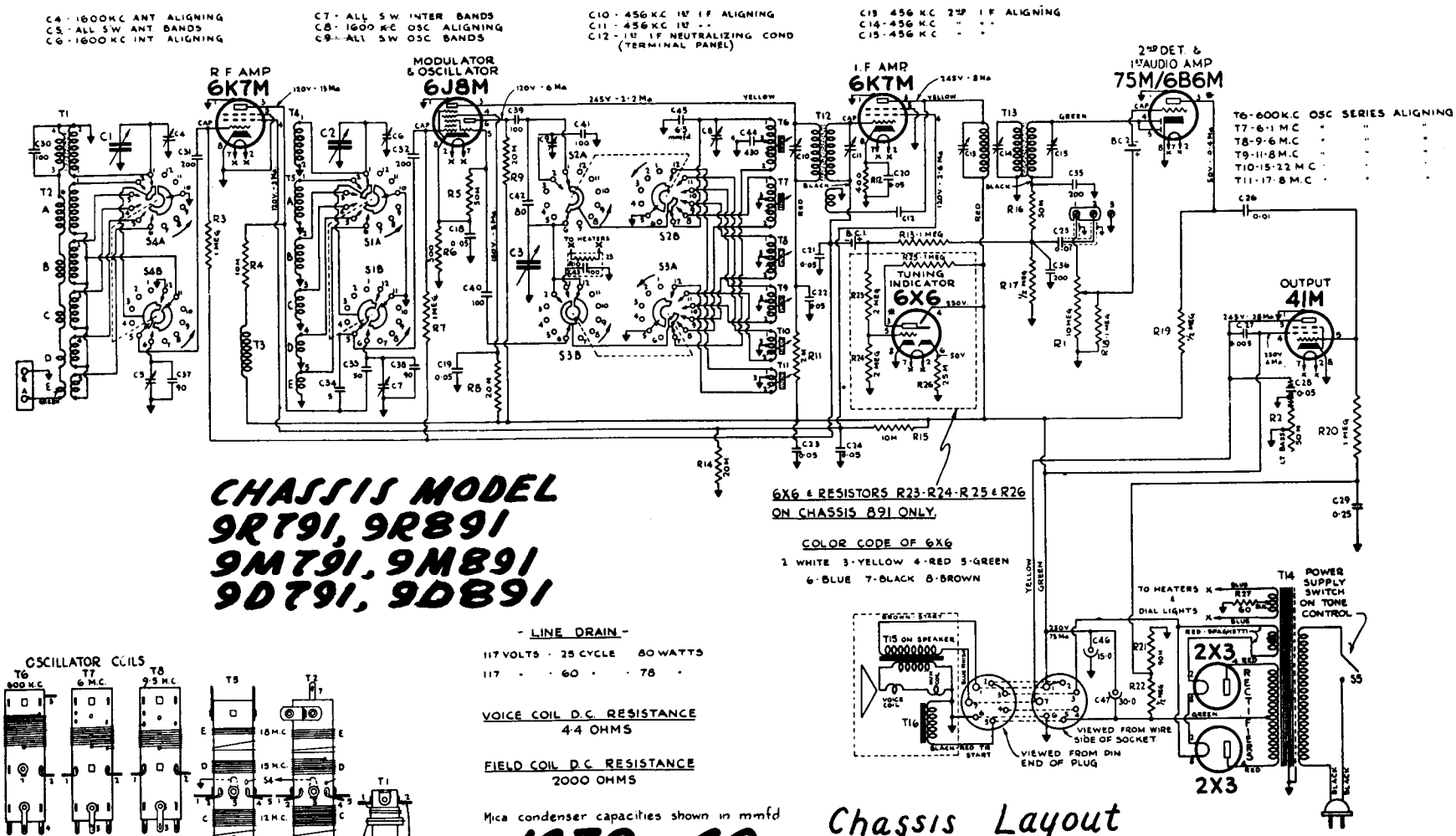


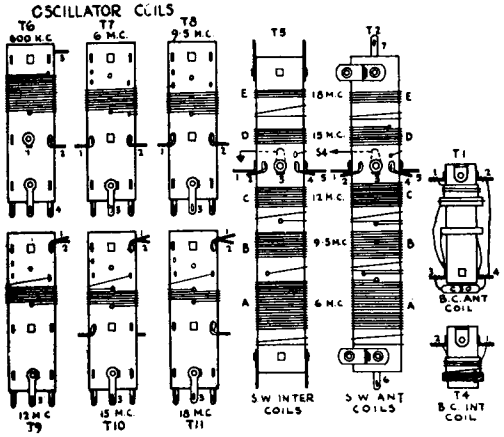
CHASSIS MODEL
9RT91, 9RB91
9MT91, 9MB91
9DT91, 9DB91

6X6 & RESISTORS R23-R24-R25 & R26 ON CHASSIS 891 ONLY.

