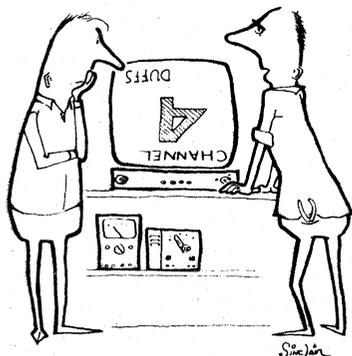


On a different note, I have a very interesting story from a reader describing how he tracked down an intermittent fault in his TV set — after 18 years! (That ought to make the Guinness Book of Records.)

The reader is Mr P. D. of Wombat, NSW. (No, I'm not kidding, there is such a place.) Mr P.D. is only a hobbyist, not a professional serviceman, but I must commend him on his methodical approach to the problem. Here is the story as he tells it.

My TV set uses the Stromberg-Carlson 4A002 chassis and still performs well. The only valves replaced in 18 years are the 6E58 and 6BL8 in the tuner and the 6DX8s in the audio and video amplifiers. Also, several paper capacitors in critical positions have been replaced with modern plastic types.



"We've tried just about everything else. What about putting the tube in upside down?"

The intermittent problem has been with the set since new. At irregular intervals there would be a pop in the speaker, followed by frame buzz in the sound and horizontal streaks in the picture, varying in sympathy with the sound.

The first few times it corrected itself after a few minutes. Subsequently it was discovered that it could be "fixed" by retarding the contrast control to minimum. With a pop the sound would come good and the contrast control could be returned to its original position.

I need hardly add that this fault always occurred at the most inappropriate times, when it was just not practical to investigate the problem on the spot. And, since it was easily "fixed", this was the procedure adopted.

And, just as typically, I could never make the fault occur when I was able to work on the chassis. So I tried to simulate the fault by disconnecting various components around the video amplifier, on the assumption that it was due to some component going open cir-

cuit intermittently. Unfortunately, nothing I did ever created the fault.

I will digress here to describe another fault which had been with the set from the beginning, since it provided a clue to the intermittent fault. This fault was non-linearity in the vertical scan and, no matter what I did, I could not achieve the linearity claimed in the service manual.

The cause was eventually traced to the vertical output stage and, more specifically, to the plate supply decoupling capacitor (60 μ F) and the cathode bypass capacitor (200 μ F), both being in the same can. Disconnecting the cathode bypass and substituting a separate capacitor cured the problem.

MEMORY DAWNS!

I thought no more about it at the time but, recently, I came across some notes I had made about the exercise at the time and the light suddenly dawned. Looking at the circuit confirmed that the screens of the video amplifier and the audio amplifier were both bypassed by 8 μ F electrolytics and, yes, they were both in the same can.

To prove my theory I disconnected the positive terminals of both electros and substituted two separate 8 μ Fs. Disconnecting the audio one increased the hum slightly, while disconnecting the video one made no apparent difference. But disconnecting both negative ends from the chassis, with them still connected together, produced the fault symptoms exactly.

So it appears that the fault was an intermittent open circuit between the common negative electro terminals and the can, with the connection between these terminals intact. Thus the screens of the two valves were not only robbed of their bypasses, but were effectively connected together via the two electros in series, back to back. In a way, it would be a three-in-one fault.

OPEN TO SUSPICION

Well, that's Mr P.D.'s story, and a most interesting one too. Significantly, it is not the first time that multiple electro assemblies have exhibited faulty negative terminals and I suspect that they were never very reliable. On the other hand, I have never heard of a failure causing a common coupling path in this manner, though it may well have happened but not been recognised.

More importantly, I think, the story is a reminder that endeavouring to simulate an intermittent fault is still one of the most valuable tricks we have to either find the fault, or to confirm that it has, in fact, been found.

So thank you, Mr P.D. I imagine that life in the seething metropolis of Wombat has now returned to normal.

