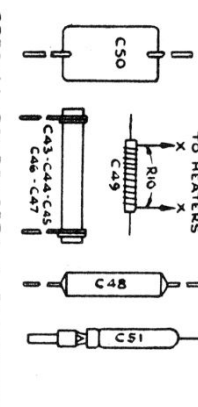
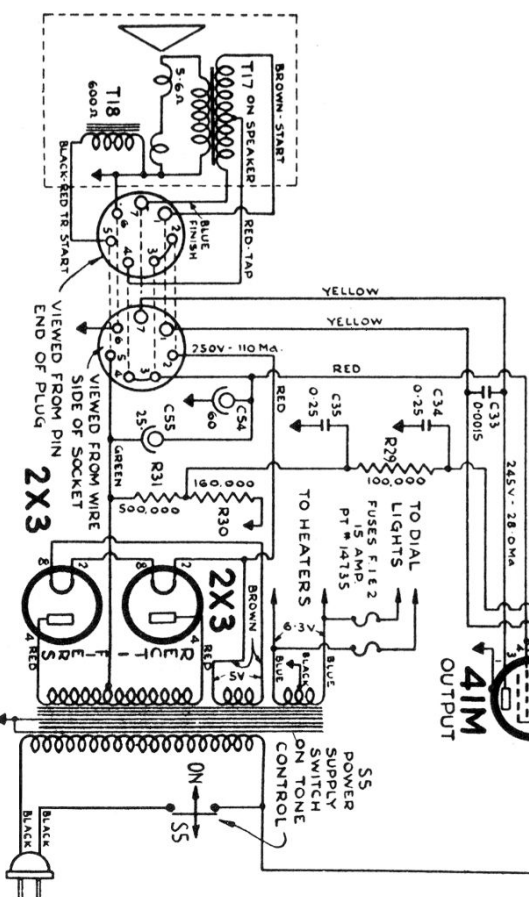
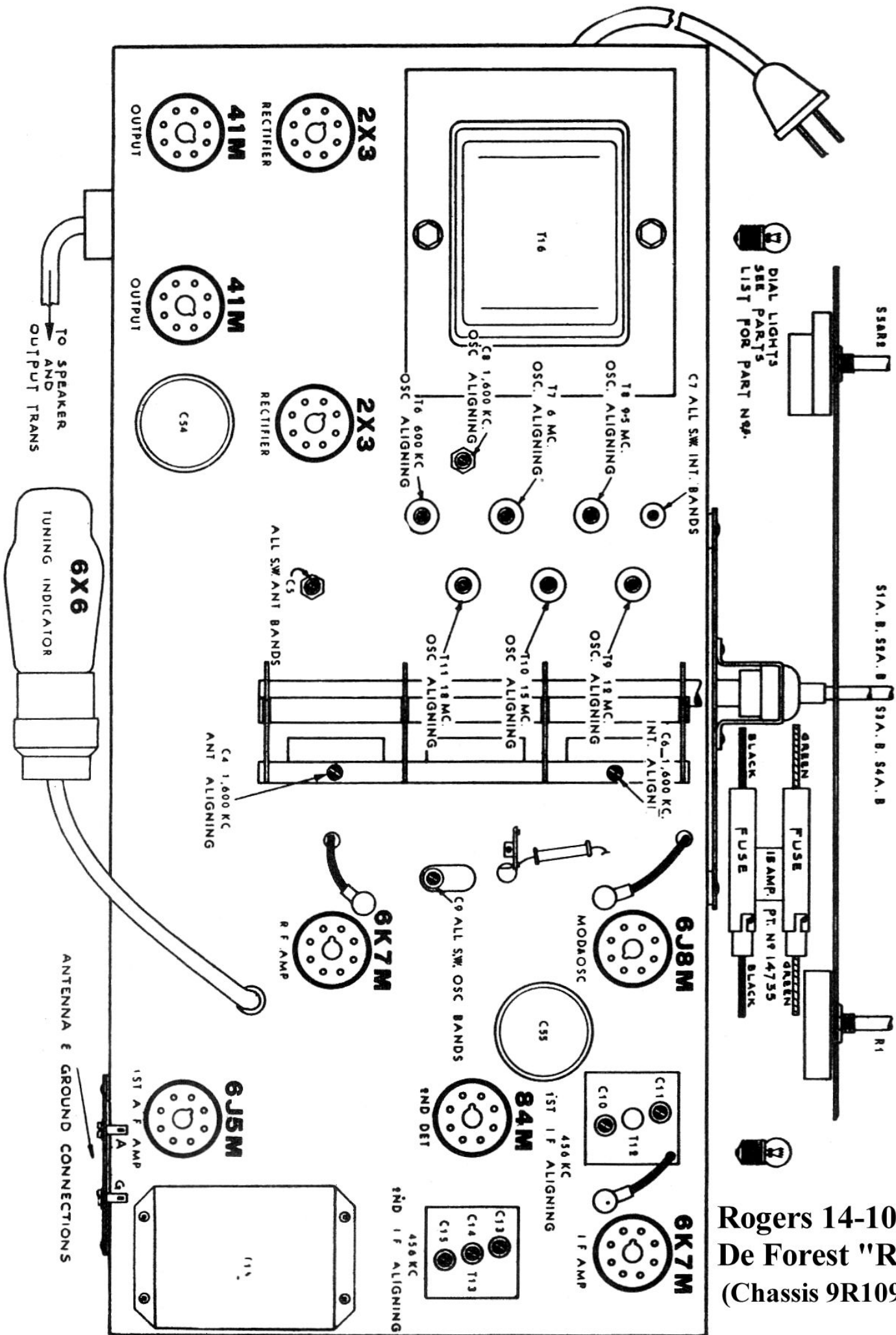


