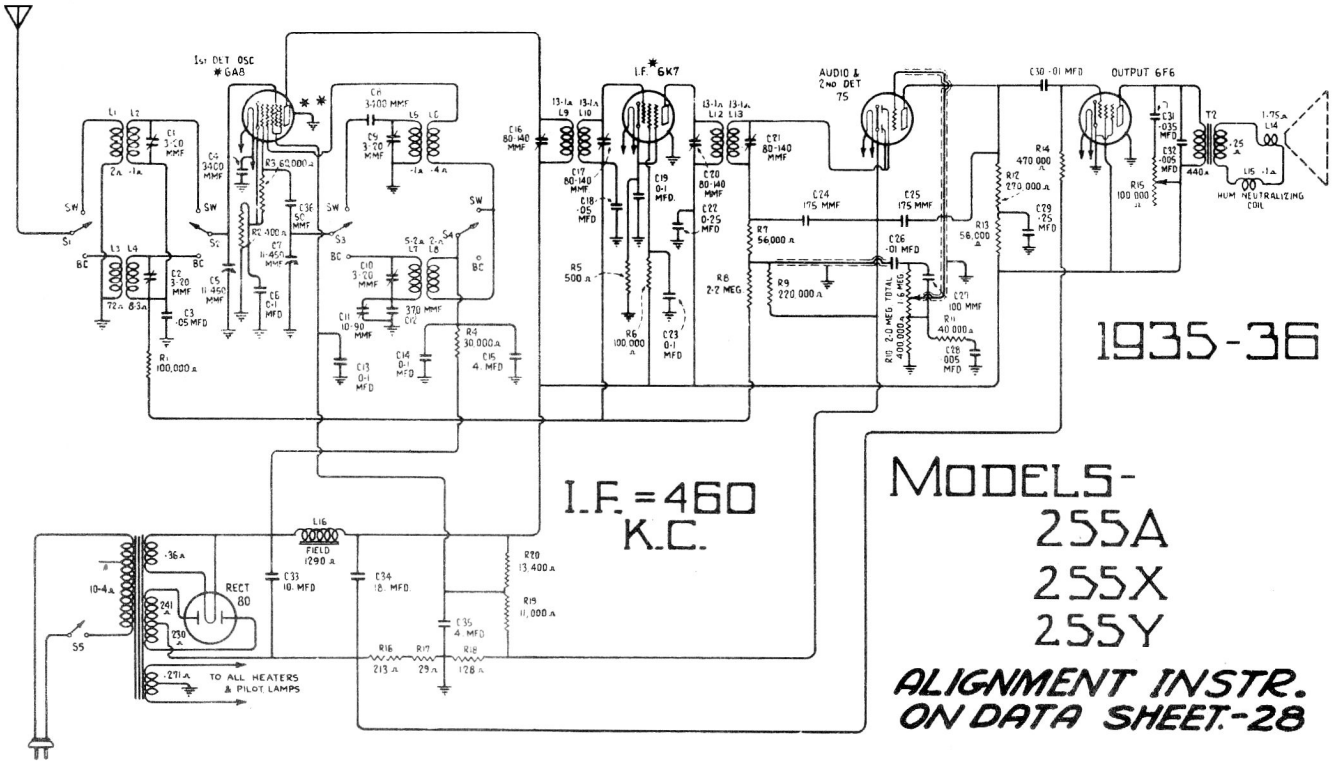
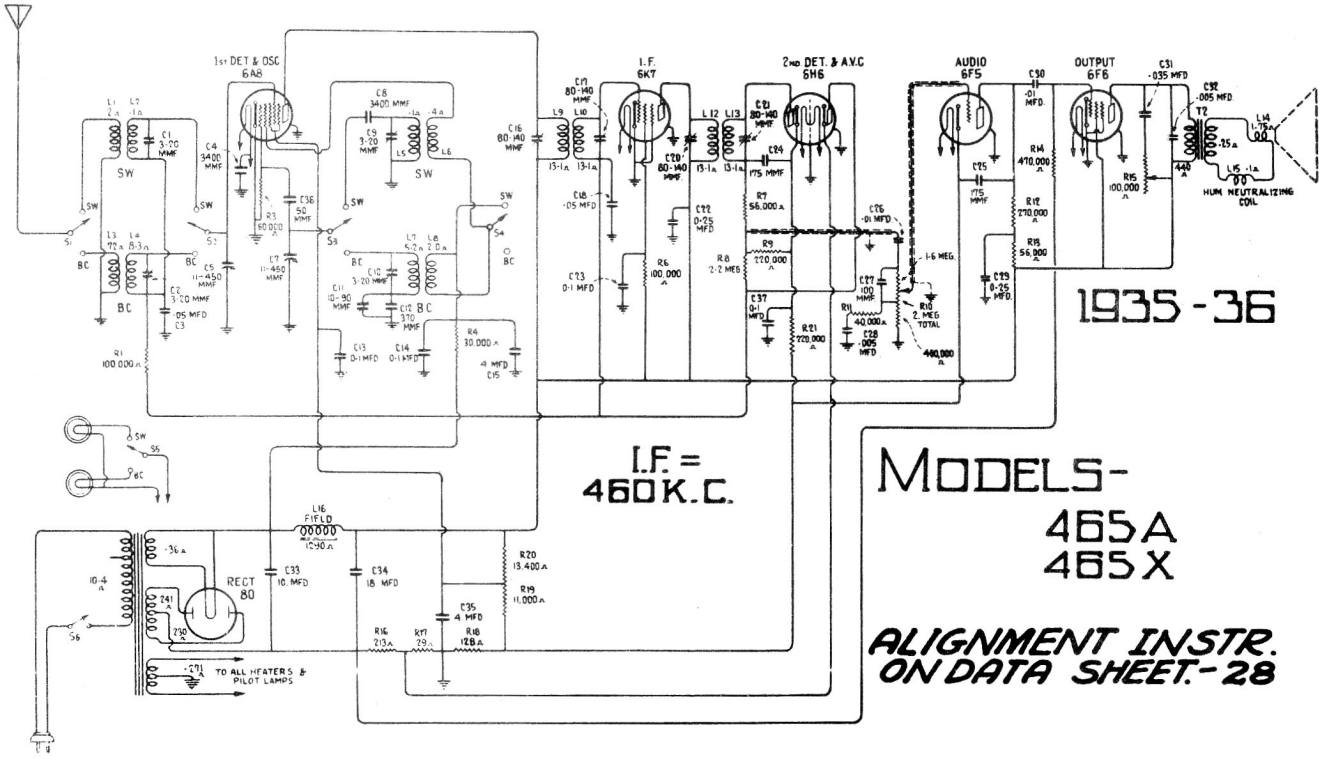


