

Bandspread on the R107

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THE R.107⁽¹⁾, although quite useful as a general purpose receiver for amateur use, has several serious disadvantages, the most obvious being lack of bandspread. Probably the simplest solution (short of actually replacing the slow-motion drive) is to fit an extra scale to the slow-motion tuning knob; this provides adequate bandspread without altering the receiver calibration, and is equally useful on all bands.

The additional scale cannot be calibrated directly in frequency, since the amount of spread differs on each band. It should be marked off at 5-degree intervals (or even degree intervals if desired, though this is unnecessarily fine). Scale reading should increase in a clockwise direction. A vernier scale is unnecessary.

Modification

After removing the slow-motion tuning knob, the bandspread scale (which should be about 2½-in. in diameter) may be fitted in the manner of a skirt, using the three 6 B.A. tapped holes already present. It will be found that the knob cannot be replaced, since, due to the fact that the centre knob was originally recessed into the outer (annular) tuning control and is now displaced by the bandspread scale, the driving shaft is too short to be engaged by the grub screw.

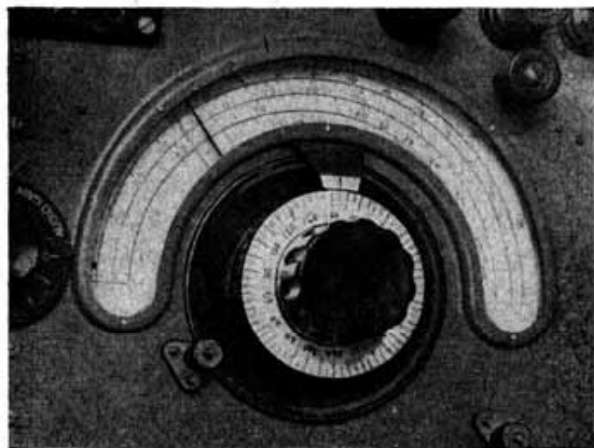


Fig. 1.
Photograph of the modified receiver, showing the bandspread scale in position.

This difficulty may be overcome either by removing about ¼-in. from the back of the knob on a lathe, or by soldering a brass collar to the back of the scale so that the original fixing screws are no longer required. To ensure that the collar is accurately centred, a length of ¼-in. diameter rod should be inserted in the collar and knob during soldering. A slot must be cut in the outer knob so that a screwdriver can be inserted to tighten the fixing screw in the collar which, being mounted behind the scale, is otherwise inaccessible.

The cursor

The cursor, made from sheet brass, is bolted to the front panel at a point behind the skirt of the outer knob, which is thus left free to rotate. The hair-line should coincide with the highest point (or "top dead centre") of the scale (Fig. 1). The shape and measurements are given in Fig. 2. Two fixing holes are drilled to clear 6 B.A., the hairline AB is

scored and stained, and the edge is carefully filed to fit the rim of the scale. After cutting out, the plate is bent as indicated, and is then ready for fitting to the receiver.

Before drilling the fixing holes in the front panel of the receiver, the r.f. unit must first be removed by disconnecting the wires from the three aerial terminals, removing the dial lights and knobs, disconnecting the wires at the back (including the r.f. lead); and finally removing the four fixing screws. After drilling, the cursor can be bolted in position, and the receiver reassembled.

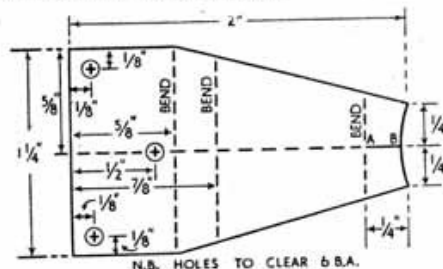


Fig. 2.
Diagram of cursor, showing dimensions and method of construction.

Although there is slight backlash in the tuning drive, the modification greatly facilitates the location of weak stations. As an indication of the degree of bandspread obtained, the c.w. part of the 20-metre band now occupies about three-quarters of a revolution—a scale length of almost 6 inches—enabling a single figure to be used for reference with no possible ambiguity. Other bands are, however, too wide, and two figures must be recorded (*viz.* the scale reading and the reading on the main tuning dial).

Stabilising the 807

WHEN the usual resistor of about 50 ohms is placed between the screen and the screen dropping resistance and by-pass condenser, there is a serious effect on the anode/control grid isolation which may result in the valve oscillating at the operating frequency. Experiments have shown, however, that for maximum efficiency the anti-parasitic suppressor should be not more than 10 ohms, and, provided the usual anode and control grid stoppers are used in conjunction with complete screening of the input and output circuits, this value will permit the construction of a perfectly stable p.a. G3GPL.

Bright Idea

OLD discarded valve-holders may be used for anchor positions and terminal connecting points, provided they are raised from the chassis by pillars or washers. The tops of disused 90V-1½V combined h.t.-l.t. batteries can similarly be employed. B.R.S. 12480.



A reminder of summer. The Brighton "A" Station being erected during N.F.D.

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(1) Described in "Wireless World," August, 1945.