

# Bush VHF90 Restoration

I got this cheap off e-Bay and didn't exactly cover myself in glory while fixing it. The seller said it had been in regular use until recently when it had just stopped.

When I tried it its was dead with no continuity through the plug. The wires in that were OK as was the fuse.

I started checking valve heaters but then some instinct directed me towards the dial lights. One had blown and after changing that it not only worked but was fantastic; I could get Radio 2 on a four inch bit of wire.

Obviously it should work sans lights so that was something to investigate.

At some point it had been partially re-capped and, as expected, the shunt resistor was open circuit. According to both the Trader and Bush data this should be  $30\Omega$  so I fitted a  $33\Omega$ . The dial lights still seemed a bit temperamental but seemed to be OK until they both did a flash-gun impression. I then discovered that they should only be 3.5V and I'd fitted 6.5V ones so something was definitely up still.

Another mystery was that the HT seemed sky-high. I traced this to R34 (Bush number) which should be  $160\Omega$  but had been replaced with a  $33\Omega$ . It looks like somebody had mixed the value up with the number.

I fitted a  $200\Omega$  but it still seemed high. I then decided that if the meter was telling me things I didn't want to see, the best thing was to use another one. The problem was my not having realised that the numbers on the sheet were for an AVO7 and with my old 2000V/ $\Omega$  thing they were close enough for rock and roll.

Apart from that I did the rest of the a re-capping, which I did one at a time hoping that the voltages would start to make sense, and a partial re-wire.

I kept checking the lamp voltage and as it kept spiking I added an extra grounding wire to the resistor and it seemed fine thereafter.

The only 3.5V lamps I'd got were 300mA and too dim (they should be 150mA) so I planned on fitting LEDs.

I had it on for an hour or so out of the case and then re-assembled it and was very impressed by the sound quality. That was until I heard a crackle followed by silence. It didn't take long to find that my nice new lamp shunt had expired.

I fitted the previously wrongly fitted  $33\Omega$  one and that lit up like a one-bar fire.

A bit more checking quickly showed the trouble to be the filter cap. I'd left it alone as I hadn't got a replacement and it seemed OK and I'd assumed that if it did fail it'd just explode or blow the fuse. I bet this was also causing the lamp voltage to be unstable as if it were intermittently failing this would be causing a bigger drop over the shunt.

The set was in good nick cosmetically. The only thing wrong in that regard was the escutcheon around the wave switch being missing but I made a new one out of an old ivory knife handle.



I eventually found a pair of 200mA dial lamps and these worked fine.



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