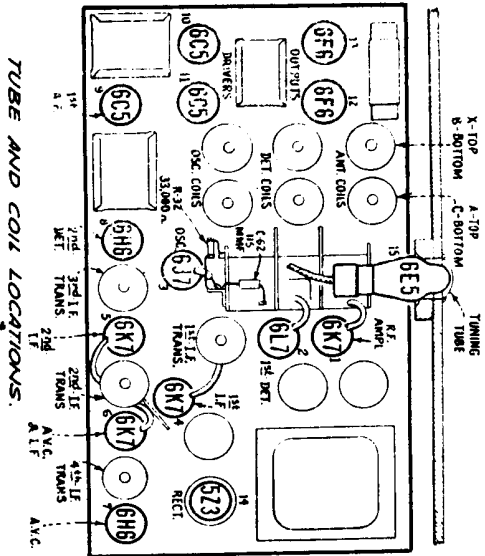
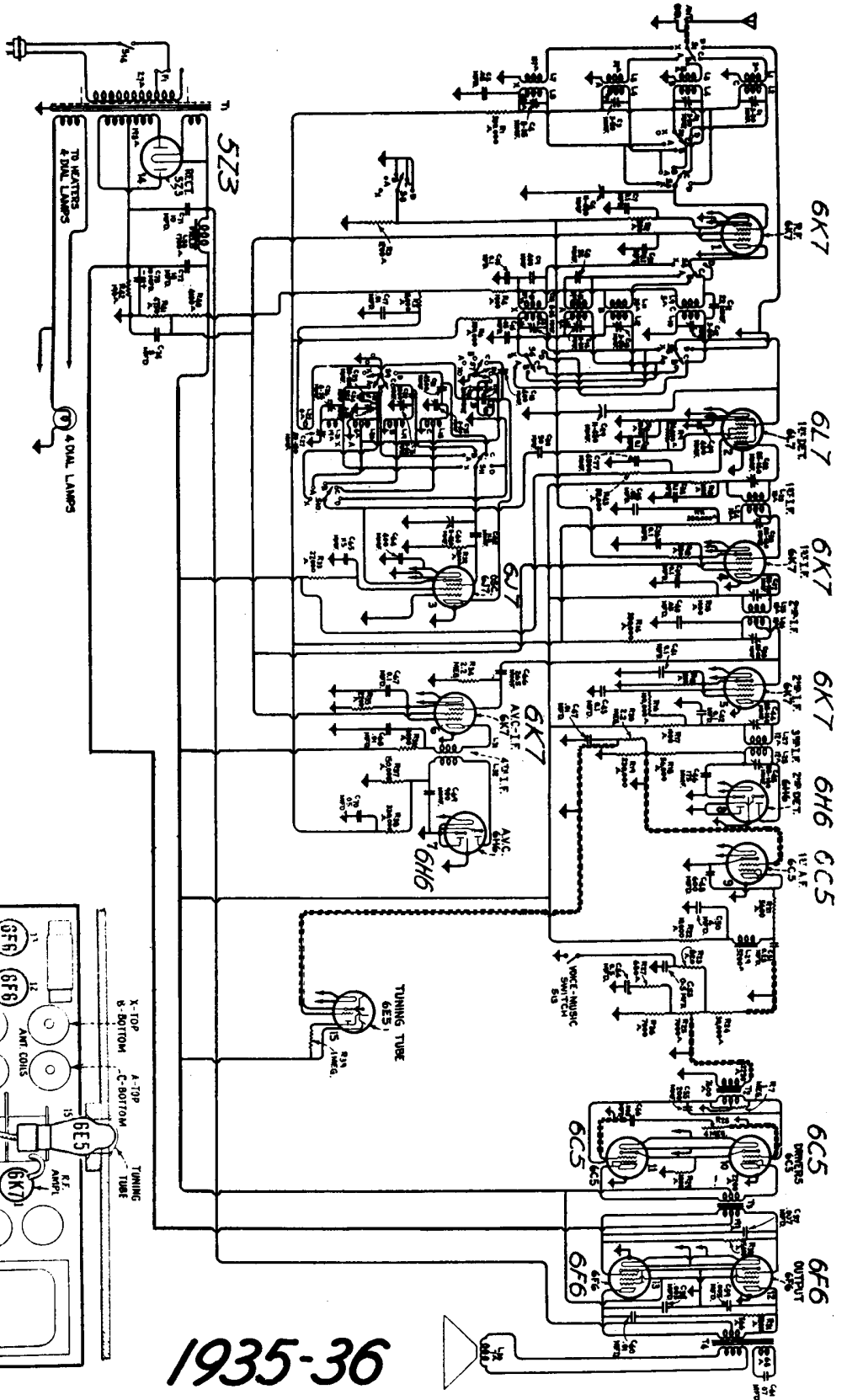


# MODEL C14-1 (GENERAL ELECTRIC A-148)

NOTE - ALIGNMENT INSTR. ETC. ON DATA SHEET -33

I.F. = 460 K.C.



