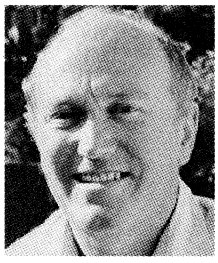
VINTAGE RADIO



By JOHN HILL

Making a few odd repairs

It often only takes a few simple repairs to keep an old vintage radio in working order. It helps if the valves are in their correct sockets, though.

About five years ago, I had a visit from my sister-in-law, Doris, who fell in love with – no, not me – my radio collection. She just had to have an old radio and wouldn't take no for an answer. What's more, it wasn't just any old radio she wanted; it had to be a nice big console model.

So we went to my storage shed and I dragged out a few likely contenders. Doris chose one that appealed to her and she seemed pleased with her choice because, even at that unrestored stage, the receiver was working and it sounded rather good.

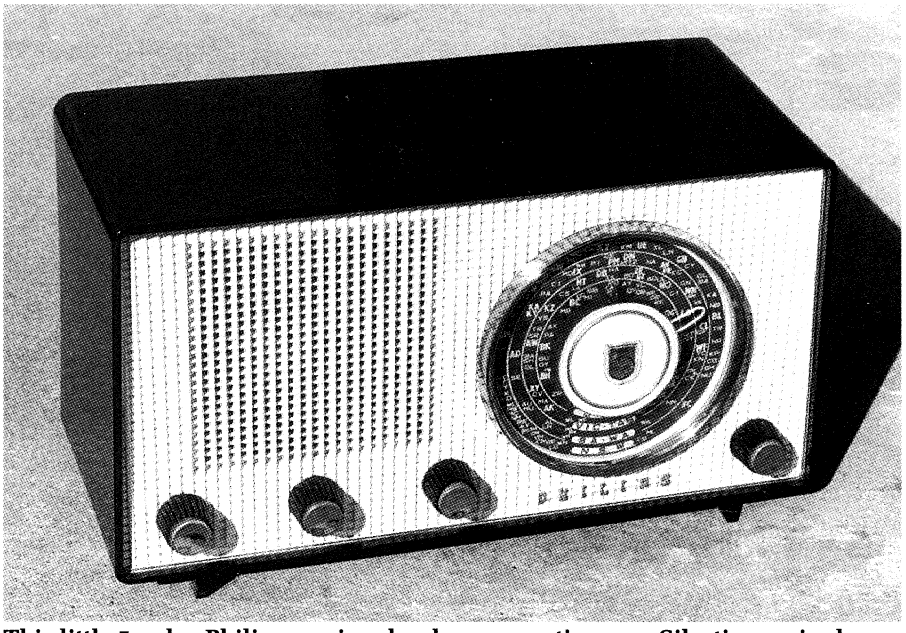
I was to restore the radio part while Doris' friend, Shirl, would refurbish the timber cabinet. It was not long before the fully-restored receiver was the pride and joy of the lounge room. Being a 1940 model (unbranded), it was made at a time when superhet development had reached its peak and this dual-wave set was indeed a very good radio.

In fact, as far as 5-valve receivers go, this particular one gives exceptional performance and it is really well designed. Its 10-inch (250mm) electrodynamic loudspeaker produces a good sound and Doris was more than pleased with her old radio.

However, what I didn't know for quite some time was that the old 5-valver was turned on at around 7.30 most mornings and was on all day until the TV news at night.

When I heard about that I nearly had a heart attack! I just couldn't help worrying about that half-century old power transformer running for 10 hours a day, not to mention the fine winding of the field coil and the valves which were only good secondhand units at the time of the restoration.

Well, to cut a long story short, the old receiver eventually packed it in and had a minor relapse. So after about five years of daily use, it found itself once again on my workbench for repairs. What I found was most interesting and well worth reporting.



This little 5-valve Philips receiver has been operating on a Silastic repaired speaker cone for the past seven years.

