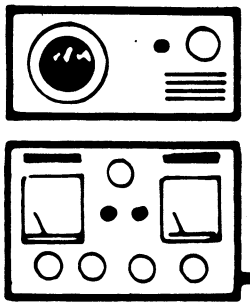

The Serviceman

First aid for an ageing B & W set — and its owner!

One of the less pleasant aspects of our modern society is the increasing frequency with which expensive appliances are being "knocked off", not only from factories and stores, but from individual homes. My first story this month was the result of just such an incident.

It involved what appears to be the most negotiable of modern appliances at the present time; the colour TV set. The victim was an old customer — correction; a customer of long standing, (he is not as old as I am!) and he was considerably shaken by the experience.

It was not only that he had lost a much prized 26in. colour set, though that was bad enough. It was made worse by the fact that the thieves had entered the house during the night, while he and his family were asleep, and calmly carried the set out the back door.

The thought of strangers roaming freely around the house, while its occupants are asleep, can be very disconcerting. Suppose some member of the household had awakened and disturbed them; would they have turned violent?

I am glad it was his experience and not mine.

(Even so, when I related the story to Mrs Serviceman, she insisted that we tighten up our own security — a deadlock in place of the old back-door bolt and some revision of our long-established habit of leaving windows open at night in unused rooms.)

Anyway, having unburdened himself, he came to the point of his visit. While the colour set was insured, and he had no doubt that the company concerned would do the right thing, it might take two or three weeks to straighten matters out; perhaps more if he was to negotiate for some make or model other than the one which had been stolen.

So he had dragged out his old 25in. black and white set, gathering dust in his workshop, set it up in the lounge room and hopefully switched on. Unfortunately, its performance wasn't very impressive. The first point he noticed was that it seemed to take an unusually long time to produce any picture at all and, when it did, it was, as he put it, "pretty wishy washy". Then, as an after thought, "And it was rolling a bit, too".

In fact, I remembered the set from the pre colour era: a G. E. model that had been very impressive in its day, with a near-rectangular 25in. picture tube and a neat walnut console. Too good to discard , it had been moved to a spare room, then to the workshop to serve as a second set. But members of the household, wanting to watch a show, gravited naturally to the colour set and the B&W model just never got used — and that isn't good for ageing electronic equipment!

I sensed that the owner was concerned about the likely cost of repairing the black and white set. Understandably, he was not anxious to spend a lot of money on something which would, most likely, be used for a couple of weeks and then be banished to the workshop again, and rarely switched on.

Knowing that he had a suitable vehicle I suggested that he could save on cost if he could deliver the set to the shop. Then I would have a quick look at it and not commit him for too much expense without further discussion. This suited him and the set was duly delivered a couple of hours later.

When I switched it on I realised what he meant; the picture struggled on to — rather than appeared on — the screen and, even then, was "wishy washy" or, to be more scientific, severely lacking in contrast and brightness. I noticed something else too; it was seriously overscanning horizontally, to the point where the first and last letters of long titles were completely lost.

These observations suggested a whole batch of possible problems, including low EHT for one reason or another, a sick (slightly gassy) picture tube, and loss of video gain somewhere between the aerial terminals and the picture tube drive. Other problems like the poor vertical locking and the tendency to frame buzz in sound might or might not stem from the lack of video gain.

First off, I took the back off the set, lowered the swing-down chassis, cleaned around the picture tube ultor and lead, and sprayed it with WD-40. Then I swung the chassis back up and did likewise with the entire line output and EHT circuitry, gently easing out the valves and spraying the sockets to defeat any corrosion build-up.

At next switch on, the raster looked somewhat brighter, although I was not certain to what degree I could credit my clean-up or improvement in the picture tube itself, from simply being turned on. Either way, I reckoned the picture would be watchable, if not brilliant, given adequate video drive. So that was the next thing to look at.

There could have been a problem either in the tuner or the IF system but, apart from somewhat scratchy rotor contacts, the tuner seemed to be behaving normally. Added to this was the fact that there was no sign of "noise" in the picture, which seemed to rule out the concept of a fully operative IF system vainly trying to amplify a signal from a faulty tuner. It was much more likely that the IF system was low in gain, resulting in very little signal and no noise either!

On this basis I went over the main circuit board, which is very accessable in this set, dusting it off, inspecting components, withdrawing the valves and spraying with WD-40. Five minutes later it looked virtually new but, alas, the picture was now so weak as to be barely discernable. So troubleshooting had to begin in earnest, and out came the appropriate book of circuits.

My very first measurement pointed up the trouble: the voltage on the screen of the 6EH7 first IF amplifier was precisely the same as on the supply line. Fairly obviously, the 6EH7 was drawing no screen current and, by inference, no plate current either, even though the heater seemed to be alight.

Suspecting the socket, I wiggled the valve — producing the immediate effect of a purple flashover inside.

Not surprisingly, a new valve brought up a fairly acceptable picture, which responded in the normal way to the vertical hold control.