1935-36

DATA SHEET

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VICTOR-32

# (GENERAL ELECTRIC. A-148)

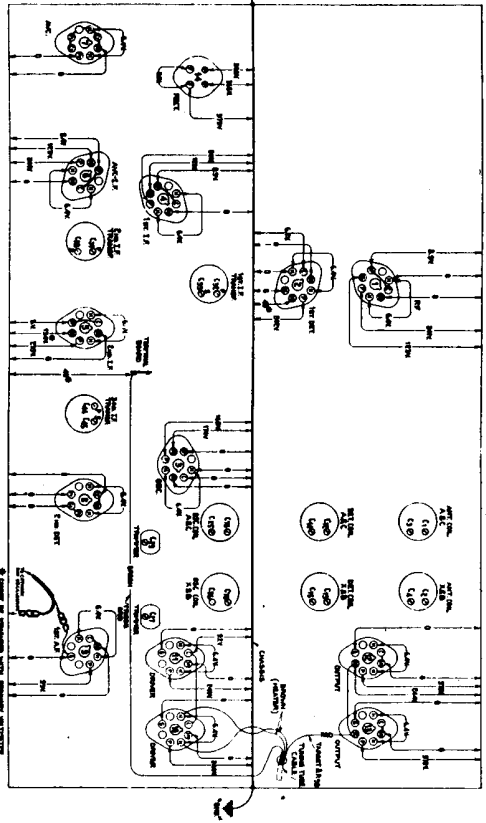


Figure 8—Trimmer Locations and Radiotron Socket Voltages

**NOTE - THE MANUFACTURER CONSIDERS THE CATHODE RAY ESSENTIAL IN ALIGNING THIS RECEIVER AND CAN SUPPLY FULL INSTRUCTIONS UPON REQUEST.**

### Alignment Procedure

The extensive frequency range of this receiver necessitates a more or less involved method of alignment. Circuits aligned by use of Cathode-Ray equipment will be as near to perfection as possible, hence this method is to be preferred in all cases. Alignment by other methods is oftentimes an approximation unless extreme care is taken and a good deal of time expended.

The necessity for alignment and direction of required change may be tested with the Tuning Wand. Its use is as follows:—

The Tuning Wand, which consists of a bakelite rod having a small brass cylinder inserted at one end and a core of finely divided iron at the other, may be inserted into a tuned coil to obtain an indication of the tuning. With a signal being supplied to the receiver at the particular frequency of the circuit concerned, each end of the Wand should be placed through the center of the coil. Holes are provided in the coil shields for this test. A change in tuning will be produced by the presence of the brass cylinder or iron core and consequent change of receiver output occurs. If there is a decrease of output when either of the two ends is inserted, the tuning is correct and will require no adjustment. However, should there be an increase of output due to the iron core and decrease with the brass cylinder, an increase in inductance or capacitance is indicated as necessary to bring the circuit into line. The trimmer involved should

therefore be increased accordingly. If the brass cylinder end causes an increase in output, while the iron end causes a decrease, reduction of inductance will be necessary to bring the circuit into alignment. This will be equivalent to decreasing the trimmer concerned.

### IF TRIMMER ADJUSTMENT

Six trimmers are associated with the three i-f transformers. Their locations on the chassis are shown by Figure 8. Each must be aligned to a basic frequency of 440 kc. The last i-f transformer should be adjusted first, the one preceding it second and the operation carried through successive stages until the first transformer has been aligned. For such a process, it is necessary to feed the output of the Full Range Oscillator to the stages in their order of alignment, adjusting the trimmers of each and observing the effect at the second detector output on the Cathode-Ray Oscillograph. The most convenient point for connection of the Oscillograph is at the control grid of the Type-6C5 first audio tube, with the vertical "Hi" input terminal attached to the grid connection and the "Gnd" to the chassis. The "Ext. Sync" terminals of the Oscillograph should be connected to the Frequency Modulator as illustrated in Figure 7. A .001 mfd. capacitor installed in series with the Oscillator "Ant." output lead will prevent the voltage constants of the stage being aligned from becoming upset.

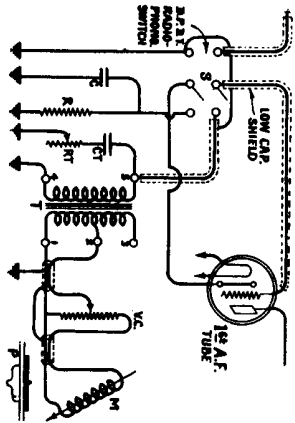


FIG. 10. General Phonograph Connections

### ANTENNA, DETECTOR AND OSCILLATOR

For Bands A and X, adjustments must be made at the high and low frequency ends of the range. On Bands B and C, alignment is required only at the high frequency end. Band D is permanently adjusted during manufacture, hence no alignment will be necessary in this range. Locations of the various antenna, detector and oscillator trimmers are shown on Figure 8. The test Oscillator should be removed from connection with

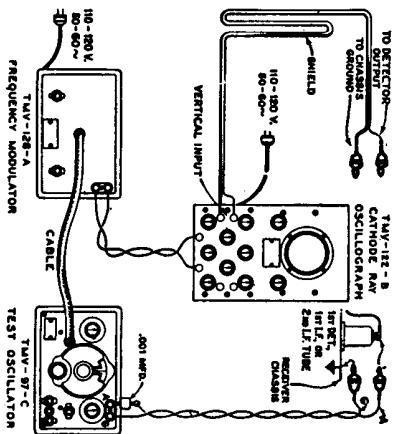


FIG. 7. Alignment Apparatus Connections

the i-f terminals and its output attached to the antenna-ground terminals of the receiver. No changes are to be made in the attachment of the Oscillograph at the second detector. During the adjustments, the Oscillator output should be regulated as often as is necessary to keep the oscillographic image as low as is practically observable. Such procedure will obviate apparent broadness of tuning which would result from a.v.c. action on a stronger signal. The sequence of alignment should be Band A, Band X, Band B and Band C.

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