

McMichael Duplex Four – a chance discovery by Ray Bayliss

It was in 2006 that in connection with my other interest, namely vintage motorcycles, I attended a classic vehicle rally at Cranleigh, Surrey. In addition to the vehicles there were various stalls and on one of these was a tatty leather covered box which at first glance looked like an old portable gramophone. Opening the box I discovered that it contained not a gramophone but a McMichael Duplex Four Type S portable wireless and apart from a little dust and dirt it looked perfect!



I had seen a picture of this set in Radio Radio and liked the look of it. Seeing it for real more than confirmed this appreciation. Unlike many portables of the time it had been designed as an integrated whole and was not made up from various manufacturers' bits and pieces. Sufficient to say, that after some haggling it was mine!

On getting the set home I did some preliminary checks with an AVO which revealed that the valve filaments were ok, there was resistance between HT+ and HT- which was unacceptable on a battery set. Where the HT was permanently connected, only the LT supply switched. Also, there was no continuity between the output valve anode and HT. It would have to be dismantled. The battery compartment and valve cover can be removed by means of a pair of nicely-made spring

catches. Next, the control panel screws were removed, which enabled the panel to be swung upwards revealing most of the components and connections to the aluminium box/chassis which contained the valveholders and intervalve transformer. It also revealed the leads going through the sides of the case to the lid which houses the loudspeaker and frame aerial. Nothing appeared to have been touched since the wireless' manufacture in 1932!

I was now able, with the aid of a testmeter to work out the circuit and inspect the components. Two 1 μ F decoupling capacitors were leaking so I disconnected their positive ends leaving them in situ and wired in two small, modern components. Further inspection revealed that the RF choke in the first valve anode was open circuit, with Sod's

law declaring that the break was on the inside of the winding; it was unwound and rewound using the original wire. The other component with a problem was the 25 Ω volume control/switch which was oxidised and giving intermittent contact. Being rather thick wire this was easily remedied by rubbing down with fine emery paper and giving it a squirt of contact cleaner.

Now it is time to see why the loudspeaker is open circuit. The moulded bakelite loudspeaker plus frame aerial housing was removed from the lid giving access to the loudspeaker connections. The winding was tapped with a .001 μ F capacitor attached to the tapping point. The smaller section of the winding was open circuit so I decided

Having got the set working I turned my attention to the cabinet exterior. The leatherette covering had the surface scuffed in places showing brown under the black finish plus the leather of the carrying handle had decayed and was breaking up.

to try using the main section only, by moving the HT connecting wire to the tap.

All the valves displayed full emission when inspected on my AVO valve tester although the output valve was probably not original, being a Marconi LP2, not a Cossor 22OP. The circuit provides automatic grid bias, so all that was necessary to power up the radio was HT and LT. Not knowing what voltage was recommended for HTI decided to use the 90 Volt rechargeable battery I made up some time ago and for LT a small 2 volt Cyclone cell.

Switching on with the tuning set to Long Wave 1500 metres and setting the volume/selectivity control, (V1 filament voltage!) to approximately halfway I was soon listening to Radio 4. Moving the 'adjust' control to align the RF tuned circuit increased the volume some more. Finally the reaction/sensitivity control was tried and proved smooth in operation. In fact all the controls were easy to use, the only disconcerting factor being the lag in the volume control caused by the filament of the Screen Grid valve warming or cooling; perhaps not the best method although it appeared to be quite common practice at that date. The sound quality being acceptable I decided to leave the speaker winding as it was for the time being.

