

# *a new* **INDEPENDENT SIDEBAND RECEIVER**

## **... developed to British Post Office Specification**

**T**HIS new Independent Sideband Receiver type GFR 552 is designed for operation on long-distance, point-to-point, short-wave radio links forming part of the international trunk network. On independent sideband working, the GFR 552 provides facilities for the reception of two single sideband signals, each 6 kc/s wide, one above and one below the frequency of a reduced-level pilot carrier. Each sideband will accommodate either two 3 kc/s wide telephony channels, or several voice frequency telegraph channels. The GFR 552 may also be used for reception of single sideband or double sideband transmission. In the case of the second application this receiver offers two advantages: firstly, the absence of non-linear distortion which occurs in normal D.S.B. receivers when signals are subjected to selective fading conditions; and, secondly, the ability to select upper or lower sideband for demodulation, dependent upon which is freer from adjacent channel interference. The circuit and chassis layout of the GFR 552 closely follows that of the Mullard Receiver GFR 551, which was based on a British Post Office design (Receiver, Radio No. 22).

Special features of the GFR 552 include a high order of oscillator stability and freedom from cross-modulation through which cross-talk between channels or inter-modulation between wanted and unwanted signals might occur. A brief technical summary is given below. More detailed information supplied on request.

**FREQUENCY RANGE**—4-30 mc/s.

**NOISE FACTOR**—better than 7 db over the band.

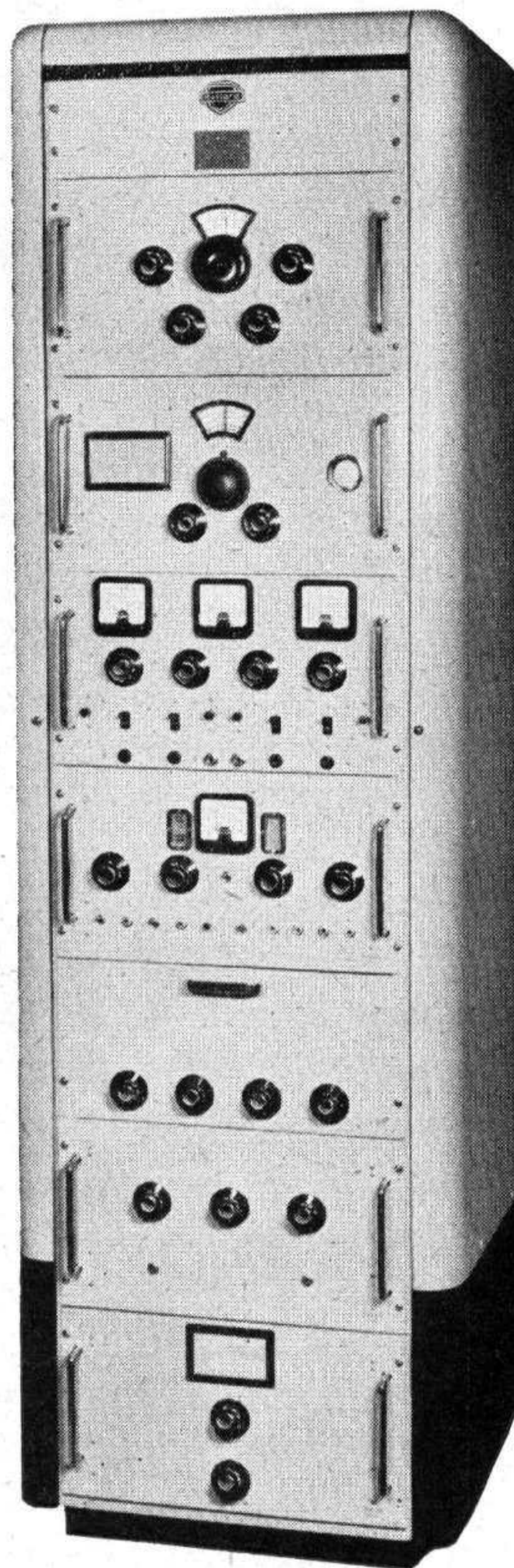
**SIGNAL TO NOISE RATIO**—25 db for 4 microvolts peak sideband input over the band.

**SELECTIVITY**—The response is flat within 2 db for sideband frequencies between 100 c/s and 6000 c/s. At 10 kc/s from the carrier frequency the response is -60 db relative to the pass band.

**A.F.C.**—The A.F.C. system operates effectively with a pilot carrier level of -26 db relative to 1 microvolt (which corresponds to a peak sideband level of 1 microvolt and a signal to noise ratio of 15 db).

**NON-LINEAR DISTORTION**—Third order intermodulation products which might result in cross talk between sidebands do not exceed -50 db relative to the sideband levels.

**OUTPUT**—Variable up to +14 db relative to 1 mW into 600 ohms.



# **Mullard**



## **SPECIALISED ELECTRONIC EQUIPMENT**

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