



## VALVES :

### MULLARD TYPE.

EF.80	V1, F.M. R.F. Amplifier.
EF.80	V2, F.M. Frequency Changer.
ECH.81	V3 Frequency Changer on L. and M., I.F. Amplifier and 1st Audio Amplifier on F.M.
EF.85	V4, I.F. Amplifier.
EABC.80	V5, Detector and Audio Amplifier.
EL.84	V6, Output.
EZ.80	V7, Power Supply Rectifier.

## CONTROLS :

From left to right (front view)

TONE.

ON/OFF SWITCH and VOLUME.

TUNING.

**WAVE RANGE/GRAMOPHONE SWITCH.** This switch has four positions, three of which are used for radio reception. The fourth switch position ("G") is used to switch the gramophone pick-up into the receiver when gramophone reproduction is required.

The wave-ranges are as follows :-

L.	Long	300 Kc/s.-150 Kc/s.	1,000-2,000 metres.
M.	Medium	1,600 Kc/s.-535 Kc/s.	187-560 metres.
F.M.	Band	87.5 Mc/s.-100 Mc/s.	3.4-3 metres.

## CONNECTIONS :

**VOLTAGE RANGE :** The receiver operates on A.C. supplies only. It is adjustable for voltage from 100-120 V. and 200-250 V. at 40-100 cycles.

Serious damage to the receiver may occur if it is connected to any other supply.

When despatched from the factory the receiver is adjusted for the highest input voltage, viz. 250 volts.

Ascertain the voltage of the available electricity supply, remove the cabinet "back" and place the voltage adjusting plug in the appropriate position.

**SUPPLY CONNECTIONS :** Ensure that the cabinet back is secured firmly in position before making any connection between the receiver and the electricity supply.

**AERIAL AND EARTH :** Long and Medium Wave Reception. For Medium and Long waves, an efficient aerial and earth system should be employed for the best reception, consult your Bush Dealer as to the most suitable aerial and earth installation for your particular reception conditions.

### F.M. Band Aerial.

For reception of signals in the F.M. Band, this receiver is equipped with an internal aerial. To connect this aerial, insert the 2 pin plug, with flex attached, into the F.M. Band aerial input sockets. (Lead with plug projecting through an aperture in the cabinet back, for the F.M. Band aerial input sockets). In certain locations the internal aerial may not give adequate signal strength, in these instances a short length of wire inserted into the F.M. Band aerial sockets (upper socket) may prove satisfactory. However, if the receiver is located at some distance from the transmitter, or where noisy electrical conditions exist, an outdoor dipole aerial will be required. An additional 2 pin aerial plug is supplied with the receiver for use with either one of these external aeriels.

See accompanying diagram for connecting sockets for Medium, Long and F.M. Band aerial sockets.

**EXTENSION SPEAKER :** Sockets to which an extension speaker may be connected are situated on a panel at the rear of the receiver cabinet.

The extension speaker must be of a "permanent magnet" type and have an impedance of approximately 2.5 ohms. No additional output transformer is necessary, but to avoid loss of volume, the extension leads should be of fairly heavy gauge wire, insulated and as short as possible. The external speaker may be operated with or without the internal speaker. The latter can be disconnected by unscrewing the knurled screw by the side of the external speaker socket.

**GRAMOPHONE PICK-UP :** The pick-up sockets are situated on the left-hand side of the receiver (rear view) next to the aerial and earth sockets. A good quality pick-up should be used preferably of the "crystal type", a recommended one being the ACOS. HGP.35. A "screened" lead having the minimum possible length should be used for the pick-up connections. The inner conductor is connected to the top socket, whilst the screening, forming the outer conductor, is connected to the lower socket. The pick-up manufacturer's instructions should be observed if an alternative pick-up is used to that recommended.

The Wave Range/Gramophone Switch must be switched to position ("G") for gramophone reproduction.