

THE VMARS EQUIPMENT DIRECTORY – PART 3

This month's selection features equipment in the article "Military Radio Communications" in this issue.

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Wireless Set No.38 Mk.I & II

Type: HF manpack transceiver

Frequency range: 7.3 – 9.0 MHz, continuously tuned.

Operating modes: AM R/T

Tx output: 200 mW

Rx circuitry: uses 4 ARP12s as RF amp, mixer, IF amp plus reflex AF amp – the last one being shared with the Tx as the LO. The IF is at 285kHz. A WX6 metal rectifier provides detection and AVC.

Tx circuitry: the MO using an ARP12 runs at half the output frequency, and then doubles the frequency to drive the PA (ATP4), which is grid-modulated by the mic amp (ARP12).

Power requirements: 150V HT, @ 9mA (Rx), 16mA (Tx). 3V LT, @ 240mA (Rx), 480mA (Tx).

Variants: the Mk.I had the batteries in the set case, whereas the Mk.II and later had batteries in a separate satchel. The Mk.II* introduced improved tracking of the MO on Tx and Rx. A Mk.III version exists, mechanically quite different, with much improved slow-motion tuning, a biased detector circuit giving better Rx sensitivity, and a crystal calibrator.

Notes: This was the first of the really small manpacks to achieve widespread use – previous attempts having not proven very successful. However, anyone who has actually tried using one of these sets will wonder just how their operators coped with the crude tuning mechanism, the wide bandwidth and the low power output in what was a pretty busy area of the SW bands.



Wireless Set No.62

Type: Vehicle mounted, animal or man-portable HF transceiver.

Freq Range: 1.6 – 10MHz in 2 bands

Modes: AM R/T, CW

Power Out: 0.5 – 0.8W (R/T), 0.8 – 1.1W (CW)

Power requirements: 12V DC @ 3A (Rx only), 3.7A (standby), 4.6A (Tx R/T), 5A (Tx CW)

Circuitry: the same mixing scheme is used as for the WS19 where the LO is mixed with the BFO on Tx to ensure a common frequency on both Rx and Tx. The Rx is a conventional superhet with 460kHz IF. The Tx mixer is followed by buffer amp and then PA (VT510), the latter being grid-modulated by a single amplifier on R/T. Antenna tuning is via an L-match, using a built-in roller-inductor. A rotary transformer provides 340V HT.

Variants: the Mk.I included an extra mic pre-amp. The Mk.II was strengthened to allow it to be dropped by parachute, and included various other minor circuit mods.

Notes: though highly regarded by collectors, I have to say I am not an admirer of this set. It provides a miniscule RF output for a set of its size, and the rotary transformer is very noisy in operation, and prone to failure. It was produced as a stop-gap for the WS42, and in my view is not really success as either a man-portable or a vehicle set, being too heavy in the former role and too low powered in the latter. Amazingly, it continued in use until the 1960's.



Wireless Set No.46

Type: HF manpack transceiver.

Freq Range: 3.6 – 9MHz in 4 bands by using plug-in coil packs. 3 crystal-controlled channels available from front panel selection.

Modes: AM R/T, MCW

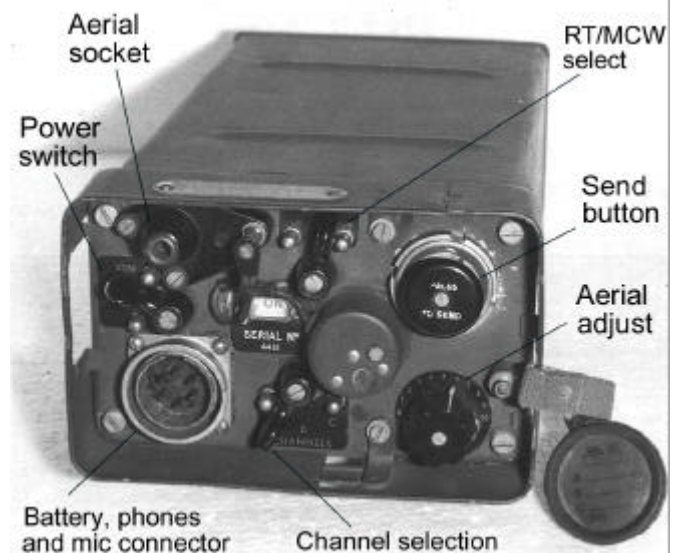
Tx output: 1 – 1.5W

Power requirements: from dry battery: 150V HT @ 28mA (Tx R/T), 37mA (Tx MCW), 10mA (Rx). 3V LT @ 550mA (Tx), 350mA (Rx R/T), 850mA (Rx MCW). -12V grid bias @ 14mA.

Rx circuitry: the aerial is fed direct to the triode-pentode mixer/LO stage (ARTP2). This mixes the incoming RF down to the IF of 1550 kHz, where it is amplified by two IF stages (2x ARP12). Detection and AVC is carried out by a dual-diode (AR8), and the resulting audio fed back to the 2nd IF amplifier valve, which also functions as the audio output stage.

Tx circuitry: RF is generated by a high power crystal oscillator using a power pentode (ATP4), which is matched to the rod aerial by a parallel tuned circuit. This is anode and screen modulated by a push-pull dual-pentode stage (ARP37), which is fed with audio from a triode amplifier (AR8), which also serves as an AF oscillator on MCW.

Aerials: a) up to 8 'B' rods, 7'6" max; b) trailing wire, 25' max; c) 16' rod; d) wire slightly less than quarter wavelength long.



Variants: Mk.I, Mk.II and Mk.II* exist only differing in the degree of tropicalisation applied.

Weight: 24lbs for complete station.

Notes: introduced during WWII, this set seems to have been the most practical of the HF manpacks of its time, only hampered for a while by lack of crystals. It was more or less superseded by the WS31 after the war – though it remained in use for short-range, sky-wave working in dense jungle.