	Receptacle, phono motor	10A015
PL-3	Jack, phono pick-up	16A034
PL-4	Receptacle, ballast	6A190
PL-5	Socket, octal (tube)	6A190
PL-6	Socket, miniature (tube)	6A276
PL-7	Pilot light socket & bracket, L.R.	85A048
PL-8	Pilot light socket & bracket, R.R.	85A047
TUBES AND SOCKETS		
V-1	Type 6BA6, Antenna	90A586
V-2	Type 6BE6, Mixer	90A587
V-3	Type 6X4, Oscillator and A.F.C.	90A536
V-4, 5, 6	Type 6G7, I.F. amplifier	90A507
V-7	Type 6SN7, I.F. amplifier	90A507
V-8	Type 6AL5, R.F. detector	90A5A5
V-9	Type 6U5, A.F. amplifier	90A5A5
V-10, 11	Type 6X5, Phase inverter	90A550
V-12, 14	Type 6X6/7G, A.F. power amplifier	90A5V6G
V-15	Type 50A5, Rectifier	90A584G
W-1, 2	Lamp, 4-8 V., 150 MA. G.T. #47	30A004
MISCELLANEOUS COMPONENTS		
SH-1	Shield base, tube (miniature type)	68A169
SH-2	Shield, tube (miniature tube)	68A104
SH-3	Shield, tube retainer	75A070
SH-4	Carriage, pointer	67A045
SH-5	Pointer, FM	82B136
SH-6	Pointer, AM	82B143
SH-7	Spring, pointer	75A132
SH-8	Push-button (black)	17A028-1
SH-9	Insert, push-button, lucite	17A027
SH-10	Insert, push-button, metal	17A029
SH-11	Call letters	17A025-1
SH-12	Spring, dial	75A006
SH-13	Coil, dial	38A017
SH-14	Escutcheon	70B09-1
SH-15	Dial glass, upper	22B193
SH-16	Dial glass, lower	22B193
SH-17	Knob	15A131
TS-1	Terminal strip, antenna	88A277
TS-2	Terminal strip, speaker	88A338-1
TS-3	Shield, speaker terminal	69C173



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Fig. 7. Schematic diagram.