

The neat little AWA 'on its end' radio featured in this month's last item. Its unusual design made the chassis very unstable when out of the case.

Mysterious buzz...

Now for a story from my own workshop. My bench is rather under-used these days, but like most servicemen, I find it almost impossible to put down the soldering iron for the last time.

Do you ever do some simple thing without thinking about it, only to find later that it has caused you untold trouble? I'm notorious for it, and I've spent hours chasing faults that didn't exist in the first place! Here's a case in point...

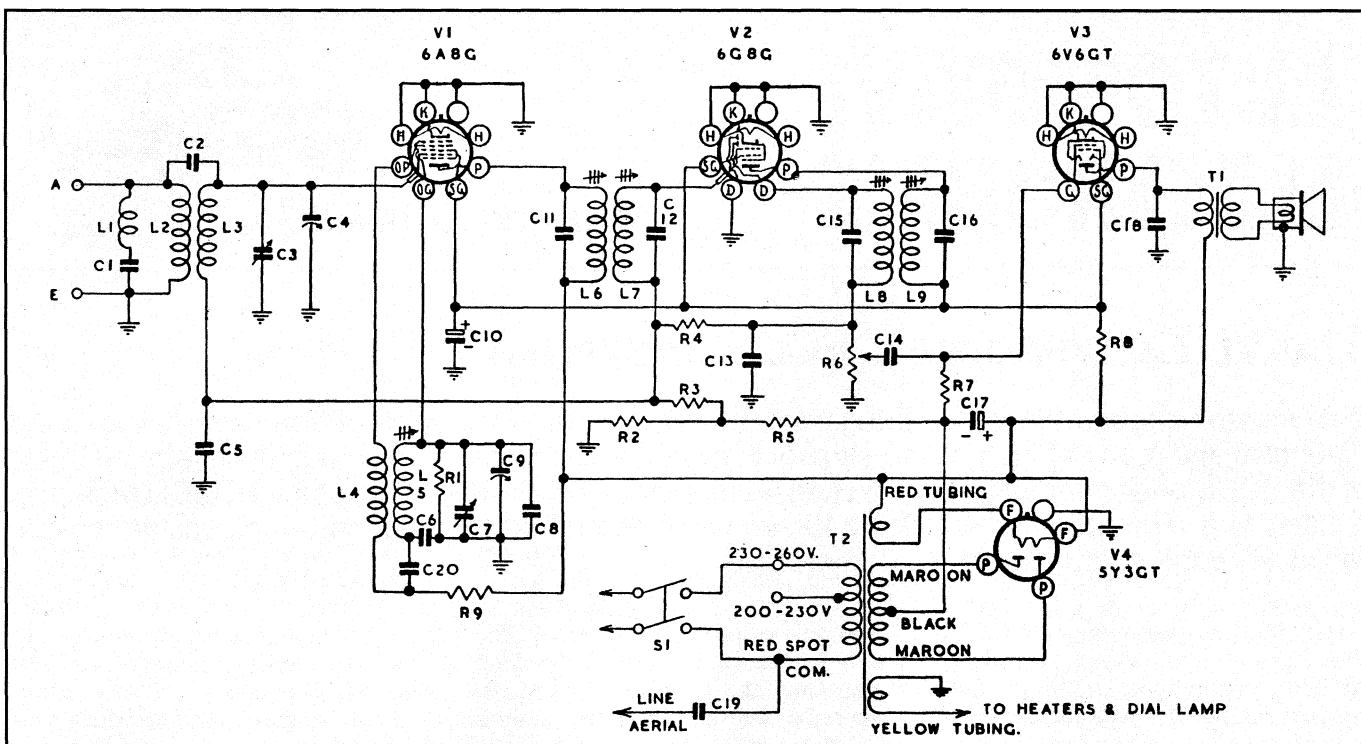
I have a special bench that I made up for working on video cassette recorders. It has a shelf on which I keep the CRO, pattern generator, a colour monitor and various tools and accessories that make the job of servicing VCRs easier.