W255 Schematic Circuit Diagram

*On some chassis W-6A7 and W-78 are used instead of W-6A8 and W-6K7 respectively.

**On early production pin No. 1 of 6A8 was connected to cathode instead of ground.



W465 Schematic Circuit Diagram

*On a very few sets W-6A7 and W-78 are used instead of W-6A8 and W-6K7 respectively.

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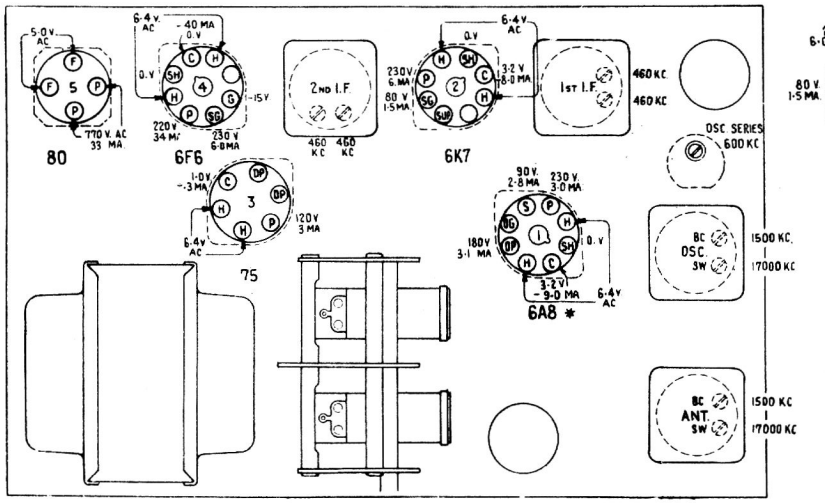
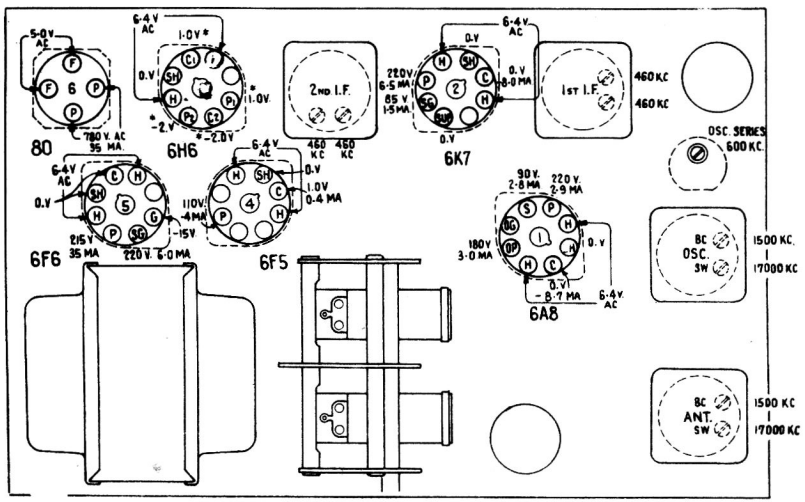
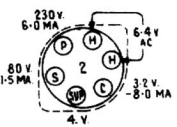


