

RADIO SERVICE BULLETIN

THOMAS A. EDISON, INC.

Radio Division

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S G-1

METHOD OF COMPENSATING AND ADJUSTING R.F. STAGES OF EDISON LIGHT-O-MATIC SCREEN GRID RADIOS, MODEL R-6 AND R-7.

1. SUBJECT MATTER

This bulletin has been compiled in response to inquiries which have been directed to the Radio Service Department concerning the selectivity and sensitivity of the Edison Light-O-Matic Screen Grid Radios. Where servicemen have reported from the field that the performance of the radios were below expectations it has been found that this impression was invariably due to improper adjustment of R.F. compensators.

First of all it should be remembered that due to a special circuit design in the pre-selector unit, which in itself affords desirable advantages in performance, the antenna stage is somewhat critical to antenna variations. THIS BEING THE CASE, WHEN THE RADIO IS INSTALLED ON CUSTOMER'S PREMISES, THE FIRST COMPENSATING CONDENSER SHOULD BE ADJUSTED FOR MAXIMUM VOLUME, ON A STATION OR SIGNAL BETWEEN 1400 AND 1500 KC.

If, after adjusting the antenna compensator, the volume level is below normal then all compensators should be adjusted in accordance with the method outlined below.

Instructions are also given for setting the low frequency shunting condensers in the fourth and fifth R.F. stages, as well as the coupling condenser in the Detector Filter Unit.

When dealing with radio receivers having a large number of tuned R.F. stages such as the Edison Light-O-Matic Screen Grid Radio it is sometimes difficult to line up the stages for optimum results when following the commonly accepted procedure.

2. COMPENSATING R.F. STAGES

If the following instructions are closely carried out, the operation of compensating can be quickly and precisely accomplished.

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Using a signal, either from an oscillator or a broadcasting station, at 1500 kilocycles feed this into the control grid of the first R.F. tube. For this purpose a small clip attached to the end of an antenna lead-in wire can be used for attaching to the control grid terminal, without removing the tube shield can. However the cover of this can may be left off if desired. A ground wire should be connected to ground binding post. With the scale dial set at 1500 adjust the fourth and fifth compensators (as indicated in fig. 1) for maximum volume. Then without disturbing the dial scale setting, shift antenna clip from the grid of the first R.F. tube to the antenna binding post and then adjust the first, second and third compensators for maximum results. Referring to figure 1 attached to this bulletin, the compensators of the three gang condenser are numbered one, two and three and the compensators of the two gang condenser are designated as four and five. If a signal at 1500 is not available, one between 1400 and 1500 may be used.

To make access to the compensators easier, the tube cans of the first and second audio as well as the detector tubes may be left off without, in any way, affecting the final results. For this adjustment a screw driver with long shank and narrow blade should be employed.

3. LOW FREQUENCY PRIMARY SHUNTING CONDENSERS

Reference to the schematic circuit for receiver unit and power unit for Edison Screen Grid Radio Receivers - Models R-6 and R-7, Section 3 of the Service Manual will show that the fourth and fifth R.F. Coils have a double primary arrangement. The low frequency primaries L-8 and L-11 are shunted with two variable condensers C-43 and C-45 respectively. These condensers have been adjusted so as to resonate the coils which they tune, to an approximate frequency of 410 kilocycles. The purpose of this arrangement is to offset the tendency of the receiver to fall off in sensitivity at low frequency end of the scale. Based on numerous observations made at our laboratory we have found that the following method for adjusting these two low frequency primary coil condensers is accurate and at the same time affords an easy means to make adjustments in the field.

Turn the adjustment screw of each compensator to the right as far as it will go, which is the position of maximum capacity. Then back out screw three complete turns and a half turn. This will give results which for all practical purposes are just as accurate as when an oscillator is used.

Referring to plate #2, Section 3 of the Service Manual, Figure #1-A shows how the coupling condenser C-13 is connected in the circuit. So as to afford a transfer of energy from the third R.F. stage to the detector stage, which is substantially uniform at all frequencies this condenser is adjusted so as to give a resonant indication of 575 kilocycles. The method for tuning this condenser is as follows: Feed a signal from an oscillator at 575 kilocycles into the control grid of the third R.F. tube. For the purpose of attaching the pickup wire to the control grid terminal a small clip should be used. The coupling condenser C-13 is then adjusted so that an output meter connected in the usual manner indicates maximum signal. It is very essential that this condenser be set in this manner so as to avoid resonant peaks.

ALBERT LORCH,

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EDISON LIGHT-O-MATIC SCREEN-GRID RADIOS
MODELS R6 & R7

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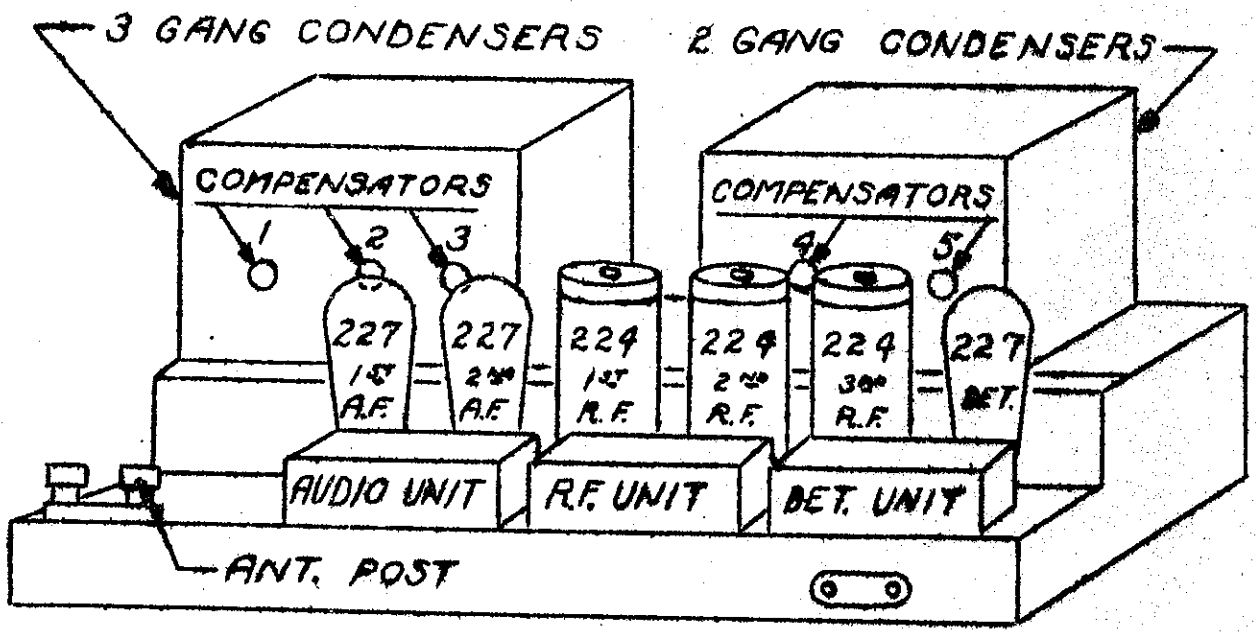


FIG. 1

SHOWING COMPENSATORS AND TUBE LOCATIONS