(Curiously, the new valve did not draw much screen current either, but for a very different reason: the first valve couldn't; the second valve could but didn't, because of the AGC that was now being generated).

Fairly obviously, the original 6EH7 had a very slow air leak alongside of the pins and my earlier remark about the picture "struggling on to the screen" mirrored the struggle within the valve to cope with the invading air molecules. When I disturbed the valve in its socket, I accelerated the leak and that was that!

(If I am permitted a footnote in the middle of an article, these events preceded this epistle by a couple of weeks. In the meantime, the original 6EH7 has grown a white deposit inside the whole top of the envelope — a sure sign that it is now completely "gassy".)

What about the overscanning?

The service data reminded me that this G. E. set has no width control, as such, but the linearity coil can be peaked in two positions, the inner one giving less width than the outer position. Giving the threads a squirt of WD-40 to free them, I screwed the core in and set it on the inner peak. It reduced the overscan markedly, sharpened the picture and improved the contrast by simply reducing the effective "magnification" of the image.

A touch-up of the vertical picture geometry, a "squirt" into the volume control, and similar treatment of the tuner yielded a predictable and watchable picture, with just one remaining problem — frame buzz in the sound. With the aid of a digital voltmeter it was only a minute's work to re-peak the discriminator coil but the frame buzz persisted, varying with the nature of the picture.

Backing off the AGC preset markedly reduced the buzz but at the expense of available picture contrast, even with the main contrast control fully advanced. Obvious measures like changing valves in the sound IF system made absolutely no difference.

So, at this point, I rang the owner and told him of the position. So far, the involvement in parts and time had been relatively small (probably less time than it took to type out the story) and the result would be acceptable in the short term. If he wanted me to, I could spend more time in an effort to optimise picture and sound, but it was up to him.

No thanks. After having a good quality colour set, he couldn't generate much enthusiasm for black and white TV and he'd be quite prepared to settle for it the way it was. At least I hadn't tried to sell him a new picture tube!

So he duly collected the set, with the express hope that we would never have to repeat the exercise.

And, finally, a few words about the story in the accompanying panel. It was taken from a recent copy of the "Sydney Morning Herald", and provides an uncommon insight into electronic servicing behind the bamboo curtain.

While there are many aspects of the story worthy of comment — including the obvious one that there is always someone worse off than ourselves — the one that intrigued me most was the reference to the complications of job demarcation.

Maybe something was lost in the translation, but I cannot avoid a mental picture of one worker specialising in resistors, another in capacitors, and another — probably with a degree — in transistors.

In which case it would be easy to understand why servicing a set would be, to say the least, difficult. Do they work as a team, or does each check out his particular specialty? And if the latter, does he then submit a written report concerning the status of his components?

And who makes the final decision as to what is to be done? One could go on speculating indefinitely, but even these few sugestions are enough to make the mind boggle. Our system may not be perfect, but it has a lot of good points!

Happy end for faulty radio saga in China

from YVONNE PRESTON, in Peking

HAVING trouble with repairmen? Spare a thought for Comrade Yang Chih-hsin, a textile research worker from Shanghai, who bought a Peking-made radio for his sister in far away Tibet to keep her in touch with news from the big smoke.

Within two weeks of its arrival in Tibet in April the set had broken down. Mr Yang paid for it to be posted to Shanghai for repairs.

Over the next three months the radio made no less than six trips backwards and forwards from Shanghai to Tibet and still it did not work.

The cost of this exercise soon amounted to as much as the price of the transistor radio, and a desperate Mr Yang finally sent it back to the manufacturers in Peking.

He shortly received a not-too-polite letter from the factory comrades signed by the Revolutionary Committee.

"What on earth is wrong with the radio?" the letter demanded.

"Why couldn't the shop in Shanghai fix it?"

The letter went on to explain that assembling a radio was a complex job, there were many departments in the factory and job demarcation was very complicated.

"So we don't know what to do with your radio."

And, the letter added, Mr Yang would have to pay the postage for their letter and for any further communication from the factory.

Mr Yang admitted in a letter he then penned to the People's Daily that he did not know whether to laugh or cry on receiving this uncomradely blast.

"I give up," he wrote. The radio would simply have to serve as a "negative example."

But there was a happy ending. One morning last month, Mr Yang opened his door to find a group of people from the Peking radio factory's Communist Party Committee on the doorstep.

'Self-criticism'

There and then they made a "self-criticism", and presented him with a new radio.

The moral of that story can be gleaned from Mr Yang's letter of thanks to the People's Daily.

It was all due to the Central Committee of the party and to Chairman Hua.

"From now on," wrote Mr Yang, "I will bear Chairman Mao's teachings in mind and make every effort to realise the goal of surpassing the world's advanced level in the field of science and technology in the not too distant future."

It seems just a little unfair that it was the Peking radio factory comrades who enjoyed the free trip down to Shanghai, and not patient Mr Yang who got a trip to the capital.