COLOR CODE OF 6X6

2 WHITE 3-YELLOW 4-RED 5-GREEN
6-BLUE 7-BLACK 8-BROWN

OSCILLATOR COILS



- LINE DRAIN -

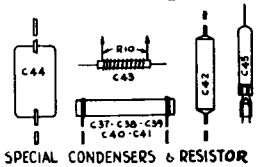
117 VOLTS · 25 CYCLE 80 WATTS
117 · · 60 · · 78 ·

VOICE COIL D.C. RESISTANCE
4·4 OHMS

FIELD COIL D.C RESISTANCE
2000 OHMS

Mica condenser capacities shown in mmfd

1939-40



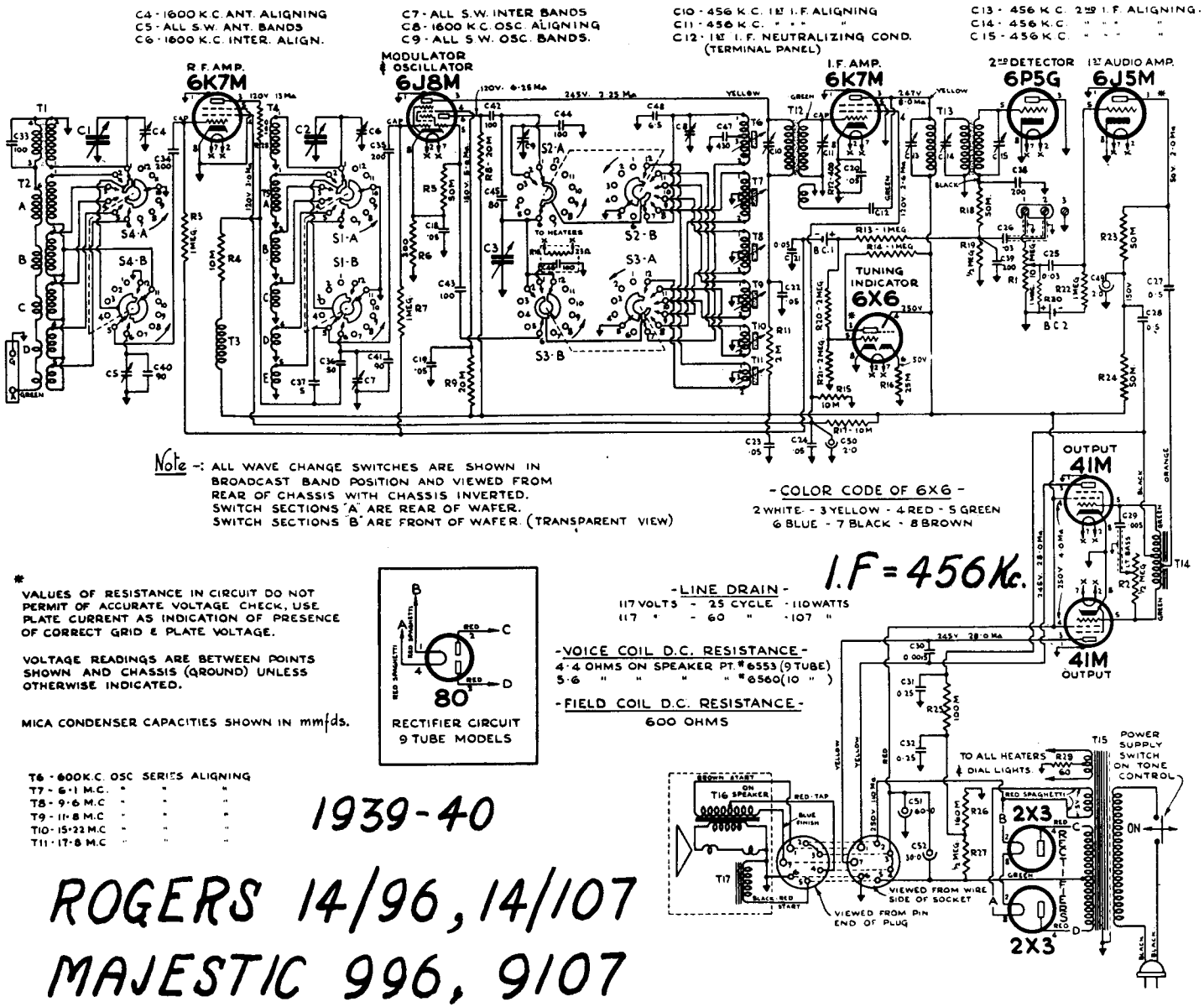
SPECIAL CONDENSERS & RESISTOR

Chassis Layout on Sheet

ROGERS · 14/76, 14/86
MAJESTIC · 976, 986
DE FOREST · BILTMORE, EMBASSY, STATLER.

Alignment Data on Sheet 60

ROGERS-MAJESTIC DATA SHEET 58



Note -: ALL WAVE CHANGE SWITCHES ARE SHOWN IN BROADCAST BAND POSITION AND VIEWED FROM REAR OF CHASSIS WITH CHASSIS INVERTED. SWITCH SECTIONS 'A' ARE REAR OF WAFER. SWITCH SECTIONS 'B' ARE FRONT OF WAFER. (TRANSPARENT VIEW)

