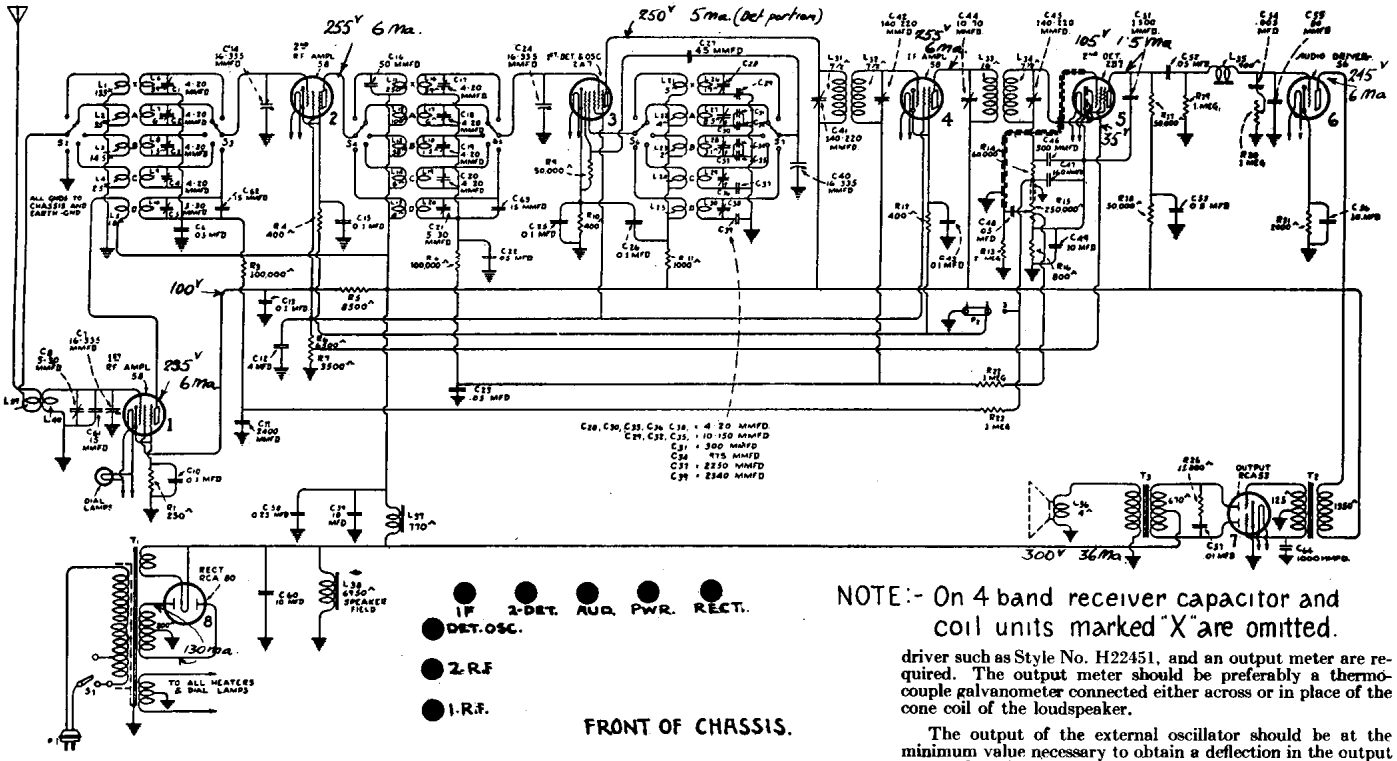
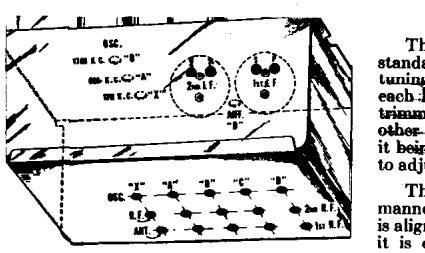
Model 83 "All Wave" 1933-34 IF-445 K.C.