C13-456	K C.	2 ²⁹	I.F. ALIGNING
C14-456	"	"	"
C15-456	"	"	"



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





Rogers 14-106
De Forest "Ritz"
(Chassis 9R1092)

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 kilocycles 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 Minimum inductance occurs when the core is withdrawn from the coil to the maximum point at which the signal can be tuned.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

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 operating 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 to the outside of the coil form as necessary to provide proper peaking. This point is very important.

Of the eight adjustments provided for the short-wave channels, three (identified by the symbols C5, C7 and C9 of the chassis illustration) affect simultaneously all the short-wave bands.

Adjustment of C9 is for the purpose of correcting logging and in practice it will be found that this is best done by setting the dial pointer to the mid-point of the 18 mc. scale, adjusting C9 to some arbitrary value (about half capacity) then adjusting the logging of each of the short-wave bands by means of the movable cores T7, T8, T9, etc. Return the set to the 18 mc. band and adjust the antenna (C5) and interstage (C7) for maximum sensitivity.

Re-adjustment of C9 (and C5, C7) will be necessary whenever circuit characteristics are altered, such as by the replacement of a tube.

Re-adjustment of the movable cores of the oscillator coils T7, T8, T9, T10 and T11 will be required whenever servicing of the receiver necessitates replacement of an oscillator coil, band switch section or wiring associated with the oscillator circuit.

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 tuned 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 band in which the user is especially interested (to ensure maximum sensitivity) but preferably on the 18 mc. band. This automatically provides maximum sensitivity in the middle of all the other short-wave bands.

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, condenser, wiring or switches, in the R. F. unit have been changed.

Operation	Connect Generator	Generator Tuning*	Receiver Tuning	Dummy Antenna	Adjust	Lineal Deviation
1	Antenna	17.8 mc/s.	17.8 mc/s.	400 ohms	C9	+ 1/8"
2	Antenna	6.8 mc/s.	6.1 mc/s.	400 ohms	T7	+ 1/8"
3	Antenna	9.5 mc/s.	9.6 mc/s.	400 ohms	T8	+ 1/8"
4	Antenna	11.8 mc/s.	11.8 mc/s.	400 ohms	T9	+ 1/8"
5	Antenna	15.2 mc/s.	15.2 mc/s.	400 ohms	T10	+ 1/8"
6	Antenna	17.8 mc/s.	17.8 mc/s.	400 ohms	T11	+ 1/8"
7	Antenna	For maximum sensitivity in the middle of the 18 mc. band.		400 ohms	C7	
8	Antenna			400 ohms	C5	