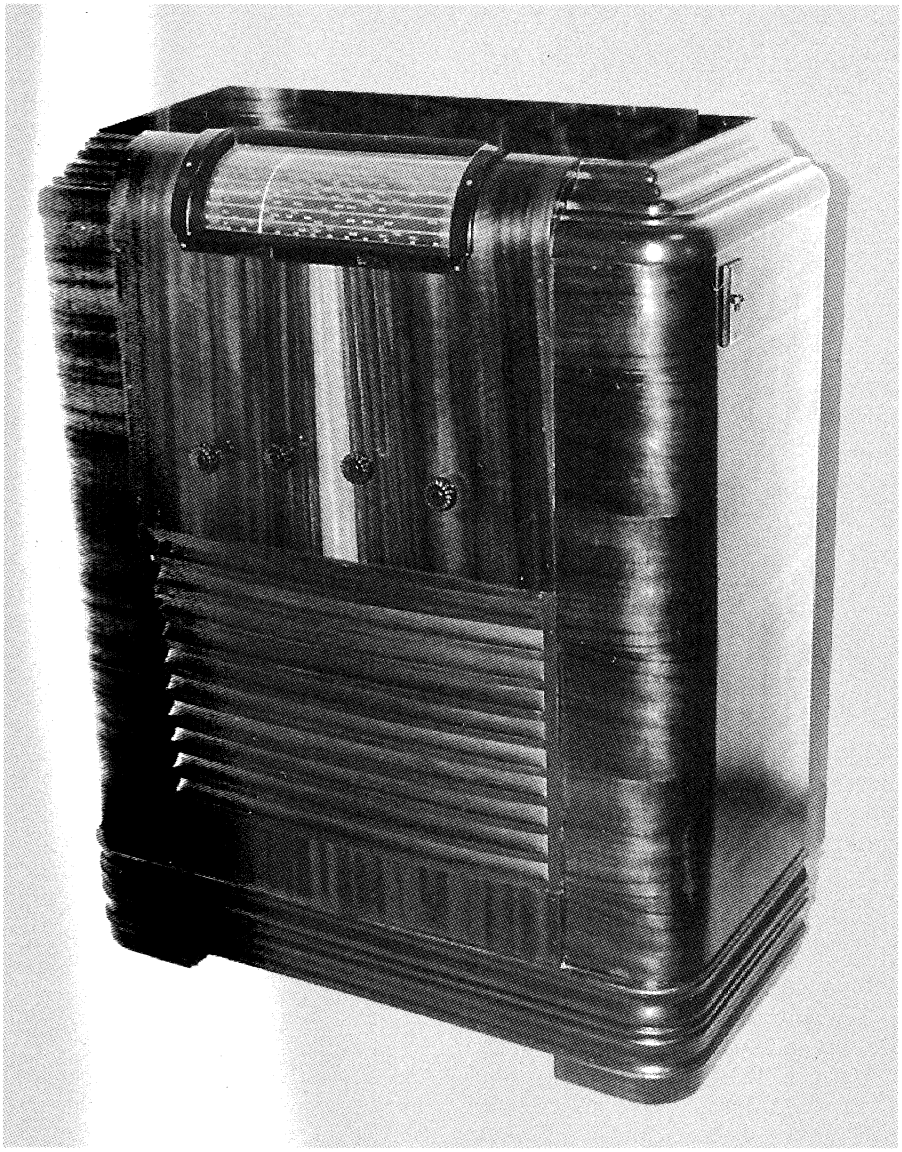
Weak sound

The main problem with the receiver was weak and distorted sound, which was quickly traced to an open screen resistor. Once the defective component was replaced the set fired up as it had always done and the ailment was completely cured.