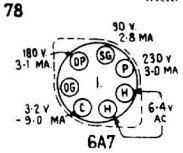
W255 Radiotron Socket Readings and Trimmer Condensers (1934)

ALIGNMENT INST. FOR MODELS 255A 255X, 255Y, 465A, 465X



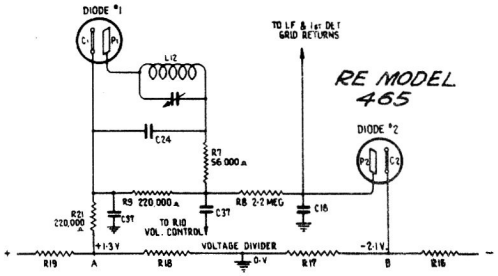
W465 Radiotron Socket Readings and Trimmer Condensers





On some W-255A receivers, a W-6A7 and a W-78 were used in place of the W-6A8 and W-6K7 respectively. In this case, reference should be made to 78 and 6A7 sockets illustrated herewith.

RE MODEL W-255A



Detail of Second Detector and A.V.C. Circuit

Checking with Tuning Wand—

Before making any R.F. oscillator or first detector adjustments, the accuracy of the existing adjustments may be checked with a tuning wand (Stock No. 6679). This wand consists of a bakelite rod having a brass cylinder at one end and a special finely divided iron insert at the other end. Inserting the cylinder into the center of a coil lowers its inductance, while inserting the iron end increases its inductance. From this, it is seen that unless the trimmer for a particular coil is properly aligned, the wand may increase the output of the receiver. A perfect adjustment is evidenced by a lowering of output when either end of the wand is inserted into a coil.

The shield over each R.F. coil assembly has a hole at its top for entrance of the tuning wand.

I.F.

Although this receiver has one I.F. stage, there are two transformers, each having two adjustable capacitors requiring adjustments. The transformers are all peaked, being tuned to 460 K.C.

A detailed procedure for making this adjustment follows:

(a) Connect the output of an external oscillator operating at 460 K.C. between the first detector grid and ground. Connect the output indicator across the voice coil of the loudspeaker.

(b) Place the receiver in operation and adjust the station selector until a point is reached where no signals are heard and turn the volume control to its maximum position. Reduce the oscillator output until a slight indication is obtained in the receiver output indicator.

(c) Refer to Figure 4. Adjust the trimmers of the I.F. transformers until a maximum output is obtained. Go over the adjustments a second time.

This completes the I.F. adjustments. It is good practice to follow the I.F. adjustments with the R.F. and oscillator adjustments due to interlocking which always occurs between the two.

R.F.

Three oscillator and first detector adjustments are required in range "BC". Two are required in range "SW".

To properly align the two ranges, each must be aligned individually in the order given. The preliminary set-up requires that the external oscillator be connected between the antenna and ground terminals of the receiver and the output indicator be connected across the voice coil of the loudspeaker. The volume control must be at its maximum position and the output of the oscillator must be at the minimum value possible to get an output indication under these conditions. In the high frequency bands, it may be necessary to disconnect the oscillator from the receiver and place it at a distance in order to get a sufficiently low input to the receiver.

The dial pointer must be properly set before starting actual adjustments. This is done by turning the variable capacitor until it is at its maximum capacity position. One end of the pointer should point exactly at the horizontal line at the low frequency end of band "BC", while the other end should point to within $\frac{1}{64}$-inch of the horizontal line at the high frequency end of band "BC".

Figure 4 shows the location of the trimmers for each band. Care must be exercised to only adjust the trimmers in the band under test.

RANGE "BC"—

(a) Set the tuning range switch at "BC".

(b) Tune the external oscillator to 1,500 K.C., set the pointer at 1,500 K.C. and adjust the oscillator and detector trimmers for maximum output.

(c) Shift the external oscillator frequency to 600 K.C. Tune in the 600 K.C. signal, irrespective of scale calibration, and adjust the series trimmer for maximum output, at ten same time rocking the variable tuning capacitor. Then readjust at 1,500 K.C. as described in (b).

RANGE "SW"—

(a) Set the tuning range switch at "SW".

(b) Tune the external oscillator to 17,000 K.C., and set the pointer at 17M. Adjust the oscillator trimmer for maximum output. The trimmer should be set at the first peak obtained when increasing the trimmer capacitor from minimum to maximum.

(c) Check for the image signal, which will be received at approximately 16,080 on the dial, if (b) has been properly done. It may be necessary to increase the external oscillator output for this check.

(d) Retune the receiver to the oscillator, leaving the oscillator set at 17,000 K.C. Adjust the antenna (detector) short wave trimmer for maximum output.