TECHNICAL DESCRIPTION AND ALIGNMENT (6V+5Y6) PROCEDURE FOR 7-VALVE ALL-WAVE RECEIVER.

H.M.V. MODEL SB200.

Model SB200 Receiver is of the Superheterodyne type and employs a total of seven valves used in the following arrangement:

1 - type	6U7G	Signal frequency amplifier (all bands)
1 - "	6K8	Mixer- oscillator.
1 - "	6U7G	Intermediate frequency amplifier (465 K.C.).
1 - "	6Q7G	2nd Detector A.V.C. & 1st Audio amplifier.
1 - "	6F6G	Power Amplifier.
1 - "	6U5	Visual Tuning Indicator.
1 - "	5Y3G	Rectifier.

Five frequency ranges are covered by this receiver - a normal Broadcast Band and Four Short Wave bands specially spread by means of an arrangement of series condensers with the gang. The desired band is brought into action by means of the five-position wave-change switch. Otherwise the basic circuit is quite conventional with the exception of some modifications which have been added to the audio frequency part of the circuit which have been designed to ensure the maximum fidelity of tone.

As an aid in ensuring the correct alignment procedure being applied, the following notes together with the enclosed diagrams etc., should be strictly adhered to:

INTERMEDIATE FREQUENCY ALIGNMENT:- The Intermediate Frequency used in this model is 465 Kc/s and both I.F. Transformers should be adjusted for maximum output. Under no circumstances should a "staggered" adjustment be used as the gain of the whole receiver will be materially affected. The I.F. trimmers are located on the top of the I.F. transformers and the adjustment of these should be undertaken by aligning the 2nd I.F. transformer firstly. This is accomplished by connecting the lead from the signal generator to the grid of the I.F. tube (6U7G) and adjusting for maximum output. The generator lead should then be transferred to the grid of the mixer tube (6K8) and the 1st I.F. transformer treated in a similar manner. In this latter adjustment, it is important to make sure that the wave-change switch is in the "Broadcast" position with the pointer set toward the low frequence end of the scale but not tuned on any Broadcast Station. Approximately 600 K/c would be quite suitable.

SB200

SIGNAL FREQUENCY ALIGNMENT:- Adjustment of the Signal Frequency circuits, although not difficult, should be undertaken with care, particularly in the setting of the oscillator trimmers and in no case, unless the performance of the receiver is in question, should any attempt be made to disturb the factory adjustments. In all cases, the B.C. band should be treated firstly. The order of adjustment is as follows:

With an accurate signal generator set at 1400 K/c, and with the gang set so that the pointer reads exactly 1400 on the dial scale, adjust the signal to maximum, by means of the B.C. Osc. trimmer (see Fig. 2.). The signal is then further peaked by means of the Aer. and R.F. trimmers (Fig.2).

After these adjustments have been made, the receiver should be "padded" at the low frequency end of the scale by means of the B.C. Padder (see Fig. 1). For this purpose the set should be tuned to approximately 600 K/c (NOT ON A STATION) and the "air" noise or background noise peaked to maximum. (NOTE: With all these adjustments, the receiver should be connected to an antenna).

A similar procedure is undertaken with the remaining four short wave bands with the exception of "padding" which is peramently set. However, special care must be taken with the S.W. adjustments as all stages are much more critical. The oscillator trimmers for the S.W. bands are located at the back of the chassis just behind the gang condenser (see Fig. 1) and the Aer. and R.F. trimmers for each band are accessable through the slots cut in the bottom of the cabinet (see Fig. 3). Where a signal generator is used for re-calibration and peaking of the S.W. bands, care must be taken that the Aer. and R.F. trimmers are peaked to the fundamental frequency of the sig. gen. and NOT THE IMAGE. If it is found that any of these latter trimmers have TWO PEAKS, adjust accurately to the one where the trimmer concerned is the more compressed (i.e. the highest capacity). The same remarks - in regard to the avoidance of altering trimmer adjustments if the performance of the receiver is satisfactory - apply to these bands as well, and, in the event of the dial readings being appreciably out, movement of the pointer should be suspected and adjustments made accordingly. In certain cases, unequal stretching of the dial cord can produce fair discrepancies in dial reading and, in such cases the remedy is quite simple requiring only the repositioning of the pointer on the dial operating cord.

As an aid in servicing the receiver, in the event of failure in any of the components fitted, a schematic diagram of the circuit showing the value of all components used is also attached to this bulletin.

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High mounted slide with dial at spkr bdo

Fig. 1. Showing Component lay-out and Valve Positions as well as position of S.W. Oscillator trimmers.