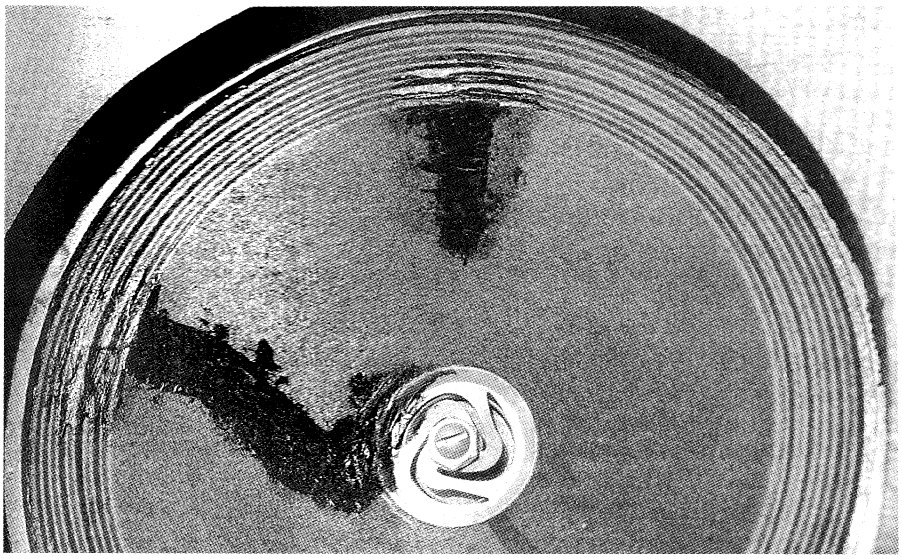
When I originally restored this receiver, I had marked the valve test readings on the valves. Despite the heat of the rectifier and output valves, the Texta pen markings were still there to read, as though they were written only yesterday.

The interesting aspect of this is that when the valves were tested again, they all gave much the same readings as five years ago. The 6V6 output valve had dropped from 80 to 75, the 6B6 first audio was down by a similar amount and the other valves were much the same as before.

This gives a good practical indica-



The console receiver that Doris "adopted" is a 1940, 5-valve, dual-wave unit with good performance. Shirl's cabinet restoration was a top job!



This particular speaker cone was split from rim to centre. The repair has not had any apparent adverse effect on its performance.

Dow Corning's Silastic is ideal for speaker cone repairs. It is tough, flexible and adheres to the paper cone very well.

tion of how long a radio valve can be expected to last, especially when it operates in a receiver that is working properly.

The original restoration saw the replacement all the paper and electrolytic capacitors. The resistor values were all OK and, as a result, the set has been working as it was designed to work. It was only the failure of a screen resistor that brought this good run to a halt.

Loudspeaker repairs

Another point of interest is the loudspeaker. Five years ago the speaker cone was starting to split at the outer edge and these splits were repaired using Dow Corning "Silastic". The type used was the automotive gasket formula – the one that smells like vinegar.

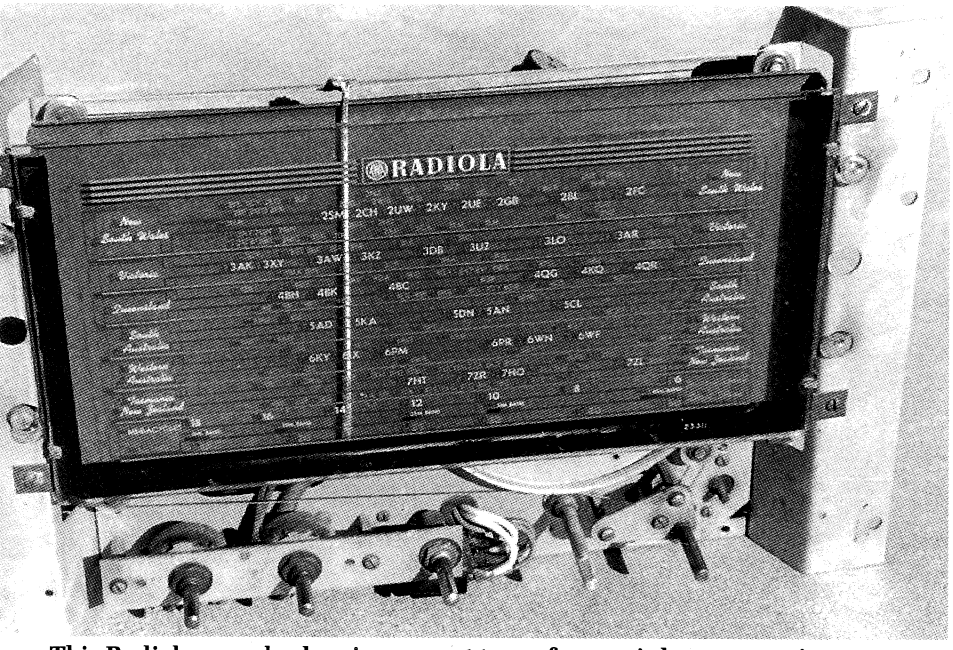
In this instance, the repair was still intact and looked as though it would remain that way for quite some time to come.

