



The Serviceman

First aid (and last gasp) for an old TV set

By way of a change from my usual run of intermittents, mysteries, and curly ones from the work bench, here is what might best be described as a busman's — or serviceman's — holiday. Or, if you like, how to service a TV set with only the tools from the boot of the family car. (Who needs a soldering iron or multimeter?)

To be honest, this is not a recent story, it has been sitting in my files for well over 12 months now, and it was several months after the incident that I wrote it. I have passed it over on several occasions when more topical stories rated a higher priority. At least it's topical at this time of the year!

It all started when I decided to take Mrs Serviceman and other members of the family for a holiday on the NSW South Coast — to a very small town which boasts some facilities for boating, fishing and swimming, but with no TV service for miles around.

Knowing this, and having a few acquaintances in the area, I quite deliberately omitted to pack even a single item from my own service kit. I have learned from past experience that one can all too easily spend hours on TV service "dogs" for friends instead of spending the holiday in the way it should be spent — "beside the seaside ..."

When I inquired about TV in the holiday cottage, the owner assured me that it contained an old but serviceable black-and-white receiver coupled to an outside aerial. "It takes a while to warm up", he added, "but it goes orright!"

I guess I should have been warned. Sets that "take a while to warm up" are usually sets with a large complement of old, leaky capacitors and off-tolerance resistors — all liberally coated with gunk — which struggle towards some kind of workable state only after the prolonged application of voltage and temperature.

I did consider taking along a portable set of my own but, by the time Mrs Serviceman had packed all the things she regarded as essential, there was barely room for the kitchen sink! When we finally did arrive at our destination and I had time to switch the TV set on, I had

every reason to regret the omission.

The set was an ancient STC model, in a (once) handsomely designed and polished console cabinet, very deep, but with a 21-inch tube that still managed to protrude from the back. In its heyday, it had obviously been someone's pride and joy.

When I switched it on, I was greeted a few moments later, by a sharp crack as something "went over" — presumably due to the high warm-up voltage. Since it was not repeated, I left the switch on and waited for the picture to come up. Unfortunately, the old set was barely able to produce a glow from its screen, with a picture that showed very little inclination to lock either vertically or horizontally. The sound wasn't too hot, either!

Thinking of the landlord's warning, I left it on for a quarter-hour but it was still far from "orright": brightness and contrast had improved a trifle but we watched the news only by dint of riding the two hold controls. Even then, the picture seemed to be pulsating in brightness. Clearly, corrective

measures would have to be taken if we were going to have something to while away the evening hours. But how do you service a TV set without equipment?

At that point, I called round to the local general store to ask about the possibility of hiring a TV set for the next couple of weeks but the inquiry was met by a sad shake of the head. I was on my own!

There was just once chance that some of the troubles might be due to fouled valve sockets so, next morning, I looked out the only two tools from the car kit that were likely to be useful — a pair of long nosed pliers and a screwdriver with interchangeable blades.

Taking the back off the set, I peered inside ready to spot the arc-over and switched on. It went over right on cue inside a valve which turned out to be a 6AQ5 — probably the audio output stage. I switched off, pulled the valve out and tapped it smartly pins-down on the table, hoping to dislodge the cause of the flash-over. When I tried again, I was greeted with quite a pyrotechnic display which fortunately didn't last too long. Obviously there would be no more tapping — the valve would be better left alone!

Turning back to the picture circuits, I identified two or three valves that would most likely include the sync separator and the oscillators. One of them, in a sprung socket, seemed to be virtually frozen in and I had to prise it out carefully, in case too large a pull should remove the socket as well!

This done, I pushed the valves back into their sockets and worked them around a bit to clear poor contacts.

When I switched the set on once again, I was delighted to find that I could now lock the picture for a few minutes at a time, so that it was at least watchable. True, it lacked brightness and contrast, and the tuner didn't seem to make much sense, but at least the picture moved and talked!

Suitably encouraged, I visited the local general store and managed to buy a spray can of WD 40, which could be expected to de-louse and lubricate the sockets and expel moisture.