- COLOR CODE OF 6X6 -
2 WHITE - 3 YELLOW - 4 RED - 5 GREEN
6 BLUE - 7 BLACK - 8 BROWN

* VALUES OF RESISTANCE IN CIRCUIT DO NOT PERMIT OF ACCURATE VOLTAGE CHECK, USE PLATE CURRENT AS INDICATION OF PRESENCE OF CORRECT GRID & PLATE VOLTAGE.

VOLTAGE READINGS ARE BETWEEN POINTS SHOWN AND CHASSIS (GROUND) UNLESS OTHERWISE INDICATED.

MICA CONDENSER CAPACITIES SHOWN IN mmfds.

RECTIFIER CIRCUIT 9 TUBE MODELS

- LINE DRAIN -
117 VOLTS - 25 CYCLE - 110 WATTS
117 " - 60 " - 107 "

- VOICE COIL D.C. RESISTANCE -
4-4 OHMS ON SPEAKER PT. #6553 (9 TUBE)
5-6 " " " " #6560 (10 ")

- FIELD COIL D.C. RESISTANCE -
600 OHMS

I.F = 456 Kc.

T6 - 600K.C. OSC SERIES ALIGNING
T7 - 6·1 M.C. " " "
T8 - 9·6 M.C " " "
T9 - 11·8 M.C " " "
T10 - 15·22 M.C " " "
T11 - 17·8 M.C " " "

