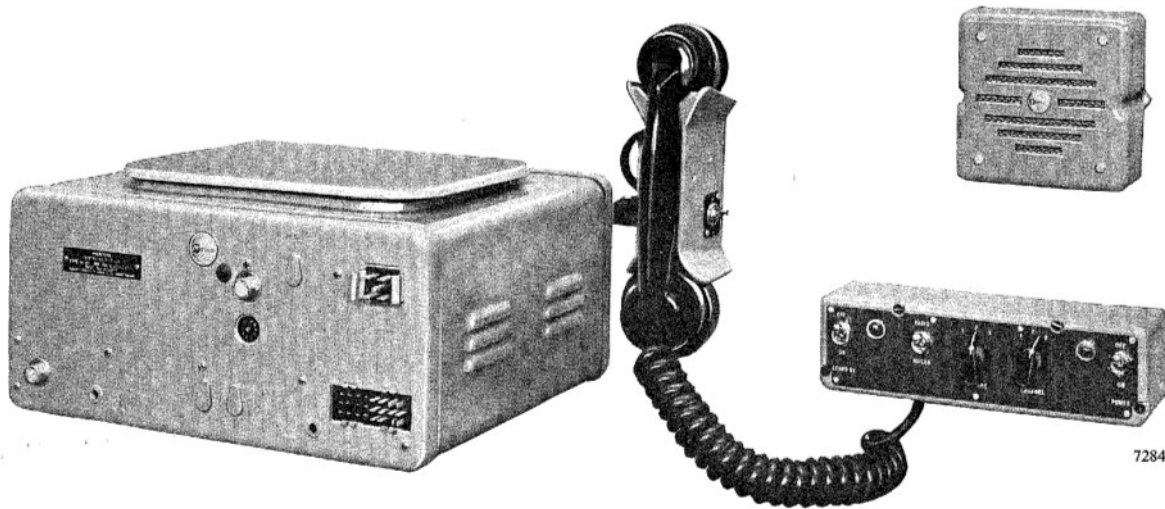




7/8 -Watt VHF Telephone Equipments (AM) Types HP 55 and HP 56



THESE ARE NEAT, self-contained equipments suitable for mobile use for such applications as police, fire and ambulance services, harbour control and similar purposes. The equipments have a particularly high order of frequency stability and so permit close channel operation. Arrangements can be made to permit switching between two or three closely controlled channels within a small frequency band. These equipments are designed for operation over an ambient temperature range of 0-50°C and are suitable for use in tropical climates.

The transmitter/receiver and power units are housed in an easily removable case which is secured to a cradle fitted with shock absorbers. A control unit and handset retainer are associated items. A telephone handset is normally used with these equipments and a loudspeaker is also provided.

Either simplex or press-to-talk duplex operation is possible and in the latter case one aerial with a

filter is employed. The 'simplex' version of the Type HP 55 is known as the HP 55S. The handset retainer, for use when duplex operation is employed, is arranged to transfer the receiver output from loudspeaker to telephone earpiece when the handset is lifted from its rest.

CIRCUITS

The transmitter comprises a high stability crystal oscillator, frequency multiplier stages and power amplifier. The speech modulation is *via* a push-pull class AB1 modulator stage fed from a double-button carbon microphone, which stage is also arranged for use as a public address amplifier.

The superheterodyne receiver is crystal controlled and employs double frequency changing. AGC and noise limiter stages are incorporated and the level of the muting circuit is pre-set. The IF circuits have a steep response curve providing high selectivity.

DATA SUMMARY

GENERAL

Service: AM telephony.

Frequency ranges: Type HP 55 70–100 Mc/s.
 Type HP 55S 70–100 Mc/s.
 Type HP 56 156–184 Mc/s.
 Type HP 56M 118–132 Mc/s.

Selection of up to 3 frequencies.

Frequency tolerance: 20 parts in 10⁶ over the temperature range –10 to +45°C on both transmitter and receiver.

Aerial input impedance: 40–50 Ω.

Power supply: 6 or 12 V DC (nominal).

Power consumption: Receiver only 3 A.
 Stand-by 4 A.
 Transmit (Simplex) 10 A.
 Transmit (Duplex) 11 A.

These figures are for 12 V supplies and should be doubled for 6 V working.

Dimensions:

	Height	Width	Depth	Weight
<i>Transmitter/receiver only</i>				(approx.)
	7 in. (18 cm)	14½ in. (37 cm)	13 in. (33 cm)	
<i>Transmitter/receiver in case</i>				
	8½ in. (21 cm)	14¾ in. (37.5 cm)	14½ in. (37 cm)	27 lb (12 kg)
<i>Control unit</i>				
	2¾ in. (7 cm)	8½ in. (21.5 cm)	3 in. (7.6 cm)	3 lb (1.4 kg)

Loudspeaker

4¾ in. (12 cm)	5 in. (12.7 cm)	2½ in. (6.4 cm)	1 lb (0.5 kg)
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TRANSMITTER

RF power output: Type HP 55 8 watts.
 Type HP 56 7 watts.

Modulation capability: 95%.

Spurious radiation: At least –70 dB (including harmonics).

AF response: Within ±3 dB over the range 300–3000 c/s with reference to the level at 1000 c/s.

Loudhailer: 7 W.

RECEIVER

Noise factor: 6 to 8 dB according to frequency range.

Spurious response: At least –80 dB.

AGC: 6 dB maximum output change for increase in input from 3 μV to 0.1 V.

Audio output: 1 watt into 3 Ω loudspeaker and 10 mW into 300 Ω earpiece.

AF response: Within ±3 dB over the range 300–3000 c/s with reference to level at 1000 c/s.

Selectivity: Wide or narrow bandwidth as required.

Oscillator radiation: Less than 0.02 μW.

These equipments have been Type Approved by the British Post Office.

Marconi

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