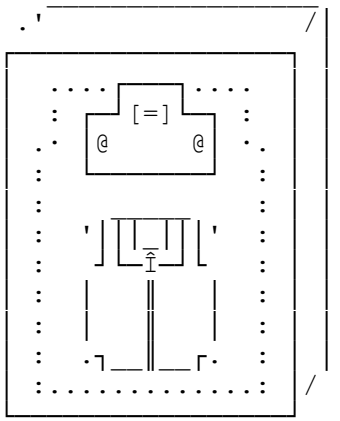
Old Valve Radios

By G8MNY (Updated Nov 09)

(8 Bit ASCII Graphics use code page 437 or 850)

I have collected a few over years, 4 of the bigger ones I recently displayed at an RAF memorial flight do, where WW11 vintage kit is appreciated by old timers.

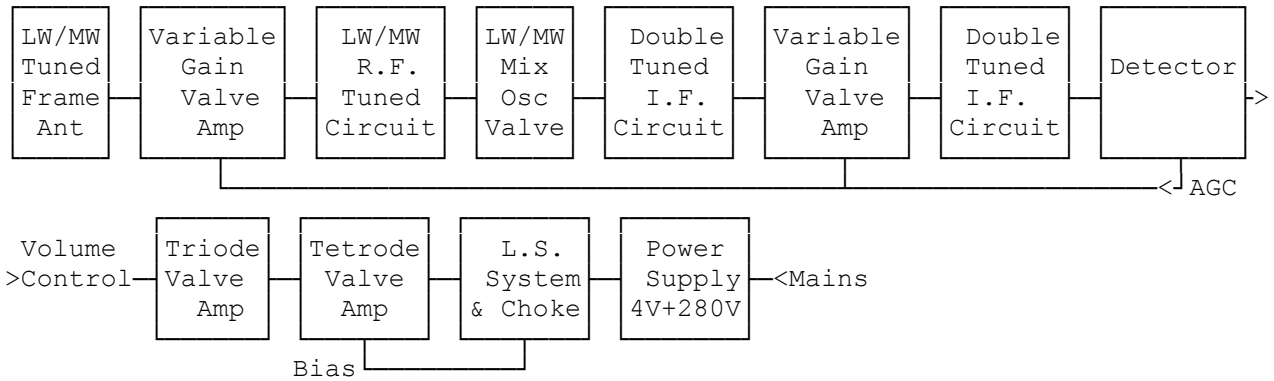
My oldest & biggest one is a Marconiphone 279, it was made in 1934/5 & sold for £16+pt, It uses five 5 pin & one 7 pin valves, it is still working fine. Last heavily used in the 1960s in the "prefects room" at my school, listening to all the MW boat pirates, so its condition is poor!



The design is quiet a complex superhet for its day. It gave good sensitivity with just the MW/LW internal frame aerials which had a manual peaking capacitor.

The RF & external aerial is fed to a variable mu (gain) stage (VMS4B) then RF tuned again, & on to the oscillator mixer stage (VMS4B).

A low frequency IF of 125kHz (kilo cycles back then) is used & gives very good selectivity, & with the 2 RF tuned circuits the nearby RF image is not a problem. The IF is double tuned both sides of the variable mu IF amp (VMS4B). The DC in this IF stage also drives the "fluid light" dial tuning indicator (no magic eyes back then, so this is a magnetised metal strip in a coil in the dial light path). N.B. These 3 tetrodes have the ANODE as the top cap!



The detector is conventional double diode triode valve (MHD4) 7 pin, with high level signals from the IF anode used to generate the negative AGC line for the RF & IF amps. The AF detector feeds the volume control together with the Gram Pickup input & back to the triode preamp stage. This is coupled to the AF output. A leaky capacitor here, is a major cause of valve radios not working with the output stage taking all the HT power!

The output stage is a single power pentode (MPT4) with side screw connection for the screen grid, it produces about 5W RMS onto the LS transformer.