On the underside of the shelf I have fitted a low voltage fluorescent strip light. I selected the smaller unit because it only projected below the shelf by about four centimetres, rather than the 10cm of a more conventional fluoro. In the years since I made up the bench, it has worked well and has never given me a moment's trouble. Until today, that is.

My son brought in a four valve mantel radio of unknown brand or vintage. His girl friend's mother wanted to know if I could fix it, and I've never been one to refuse a challenge.

I gave the set a quick examination in the kitchen and determined that there were no obviously damaged parts, nor any short circuits on the mains or high tension lines. Then I switched it on.

As the set warmed up, it gave out a loud buzz. It wasn't hum in the usual



The circuit for the AWA 520M mantel radio. There are not a lot of components in the chassis, and it looked quite empty after the big old paper capacitors had been replaced with modern miniature types. The most likely cause of the trouble was C5, below the aerial coil at the left hand end.

sense, but seemed to be linked to the mains in some way

Then as I tuned over the band, the buzz became a whistle then back to a buzz, in a typical heterodyne fashion. There was only a faint trace of station in among the birdies.

Under the chassis, I found a variety of capacitors, including the old AWA 'moulded mud' variety plus several later but still very old Ducon paper capacitors. It was clear that the set had been worked on in the past, but so long past that even the replacement parts were into their 'time on' period.

So I took the set down to the workshop and in the absence of anywhere else to put it, parked it on the VCR bench. (Since I no longer work every day in the workshop, it doesn't get tidied as often as it should and at the present time is in a disgusting mess!)

The whistles that I had heard earlier are usually due to a faulty bypass capacitor somewhere in the front end of the receiver. Without a circuit diagram it was going to be difficult to localise the culprit. The caps were all so old that it was better to replace the lot, shotgun fashion — which I proceeded to do.

(Fortunately, these ancient components are all so large that printing their values on the body was quite easy. Most manufacturers did this, some on the paper wrapper or in the case of the

AWA mud type items, moulded deeply into the body of the capacitor. I thank those old designers for their thoughtfulness!)

When I had finished the replacements, I gave the set a quick re-alignment then connected the aerial. But wouldn't you know it? Those heterodyne 'birdies' were still there.

To cut a long story short, I tried every trick I knew to track down the cause of the whistles. I must have spent an extra two hours on the set, replacing replacements and twiddling and tweaking, but nothing seemed to be doing any good.

Then without warning, and for no reason that I could see, the fluorescent tube fell out of the lighting fixture under the shelf. It wasn't the sudden darkness that startled me — there was plenty of other light in the workshop. It was the change of tone from the receiver that was totally unexpected.

I replaced the tube in the fixture and the sound changed back to what it had been before the event.

Quite suddenly, I realised that the source of the noise I had been seeking was in the fluoro's power supply — it was some kind of cheap switch mode supply and it was radiating happily into any radio brought near it!

I checked with a couple of portable sets and each of them whistled merrily when brought within about a metre of

the light fitting while it was on. With the light switched off, the radios were as silent as the tomb. The little four valve mantel was working as well as it had ever done, and I had no qualms about returning it to its owner.

I have serviced hundreds of VCRs and quite a few small TVs on that bench, and never once has the radiation from the fluoro caused any trouble. And this time, if I had cleared a space on the normal bench, I wouldn't have had any trouble either. We live and learn, don't we?

Incidentally, I was looking through a collection of old service manuals when I came across the full manual for this very model. I had suspected that it was an AWA set, because of all the AWA capacitors, but there was nothing on the cabinet to confirm it. The only identification was the model number 520M. As it turned out, it was an AWA model and the only thing now in doubt is the year of manufacture. Perhaps I should ask Peter Lankshear...

Finally, I don't know whether the circuit diagram would have been of much value since all the capacitors (condensers, in this case) needed to be replaced anyway. However, I suspect that it was C5, a bypass on the AGC line that was the prime culprit.

Well, that's all for this month. If the fates are willing, I'll be back with some new stories next time. ♦