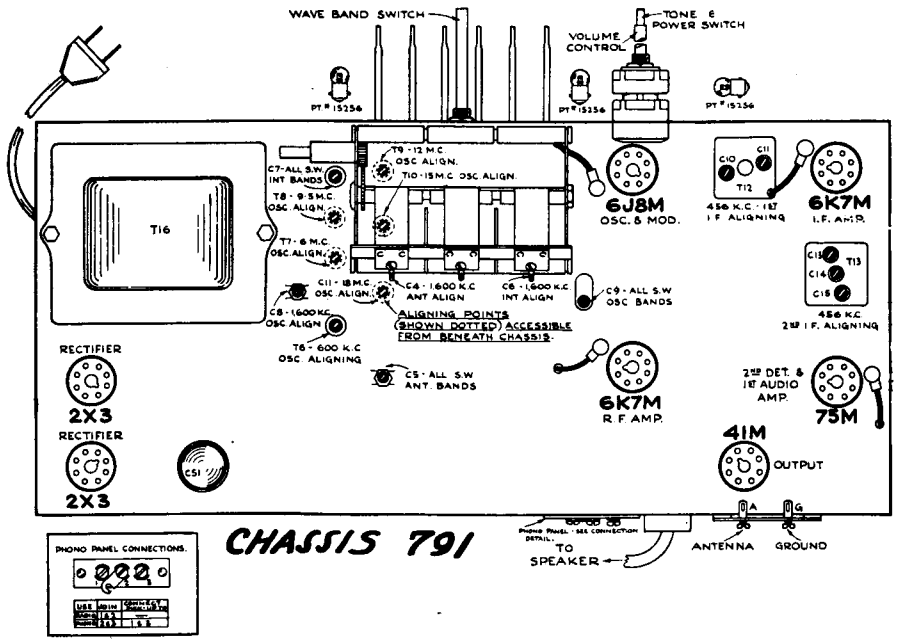
1939-40

ROGERS 14/96, 14/107
MAJESTIC 996, 9107
DE FOREST PARK LANE
WALDORF

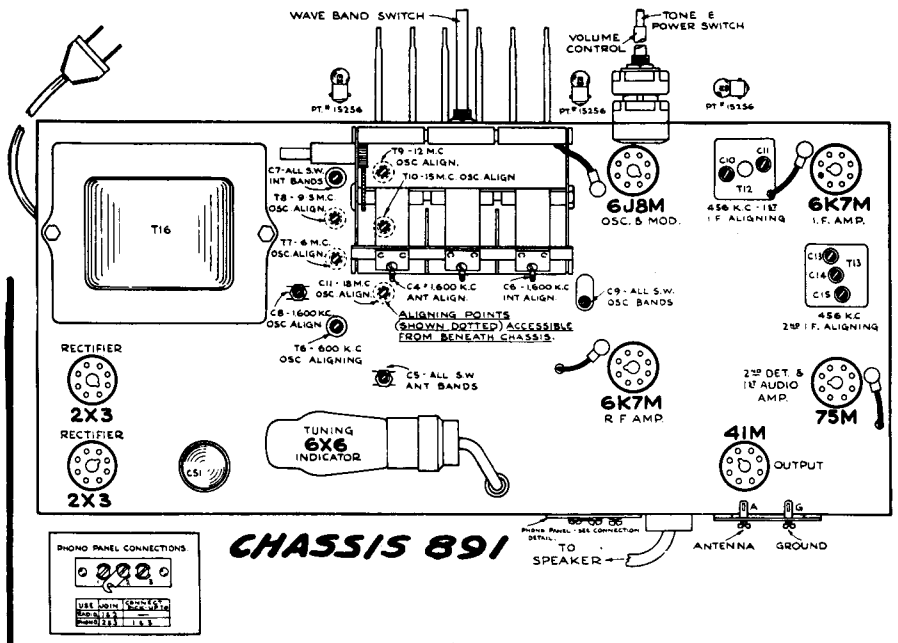
Chassis Types 9R991, 9M991, 9D991
9R1091, 9M1091, 9D1091