The LS is a large mains energised magnet (HT choke) in the earth side of the PSU, the winding also has a tapping for the negative bias voltage for the AF output valve (a complex way to get -ve tapping rather than 2 Rs).

In series with the LS voice coil is the "Hum bucker" coil on the side limb of the choke magnet, this picks up the same hum voltage as the voice coil & cancels the hum.

Across the LS is a shorting mute switch operates when the band change changes over.

Due to the negative side HT choke, the smoothing caps in the separate PSU have separate -ve rails. The rectifier valve (MU12/14) has 2 anodes fed from the 350-0-350V transformer. No fuse or earth is used in the set, (I recommend a 1A mains plug one & an earth tag screwed to the PSU case!)

The 4V heater line has a hum balancing pot ("Hum Dinger"), slider earthed, this is used to minimise heater emitted hum in the 5 indirectly heated valves.

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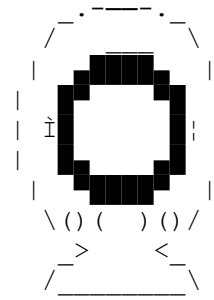
My next largest set is the famous EKCO A22 with the fragile iconic round black Bakelite case, mine is still 100% OK & works on LW MW & SW.



First made in 1945 there were earlier round types with live chassis & no chrome L.S. trim, but the A22 is a safer mains transformer model with four IO based valves ECH35, EF39, EBL31, AZ31 ! Sold for £14-14s (14 Gns) +pt.

It has no frame aerial & needs a good wire aerial & then it does very well.

There is a semi slow motion tuning drive, the huge 270° dial lets you see the outer SW scale quite well. Despite the round case it is fairly conventional valve radio design.

Again a leaky signal capacitor to the AF output valve, is a major cause of valve radios not working with the output stage taking all the HT power!

Looking on the Web, I see these sets now go for nearly £800 ($1400)!

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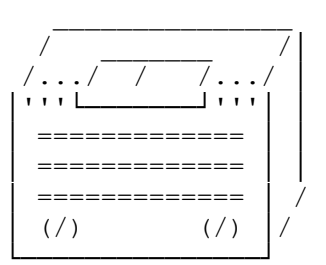
Ferguson 450, SW & MW, first made in 1946 sold for £14-14s (14gns) +pt.

This one has a strange history, as it is still band new & looks it with its shiny varnished wooden case! Removed unsold from my Grandfather's shop when it closed down, it is still in original box, with guarantee, operating instructions & sales information etc. It had an intermittent fault "no RF osc" which I guess is why it was never sold. (tuning cap)



Valve line up is ECH35 mixer osc, EF39 IF, EBC33 Detector AF amp, EL33 AF output. AZ31 rectifier.

Again it needs a good external wire aerial. It does use a mains energised magnet (HT choke) on the L.S. in the +HT side of the PSU. In series with the L.S. voice coil is the "Hum bucker" coil on the limb of the choke magnet, this picks up the same hum voltage as the voice coil & cancels the hum.

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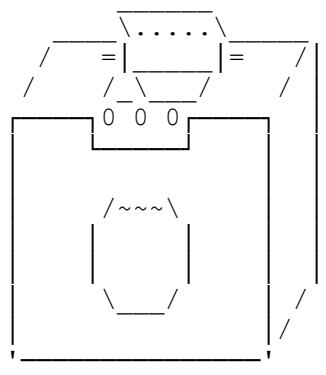
Roberts Valve Portable LW MW & SW Radio



It has a blue covering over wooden box. LW, MW with built in frame aerial & SW on added wire aerial. It was quite popular as I have seen many examples. It used a large 1.5V+90V battery & has a battery eliminator to work on mains.

Care must be taken not to exceed 1.5V on the valves heaters, as the heaters will easily lose their cathode coating (emission) or burn out.

See my Tech buls on "Valves (tubes)" & "Early AVO Valve Tester".

Why Don't U send an interesting bul?

73 De John G8MNY @ GB7CIP