

The Serviceman

In-home servicing is not all beer and skittles!

While most servicemen undoubtedly prefer the privacy and convenience of their own workshops, most customers prefer service jobs to be done in their own lounge rooms. And, at least where larger appliances are concerned, the lounge room usually wins. But it is less than ideal at the best, and little short of impossible at the worst.

My main story this month emphasises the lounge room trauma quite effectively. It is a contributed story, from another professional serviceman, and also emphasises the kind of "on-the-spot" repairs one often needs to make in such situations. The contributor is Mr P. H. of Burwood, NSW, and this is how he tells it:

Reading your story in the December issue about "microsurgery" on those three pieces of malfunctioning gear reminded me of a somewhat similar job I did recently.

The call came from a good friend, who had a mate, who had a wife, who had a TV set that didn't work. Which is a round about way of explaining that it was what you have called a "love" job. Perhaps "inside" job would be a better term.

I called around one evening, only to find a party in full swing — not exactly the kind of atmosphere conducive to fault finding. Nevertheless, I was pointed towards the set and told that smoke came from the back of it and that nothing had happened since.

The set was an early model Pye monochrome which had been kept, as much as anything, because of the really nice cabinet which seemed to fit in with the rest of the furniture.

I removed the back and turned the set on. The result was two orange glows in the EHT cage. One came from the anode of the 6CM5 line output valve which, fairly obviously, was not getting any signal at its grid to drive the latter negative, and so was drawing heaps of current. The other glow was from the damper diode, for reasons not immediately obvious.

I measured zero volts on the line oscillator valve plate and, after tracing out the HT for this stage, I realised that the HT was also missing from the IF section.

About this time I noticed that a small child had surrounded himself with my screwdrivers and had somehow managed to pull the knobs off my transistor tester! After cleaning up the mess and replacing the knobs, I resumed my search for the missing HT.

Eventually I found the charred remains of a 2.2k Ω decoupling resistor; obviously the source of the "smoke from the back of the set". Both the line oscillator valve and the IF stages were supplied via this decoupling network.

That there was an HT short somewhere was fairly obvious, but where? I connected the ohmmeter to the HT line and it showed virtually zero resistance to chassis. Then I removed each IF valve in turn, suspecting that it was an interelectrode short in one of the valves and would go away when I removed the faulty valve. But it didn't go away.

Next, all the appropriate capacitors were pulled out by one pigtail — the set was constructed on a printed board, in spite of its age — but still the short remained. Someone handed me a beer

and I took a breather, convinced that each of the IF transformers would have to be painfully removed until the short vanished.

But was it really in the IF section? To prove the point I cut the HT line foil leading to the IF section. And, yes, the short vanished. I traced the first foil branching off the HT line to an IF transformer and removed the shield can.

I found a two-turn winding around the main tuned winding with one end to chassis and the other end unconnected. It was fairly obviously a "gimmick capacitor" and, while there were no signs of heating or other indications of a breakdown, I was suspicious enough to unwind it. And as I did the ohmmeter swung to the other end of the scale.

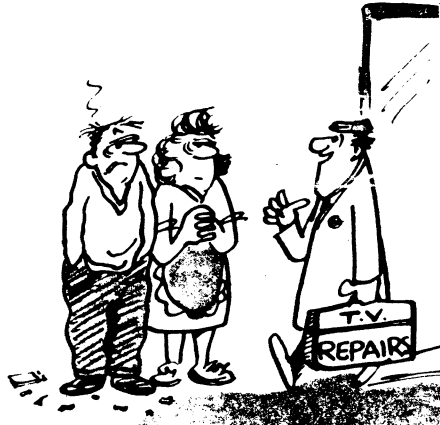
Well, at least I'd found the fault, and I must admit to feeling some pride at having done so in such a distracting environment. But now I had to repair it. Standing up from behind the set I asked if anyone had any fingernail polish. After the inevitable bout of giggles and limp wristed gestures the lady owner produced some green polish which she had never used.

I painted the main winding with a generous coating, waited for it to dry, then wound on a new two-turn capacitive winding. And, as a further precaution, I inserted a .01 μ F capacitor in series with this winding and earth.

I replaced the burnt out 2k decoupling resistor, repaired the foil track where I had cut it, and prepared for the big test. There was only one more thing that worried me; a closer look at the EHT transformer revealed that it was cracked like you wouldn't believe. Was this the result of the excessive 6CM5 plate current? And had it damaged the transformer in any way?

I crossed my fingers and switched on. Imagine my relief when everything warmed up normally and a first class picture appeared on the screen.

Another triumph for microsurgery under difficult conditions.



"You can go in now!"