

ALIGNMENT AID FOR V.H.F.

A SIMPLE, effective alignment indicator for receivers using superregenerative second detectors, such as those described recently in *QST*,¹ consists of a 0-100 microamp. meter in series with a 0.1-megohm resistor, connected as shown in Fig. 2.

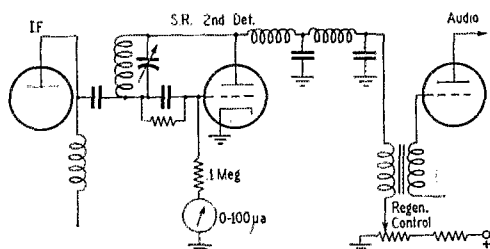


Fig. 2 — A simple alignment indicating circuit for use with superregenerative second detectors. By changing the values as described in the text, the same set-up may be used for field-strength measurements.

With this set-up, with the regeneration control turned fully off, the detector tube acts as a diode rectifier. It is not necessary to by-pass the plate to ground, because at the frequencies where these detectors are usually operated (10 Mc. or higher) the stray circuit-and-tube capacitance is usually sufficient.

With this device, and very loose coupling of the mixer grid to a signal generator, a reading of 50 to 100 microamperes is easily obtained. The i.f. and mixer stages can then be trimmed to obtain top performance.

If desired, the circuit may be used for field-strength measurements by increasing its sensitivity. In this use, the resistor should be 0.5 megohm, and the meter 0-30 microamperes.

— *Erich Kohout, HB9AT*

SERVICING XTAL FILTERS IN THE BC-348

LACK of ventilation in BC-348 receivers that have been converted for a.c. operation with built-in power supply sometimes leads to failure of the crystal-filter section. Excessive heat from the power supply melts the gummy substance covering the three-section crystal holder, causing it to seep into the holder and deposit on the crystal and the electrodes.

The remedy was found to be quite simple and easily performed. The crystal and its holder, which are directly behind the crystal switch, should be removed and taken apart. Clean the crystal, and all parts of the holder, by scrubbing with warm

¹ "Mobile Receiving Equipment for Two, Six and Ten Meters," Tilton, *QST*, September, 1946, p. 28. "An Improved Receiver for Two Meters," Hadlock, *QST*, March, 1947, p. 35.

water and soap. Rinse and dry thoroughly, being careful to avoid touching the crystal with anything that will leave dirt or grease on it. Reassemble the crystal in the holder, seal all seams with Duco household cement, and wire it back into the circuit. Results are surprisingly good.

— *Herbert K. Armistead, W4WM*

NEON-BULB PROTECTOR

DOZENS of neon bulbs are tossed into the ash can because they rolled off the bench and smashed on the floor. A simple way to avoid this is to wind a piece of insulated hook-up wire around the base once or twice, give it a twist, and cut off the ends, leaving about an inch of each end of the wire sticking out. These short tabs will prevent the bulb from rolling, and will keep it on the bench where it belongs.

— *H. A. Fanckboner, W9BPS*

BALANCING PHASE-INVERTER CIRCUITS

THE arrangement shown in Fig. 3 provides a simple yet effective means of balancing phase-inverter circuits. It requires little equipment, and is perhaps more accurate than other more involved methods.

The primary of a plate transformer is temporarily connected in the B+ lead to the center-tap of the output transformer. Headphones are

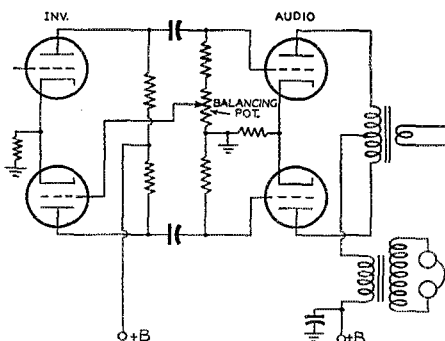


Fig. 3 — Arrangement used for balancing phase-inverter circuits without the use of elaborate test equipment.

connected across the secondary as shown. Signal input is then applied to the phase inverter, and the balancing potentiometer is adjusted until minimum signal, mostly distortion products, is heard in the 'phones. This point is very critical, and indicates balance of the inverter circuit. Slight variations introduced when replacing tubes can be offset by readjustment using the same method. — *H. G. Brower, ex-W2FQP*