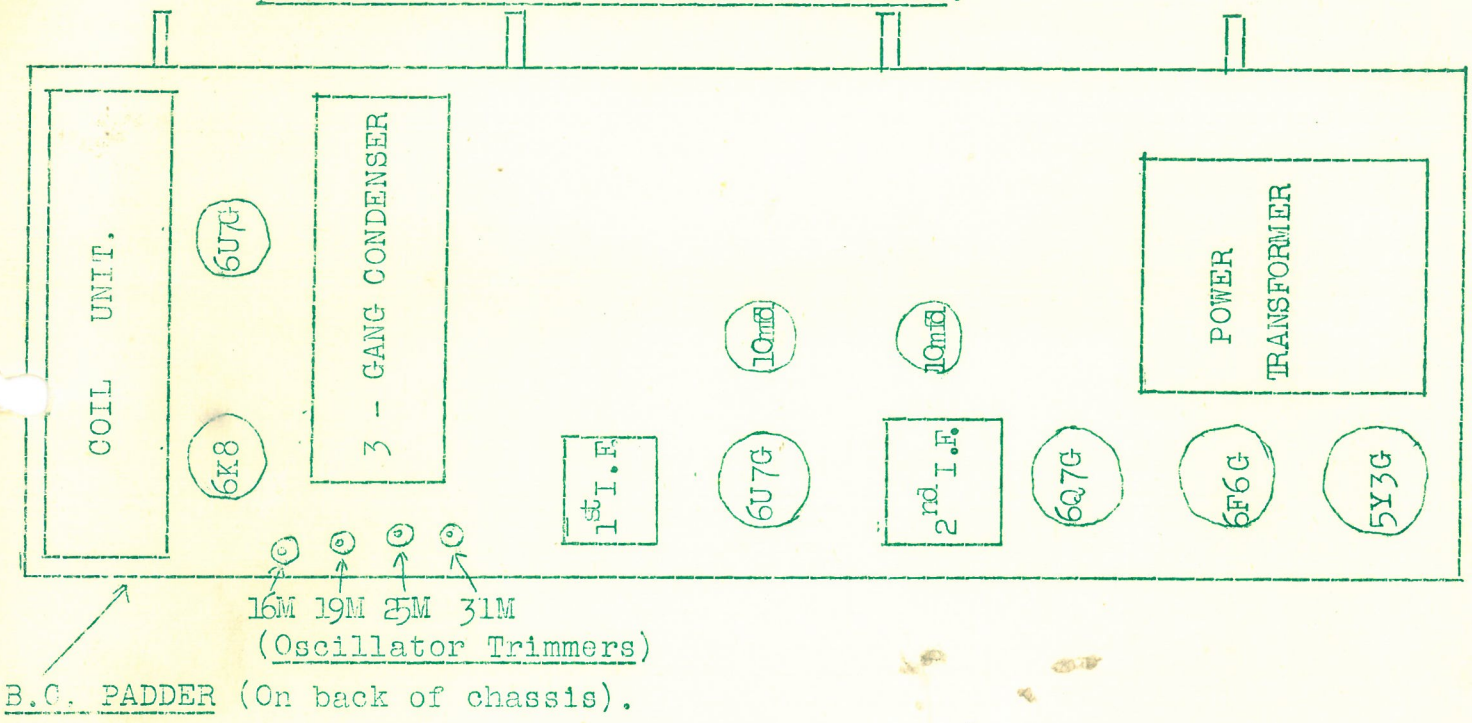
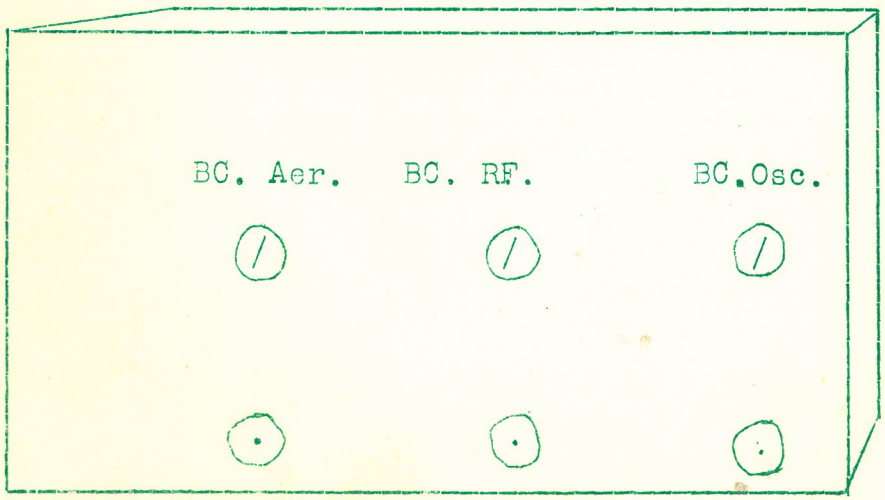


Fig. 2.- Coil Unit - Showing position of B.C. Aerial, R.F., and Osc. trimmers.



SB200

Fig. 3 - Showing Aer. and R.F. Trimmers for the S.W. bands

(Accessible through slots in bottom of cabinet)