All in a day's work

Harry Leeming, G3LLL, with more tips for keeping old rigs alive

■ There is nothing more irritating in the service game than intermittent faults. Time is money, but it can take days sometimes to locate such a simple fault as a badly soldered joint. In these cases one is working for virtually nothing as one can imagine what the reaction would be to an invoice on the lines of "Tracing and resoldering one joint, 15 hours at £25 per hour = £375 plus 17.5% VAT".

Fortunately one does come across intermittent faults that repeat themselves, and so having wasted ages finding the fault the first time, one can recoup some of one's losses when it pops up again on another rig. I have quite had a few Yaesu FT-747s which have had the complaint of suddenly going dead on either receive or transmit, and then five minutes later, or the next day, working perfectly.

The first rig that had this fault was in and out of my workshop several times over a period of weeks. Eventually I managed to establish that the signal was disappearing somewhere between the input and the output of the filter board - see Fig 1 (a) and (b). By leaving meters connected to the circuit, I then found that the voltage across the L01 / R01 combination went high when the fault occurred. This was rather confusing to trace, as these parts are fitted on the board in the reverse order to that shown on Yaesu's circuit!

Every attempt to trace exactly what was happening resulted in the rig curing itself, and in the end I had to presume that a 'plated through' connection was playing up. I strapped the components directly to the tags on J01 as per the drawing, and the fault never reoccurred.

Since then I have had several repeats of this fault with FT-747s. In all cases the fault has proved to be on either the input or output of the crystal filter diode switch. Wiring the end of the resistors in the filter circuit direct to the diodes cures the fault, and I now rewire both as standard practice.

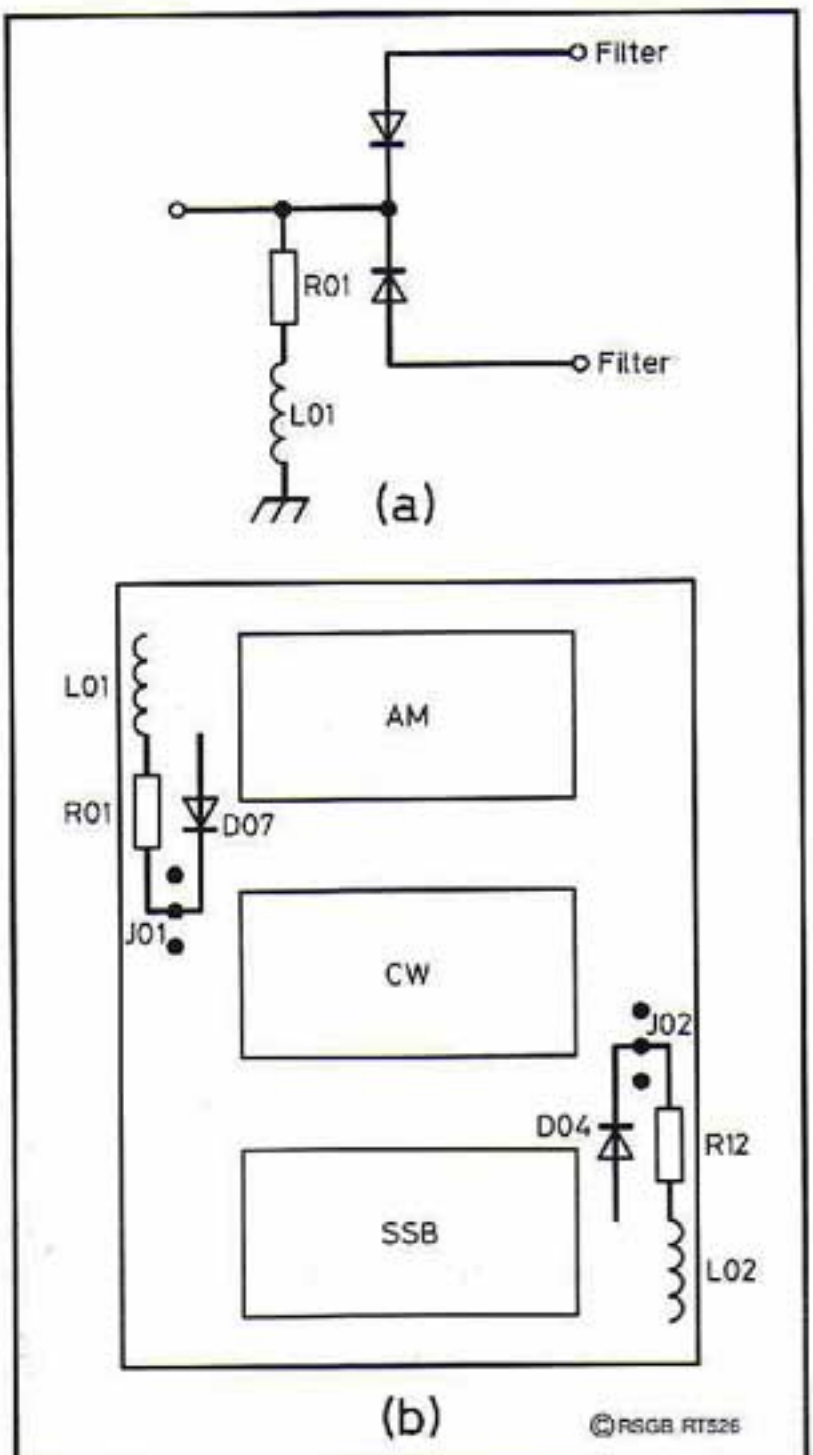

Fig 1: FT-747 - (a) simplified input circuit, and (b) filter board. Note that L01 / R01 and L02 / R12 are shown with coils at the 'hot end' in the circuit diagram, but on the board the resistors are at the hot end.

a qrp power meter

I have had many requests for a meter to read low power levels. In a lot of the cases I found that the enquirer already had a suitable meter, he just wasn't aware of it. Most cross-pointer SWR / power meters have a much more sensitive reflected power scale than forward scale. When switched to the 20-watt range for instance, the reflected power