Alignment Data and Layouts on Sheets 59-60

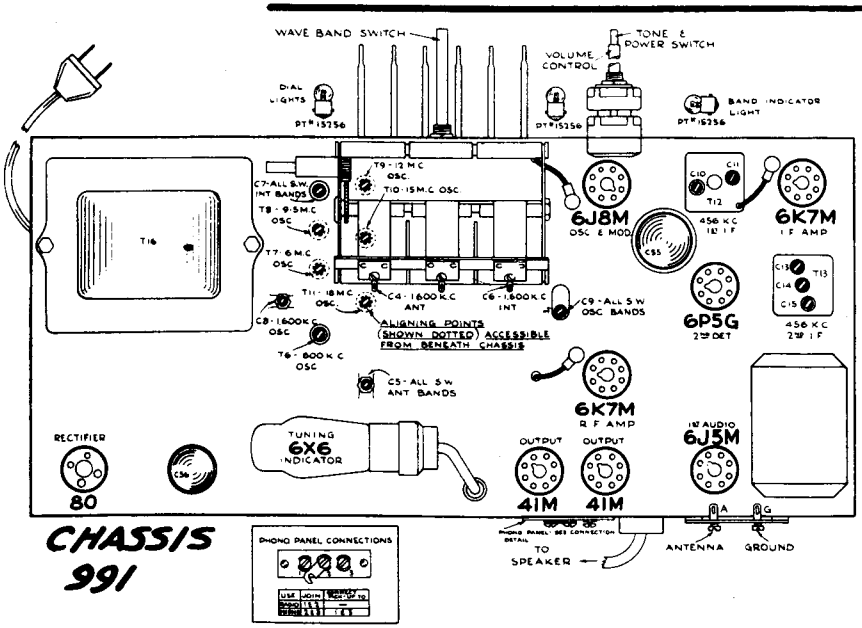
ROGERS-MAJESTIC DATA SHEET 58A



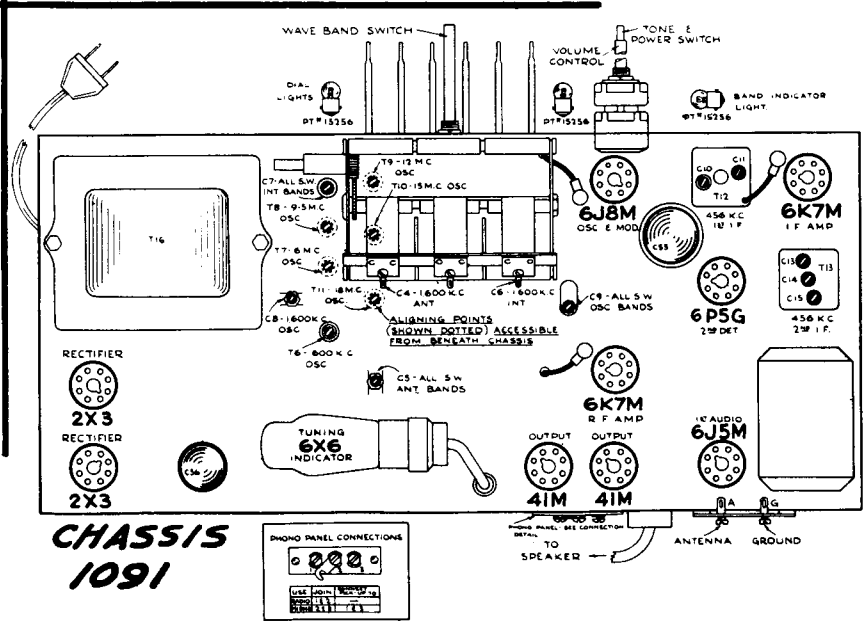
CHASSIS 791



CHASSIS 891



CHASSIS 991



CHASSIS 1091

LAYOUT FOR CHASSIS MODELS · 9R891, 9M891, 9D891, 9R791, 9M791, 9D791, 9R991, 9M991, 9D991, 9R1091, 9M1091, 9D1091.

I. F. AND BROADCAST BAND

In aligning the broadcast channel of these receivers, the heterodyning oscillator operates at a frequency 456 kilocycles higher than the carrier or station frequency. This means that the parallel aligning condensers of the oscillator, antenna and interstage, are adjusted for minimum capacity conditions and the 600 kilocycle series tracking adjustment (effected through the movable core of T6) is positioned for minimum inductance. Minimum inductance occurs when the core is withdrawn from the coil to the maximum point at which the signal can be tuned.

Conditions of adjustment, during alignment of the I. F. and broadcast channels, will be found in the following table:

Operation	Connect Generator	Set Generator Tuning	Set Receiver Tuning (x)	Dummy Antenna	Volume Control	Adjust	Remarks
1	To Grid Cap of 6J8M	456 kc/s.	700-800 kc/s.	.01 mfd.	Max.	C15, C14, C13, C11 and C10	To Peak I.F.
2	To Antenna	1600 kc/s.	1600 kc/s.	.0002 mfd.	Max.	C8	To Peak Osc.
3	To Antenna	1600 kc/s.	1600 kc/s.	.0002 mfd.	Max.	C6	To Peak I.S.
4	To Antenna	1600 kc/s.	1600 kc/s.	.0002 mfd.	Max.	C4	To Peak Ant.
5	To Antenna	600 kc/s.	600 kc/s.	.0002 mfd.	Max.	T6*	To Track Osc.
6	To Antenna	1600 kc/s.	1600 kc/s.	.0002 mfd.	Max.	C8, C6, C4	Recheck Adj.

SHORT-WAVE SPREAD-BAND

The process of aligning the short-wave channels of a spread-band model differs materially from that encountered in conventional short-wave receivers. Before attempting such adjustment, the following detail must be fully read over and understood, so as to avoid the possibility of error which would result in complete mis-alignment of one or more of the short-wave channels.

The equipment recommended for alignment of the I. F. and broadcast channels still applies for spread-band adjustments, but with the qualification that the signal generator or service oscillator shall be of such type that very close stability as regards frequency must prevail. The signal generator is to be used primarily for the purpose of providing a steady signal at those frequencies selected for spread-band alignment. For positive identification of the frequencies used, it is essential that accurate calibration prevail.