"You want me to fix it once and for all?
I'll do that, madam. I'll do just that!"
"TV Times")

One by one, I removed the valves, sprayed and wiped between the pins, sprayed the sockets and re-inserted the valves. I stress the "one by one", because it is all too easy to get valves mixed up, in the absence of a circuit and, in some cases, the absence of a decipherable type number on the glass envelope.

While doing this, I noticed that the area around the picture tube's EHT connection was completely fouled and, this too, was treated.

TUNER FIRST AID

And the reward for all this? A picture that had reasonable brightness, contrast and stability and that did seem to improve gradually, the longer we watched it. But, alas, the tuner was far from satisfactory and, to obtain a picture at all, one had to wiggle the switch and fine tune, often ending up with rotor deliberately partly out of its detent position. This looked like being a problem indeed because the tuner was inaccessible inside the cabinet and a frozen-on fine tune knob would have prevented the chassis being withdrawn. More immediately, it denied access to the cores through the front. So I sprayed it with WD40 and went for a swim.

That night, I managed to get the fine tune knob off, and, directing the spray through the valve sockets, other holes and now exposed core access holes, I gave the tuner a good drink, meanwhile working the rotor and fine tune controls.

And what a difference it made. Evidence of contact trouble disappeared and, using a screwdriver blade that was fortunately long enough and fine enough, I was able to peak the oscillator cores properly. As I had suspected, they were well out of position and the picture started to look really promising — except that at times it still seemed to oscillate somewhat in brightness. Why?

I woke up to the cause next morning when examination of the aerial showed that the ribbon down-lead had come out of the spacers and was flapping against the steel mast in the prevailing nor-easter. I couldn't climb the mast but a scrap of rope to a nearby nail was sufficient to hold the ribbon clear and steady, and it effectively steadied the picture.

There remained only the sound — somewhat distorted and with an obvious content of frame buzz. Most likely the discriminator core needed touching up — but where was it?

Looking along the valve line-up it seemed likely that a large IF transformer that I could feel but not see, with the chassis in the cabinet, would be the discriminator transformer. I could only hope sincerely that the designer had thought to make the secondary core the accessible

one.

And this seemed to be the case. Working by feel rather than sight, I turned the core in and out by repeatable amounts and found that a full turn in gave the result required — clean sound and no frame buzz. And at that point I called it a day.

I think that the set was still well short of optimum because, despite its generous IF line-up, it still had no contrast to spare, irrespective of the AGC adjustments at the back. But as I settled back and watched the sport, I was thankful for whatever the fates that made it possible to achieve an acceptable result with such limited facilities — screwdriver, pliers and a can of WD40!

But there has to be an epilogue to the story affecting this set and thousands of others of like vintage around Australia.

I was lucky in being able to extract temporary advantage from a superficial treatment but in no sense was the set "fixed". If it was to be put into a reasonably reliable state it would have to be given a complete on-the-bench overhaul. I would expect something like the following:

- Remove and dismantle the tuner, cleaning away the gunk that my WD40 treatment had merely loosened. Check all contacts and biscuits, valve sockets etc and reassemble. Either that or fit a replacement tuner.
- Check the video IF chain, almost certainly replacing off-tolerance resistors and leaky capacitors in the supply and AGC systems. Replace valves as necessary and possibly re-align.
- Ditto for sound IF system and replace the 6AQ5 output valve.
- Replace all off-tolerance resistors and leaky capacitors in the sync separator and vertical oscillator/-output stages to obviate residual vertical rolling tendency.
- Check and clean the entire line output and EHT system and determine why the picture did not come straight up to normal brightness. Perhaps the picture tube itself is reaching the end of its life!
- Check over other components and controls, reinstall in cabinet, set up picture for correct geometry, etc.

Now ask yourself how much all that is going to cost at normal shop rates and you will have some idea of the dilemma which faces owners of ageing receivers and servicemen who have to cope with them. They seem too good to discard but the cost of a complete overhaul equally seems prohibitive. The tendency therefore, is to keep patching them up until client or serviceman gives up.

It's bad enough for sets in the suburbs but what about those like the one I describe — 20 or more miles from the nearest service centre? No wonder new portable TV sets are selling so well! ●