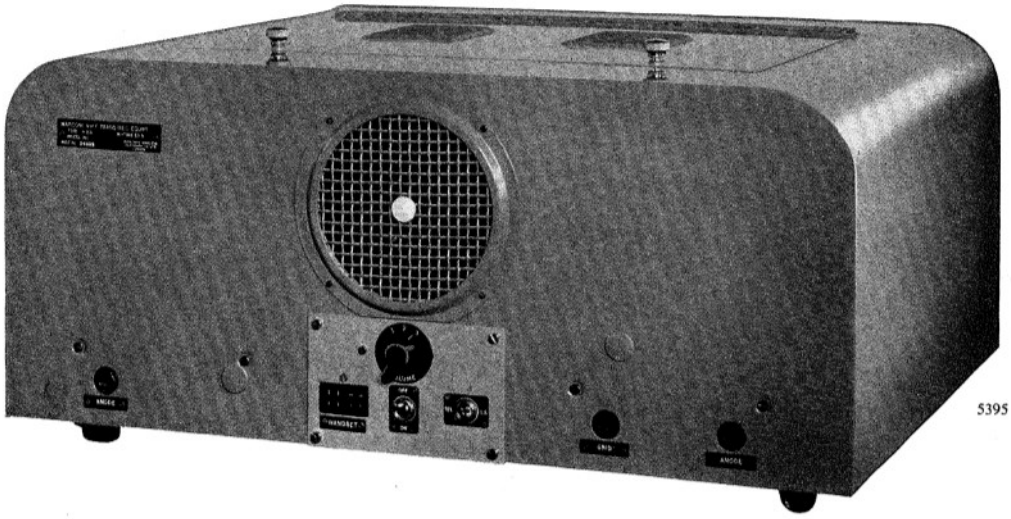
10-Watt Fixed Station VHF Equipment *Type H16A*



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THE CONTROL STATION EQUIPMENT Type H 16A is a neat self-contained unit designed for installation in headquarters offices where it provides continuous contact with associated mobile stations.

Control may be either local, extended or remote. All controls are on the front panel of the set and either a telephone handset or a stand microphone with combined pressel switch for transmit/receive changeover, is employed. The equipment has a built-in loudspeaker.

Either common frequency or dual frequency operation on a simplex basis may be employed.

CIRCUITS

Transmitter. The first valve of the RF chain is used as a high-frequency crystal-controlled oscillator and frequency multiplier. It is followed by a further multiplier and one stage of amplification at the carrier frequency. The output of this amplifier drives the final power amplifier, and the RF output is fed to the aerial *via* a changeover relay and a concentric feeder. In editions above 78 Mc/s, there is an additional stage of amplification between the first and second frequency multipliers.

The final RF amplifier is anode modulated by a push-pull modulator circuit operating under class AB conditions and fed directly from the microphone.

Receiver. The receiver is basically a double superheterodyne, a single stage of radio-frequency amplification being followed by two frequency changers. A single valve is employed as a crystal-controlled oscillator and multiplier, and its output is mixed with the incoming signal from the RF stage on the grid of the first frequency changer. Between the first and second frequency changers there is a single tuned circuit at the first intermediate frequency, and both the signal (at

1st IF) and the output from the crystal oscillator pass through to beat on the grid of the second frequency changer and produce the final intermediate frequency. There are three stages of IF amplification followed by diode detectors for both signal and automatic gain control, and two further diodes are used in a series/shunt noise limiting circuit. Two stages of audio frequency amplification are used and a low-pass filter is provided between the first of these and the output stage.

An edition using a self-adjusting muting circuit operating on the signal/noise ratio is available. This edition can also be supplied to provide bell-calling facilities.

DATA SUMMARY

Frequency ranges: 36– 44 Mc/s
65– 78 Mc/s
78–100 Mc/s
118–132 Mc/s
156–184 Mc/s

Transmitter power: 10–14 watts, depending on frequency.

Frequency tolerance: ±0·01%.

Modulation: 80–90%.

Sensitivity: AM: between 1·0 and 2·5 μV for 10 db s/n ratio, according to frequency range.

Audio output: 1 watt.

IF bandwidth:
35 kc/s at 6 db (narrow band edition).
50 kc/s at 6 db (wide band edition).

Image protection: 30–60 db, depending on frequency range and IF bandwidth.

AGC: 6 db output change for 60 db input variation.

AF response (Transmitter and Receiver): Within ±3 db from 300 to 3000 c/s.

Power supplies: 110–130 volt or 200–250 volt, 50–60 c/s, AC mains.

Power consumption:
Transmit 200 W. Receive 110 W.

Dimensions:

Height	Width	Depth	Weight
9¼ in. (23·5 cm)	21½ in. (54·6 cm)	17¼ in. (43·8 cm)	69 lb (31·2 kg)

Marconi

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