If a crystal-controlled oscillator is available, it is recommended that it be used to provide marker frequencies throughout the short-wave channels as positive identification of frequency.

Throughout the short-wave channels, the oscillator operates at 456 kilocycles lower in the frequency than the station carrier frequency. This point is important and must be kept well in mind to prevent aligning the short-wave channels on the image. With the oscillator running 456 kilocycles lower in frequency than the incoming carrier, it means that during the process of spread-band alignment, the movable cores of the short-wave inductances must be adjusted so that they are as far inside the coil form as necessary to provide proper peaking. This point is very important.

Of the eight adjustments provided for the short-wave channels, only three of these are interlocking and are identified by the symbols C5, C7 and C9 of the chassis illustration.

Adjustment of C5 and C7 will not in practice be found very critical, and the purpose of these adjustments is to correct dial scale calibration at the high frequency end of any band which shows extreme variation from normal dial calibration.

Adjustment of C9, however, is critical since it constitutes a primary adjustment affecting all short-wave bands simultaneously.

This particular condenser may, however, be found in field adjustments to provide all the required re-alignment that is necessary under ordinary conditions encountered where coil or wiring changes in the short-wave section of the receiver are not involved.

Adjustment of the individual bands is provided by adjustment of the movable cores of the oscillator coils indicated by the symbols T7, T8, T9, T10 and T11. The need for individual stage adjustment will occur whenever servicing of the receiver necessitates replacement of an oscillator coil, band switch section or wiring directly associated with the oscillator coils of the short-wave bands.

The most satisfactory method of aligning and checking the spread-band ranges is through the use of actual short-wave stations of known frequencies, which are turned to in a specific receiver band and deviations from calibration noted.

Aligning points for the oscillator stages at short-waves are approximately 6.1, 9.6, 11.8, 15.2 and 17.8 megacycles. Minor deviations from these points will not materially affect the accuracy of adjustment.

The alignment of the antenna and interstages (R. F.) is made for all bands at one point only. By choice, this may be either at some particular frequency in which the user is especially interested (to ensure maximum sensitivity) or at the high frequency end of any one band, to improve the calibration in that band.

Before attempting complete re-alignment, always consider whether this adjustment is necessary. Possibly the desired improvement can be achieved by a minor adjustment of C9, C7 and C5. This latter usually suffices other than when coils, condensers, wiring or switches, in the R. F. unit have been changed.

In the foregoing has been described the functions of the various spread-band adjustments. Permissible deviation (in fractional inches) from scale calibration at aligning points is shown. To provide direction on the actual adjustment, the following procedure is given:

Operation	Connect Generator	Generator Tuning *	Receiver Tuning	Dummy Antenna	Adjust	Lineal Deviation
1	Antenna	6.8 mc/s.	6.1 mc/s.	400 ohms	T7	+⅛"
2	Antenna	9.5 mc/s.	9.6 mc/s.	400 ohms	T8	+⅛"
3	Antenna	11.8 mc/s.	11.8 mc/s.	400 ohms	T9	+⅛"
4	Antenna	15.2 mc/s.	15.2 mc/s.	400 ohms	T10	+⅛"
5	Antenna	17.8 mc/s.	17.8 mc/s.	400 ohms	T11	+⅛"
6	Antenna	As required to improve sensitivity or improve calibration at any particular frequency. Recheck all foregoing adjustments.		400 ohms	C7	
7	Antenna			400 ohms		
8	Antenna			400 ohms	C5	

PHONOGRAPH OPERATION

A connection panel for phonograph (or television) attachment is provided on the rear of the chassis (refer to detail on tube location illustration). For radio use, the connecting link should be from terminals 1 and 2. For phonograph use, join terminals 2 and 3 and connect the phonograph pickup to terminals 1 and 3. If the pickup conductor is a shielded wire connect the conductor wire to terminal 1, the shield to terminal 3. Remove the phonograph connections when returning the receiver to "radio" operation. Any of the high impedance types of phonograph pickups may be used.

ALIGNMENT DATA FOR ROGERS-14/76, 14/86, 14/96 14/107. MAJESTIC-976, 986, 996, 9107 DE FOREST-BILTMORE, EMBASSY, STATLER, PARK LANE, WALDORF.

ROGERS MAJESTIC DATA SHEET 60