

FM Tuning Indicator

L. B. KEIM

Features of a new indicator tube for FM receivers.

AS the FM band continues to gain in popularity and widens in the offering of its program coverage, an increased use of these static-free facilities will be made not only by the listening public, but also for recording studios, transcriptions of programs and tape recordings for future use. Such services require that no distortion at all be present in the signal source, consequently an accu-

rately tuned receiver is the answer.

Appearance on the market of such precise tuners as the Browning RV-10 FM tuner, or RJ-12A FM/AM tuner, possessing tremendous gain ahead of the audio-restoring stages, precludes the employment of the familiar 6U5 tuning eye, connected so as to indicate the maximum limiter current, as a means of resonance indication. For the amount of voltage de-

veloped across the limiter grid resistor is often so great as to overlap the tuning eye. Hence, it is impossible to find the exact center of the carrier excursion during modulation. It can also be shown that a slight misalignment of the intermediate frequency channel will lead to a false tuning point, and consequent audio distortion, especially when a high percentage modulation signal is being received.

the upper right beam is adjusted for zero direct current voltage occurring across the discriminator loading resistors. Consequently, to obtain perfect tuning of the set, the lower half of the beam should rise as far as possible while the line across the upper segment should be a horizontal line. Tuning through a few stations will soon familiarize the user with the ac-

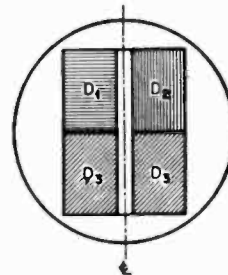


Fig. 3. Target of 6AL7GT.

tion of the eye.

To understand the action of the 6AL7-GT in tuning a station accurately, refer to *Fig. 3*. The target of this tube is a translucent screen, of two vertical columns. The lower half of both columns is connected to the limiter circuit, so that as the a-v-c voltage increases, this will cause a shortening of the beam. This action aids in locating stations easily. However, the upper left-half of the beam remains at ground potential at all times, as a reference point to which

It may happen, in those locations where signals are strong, that there will be so much limiter current flowing as to practically extinguish the beam on the tube. This can be corrected easily by using a voltage-dividing network across the a-v-c line, comprising two 2-megohm, $\frac{1}{2}$ -watt resistors in series, with the deflection electrode connected at the midpoint of the resistor network. Such a load will in no matter interfere with the a-v-c action of the receiver.

The installation of this new indicator will well repay the effort and cost involved, as it assures the perfect tuning of your F.M. tuner.

While some users may well prefer to install expensive meters for tuning, the device described serves as well.

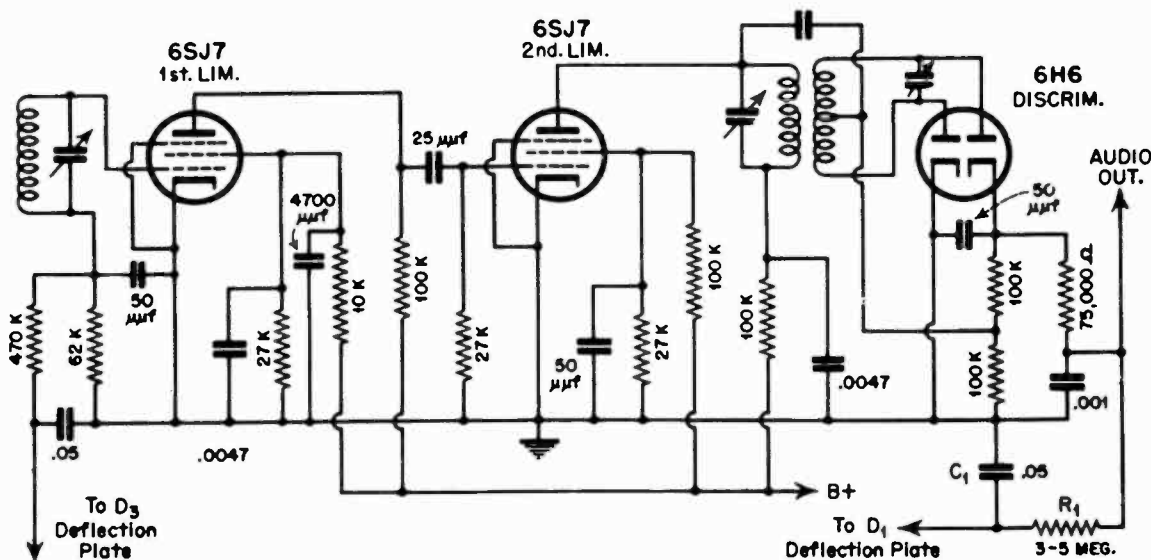


Fig. 2. Limiter and discriminator stages of typical FM tuner.