NOTE:- On 4 band receiver capacitor and coil units marked "X" are omitted.

Figure D—Location of line-up capacitors.

Line-Up Capacitor Adjustments

This receiver is aligned in a similar manner to that of a standard broadcast band receiver. That is, the three main tuning capacitors are aligned by means of three trimmers in each band and on the three lowest frequency bands a series trimmer is adjusted for aligning the oscillator circuit. The other two bands do not require this low frequency trimmer, it being fixed in value. In the case of band D, it is necessary to adjust four trimmers due to the additional R. F. stage used.

The intermediate frequency amplifier is aligned in a similar manner to that of standard broadcast receivers except that it is aligned at 445 K. C. In order to properly align the receiver, it is essential that the Stock No. 9050 Test Oscillator be used. This oscillator covers the frequencies of 150 K. C. to 25,000 K. C. continuously, has good stability and includes an attenuator. In addition to the oscillator, a non-metallic screwdriver such as Style No. H22451, and an output meter are required. The output meter should be preferably a thermo-couple galvanometer connected either across or in place of the cone coil of the loudspeaker.

The output of the external oscillator should be at the minimum value necessary to obtain a deflection in the output meter when the volume control is at its maximum position.

The external oscillator output should be connected between antenna and ground for the R. F. and oscillator adjustments and between the first detector grid and ground for the I. F. adjustments. All adjustments are made for a maximum deflection in the output meter.

The accuracy of line-up of each band may be checked without touching the trimmer condensers, by the use of the tuning wand, Stock No. 6679.

One end of the wand consists of a brass cylinder. When this is inserted in a coil the effective inductance of the coil is lowered.

The other end of the wand contains a special finely divided iron suitable for use at radio frequencies. When this is inserted in a coil the inductance is raised.

To use the tuning wand a signal is first tuned in at the frequency at which a check is desired on alignment. The wand is then inserted slowly in the Antenna and R. F. transformers, using first one end and then the other end of the wand. Unless the alignment is perfect, it will be found that the power output indicated by the meter will be increased to a peak for a critical position of the wand in the coils.

The end of the wand required indicates whether the coil is high or low.

Of course, alignment correction at the high frequency end of a tuning range should be accomplished by the use of the trimmer condenser. If alignment correction should be required at the low frequency end of a tuning range it may be accomplished by sliding the end coil of the transformer. The winding farthest from the trimmer panel is pushed toward the trimmer panel to increase the inductance, and farther away to decrease the inductance. On band D coils, the last two or three turns may be pushed in a similar manner to obtain the proper inductance.

This adjustment should not be attempted unless a quite appreciable improvement will result (as shown by the tuning wand).

The following chart gives the details of all line-up adjustments. The receiver should be lined up in the order of the adjustments given on the chart. Refer to Figure D for the location of the line-up capacitors.

External Oscillator Frequency	Dial Setting	Location of Line-Up Capacitors	Position of Selector Switch	Adjust for
445 K. C.	Any setting that does not bring in station.	At rear of chassis	Any position that does not bring in station.	Maximum output.
370 K. C.	370 K. C.	Bottom of chassis	X	Maximum output.
175 K. C.	Set for signal.	Top of chassis	X	Maximum output while rocking dial back and forth
1400 K. C.	1400 K. C.	Bottom of chassis.	A	Maximum output.
600 K. C.	Set for signal.	Top of chassis.	A	Maximum output while rocking dial back and forth.
3900 K. C.	3900 K. C.	Bottom of chassis.	B	Maximum output.
1710 K. C.	Set for signal.	Top of chassis.	B	Maximum output while rocking dial back and forth.
10 M. C.	10 M. C.	Bottom of chassis.	C	Maximum output.
15 or 18 M. C.	15 or 18 M. C.	Bottom and top.	D	Maximum output. Adjust oscillator trimmer until two points are noted where signal is heard. Use for adjustment the higher frequency of these two points. This will be the point lying counter-clockwise from the other point.

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