When applying Silastic to a speaker cone, it needs to be rubbed well into the paper for good adhesion and used as thinly as possible. Whilst this repair method has been mentioned before in this column, it was comforting to see a repair which has been in service for many years and showing no signs of lifting or cracking.

The speaker in our kitchen radio (a late 1950s 5-valve Philips) was also "bogged up" with Silastic about seven years ago. Although this repair has not been checked since, the set is still working OK so it is, presumably, another successful speaker cone repair.

Once again, the little Philips receiver is on for at least four hours a day and gets constant use.

I recently received a letter from a



This Radiola console chassis was sent to me for repair by someone in Queensland. Unfortunately, it was sent in without its loudspeaker and output transformer, which complicated the troubleshooting procedure.

reader seeking information about speaker cone repairs. In this case the speakers belonged to an old Hammond valve organ (drool!) and the inquiry sought my advice on a suitable repair method. Cigarette paper and shellac had been recommended but the person concerned was hoping I could suggest something better.

Once again, I recommended the Silastic treatment but what a test it will be in an organ. A nice loud 16 foot bass note will just about shake anything loose and that could include a smear of silicone rubber. Only time will tell?

According to some old repair men, speaker cones were traditionally repaired with paper and nail polish or paper and shellac. As far as I'm concerned, such a repair should be satisfactory on the main conical part but not on the outer edge or rim where the paper actually flexes.

Quite often the outer edge of the cone simply wears out and the rim starts to separate from the cone. This area needs to be mended with something strong and flexible and I have yet to find anything better than Silastic to do the job.

If the Silastic repair can be done before the rim starts to separate, it will be a better job than if the rim has already split. If the rim has split half way around the cone, then it is more difficult to do a neat repair job.

Incidentally, a wet finger will smooth out the Silastic and help to finish off the job more neatly.

The old Radiola

Quite recently, someone I have never met sent a radio for me to repair all the way from sunny Queensland.

This person assumed that there must be a repair man associated with the "Orpheus" Radio Museum in Ballarat who could fix his valve radio. So he sent the set to his brother in Ballarat who, in turn, eventually brought it to me.

In a letter to see if I would be interested in doing the job, it was stated that others had already looked at the receiver and the "expert" opinion was that it needed two new valves, a 6SQ7 and a 6V6 (apparently on the basis that these valves did not light up). If I could supply these valves, it should be all that was needed to fire up the old receiver once again.

I agreed to at least look at the radio and arranged a time. The set arrived and much to my dismay it was just a chassis without its loudspeaker.

The chassis was from an early post-war Radiola console, being a large dual-wave type with GT octal valves. A speaker lead wired directly into the chassis had a 5-pin socket on the end of it which connected to a 5-pin plug fixed to the speaker frame – a typical Radiola set up of that era.

As anyone who tinkers around with valve radios would know, one likely cause of failure in these receivers is the output transformer which is, more often than not, attached to the loudspeaker.

My immediate thought was, "I bet it is the output transformer that is at fault". But as it was interstate, I had no way of knowing!

I suggested that the chassis be left with me while I tried to work out the problem of the missing loudspeaker, the two valves that supposedly wouldn't light up, and anything else that might ail the non-functioning receiver.

When I finally found time to work on the old 5-valver, I was able to work through some of the mysteries quite easily.

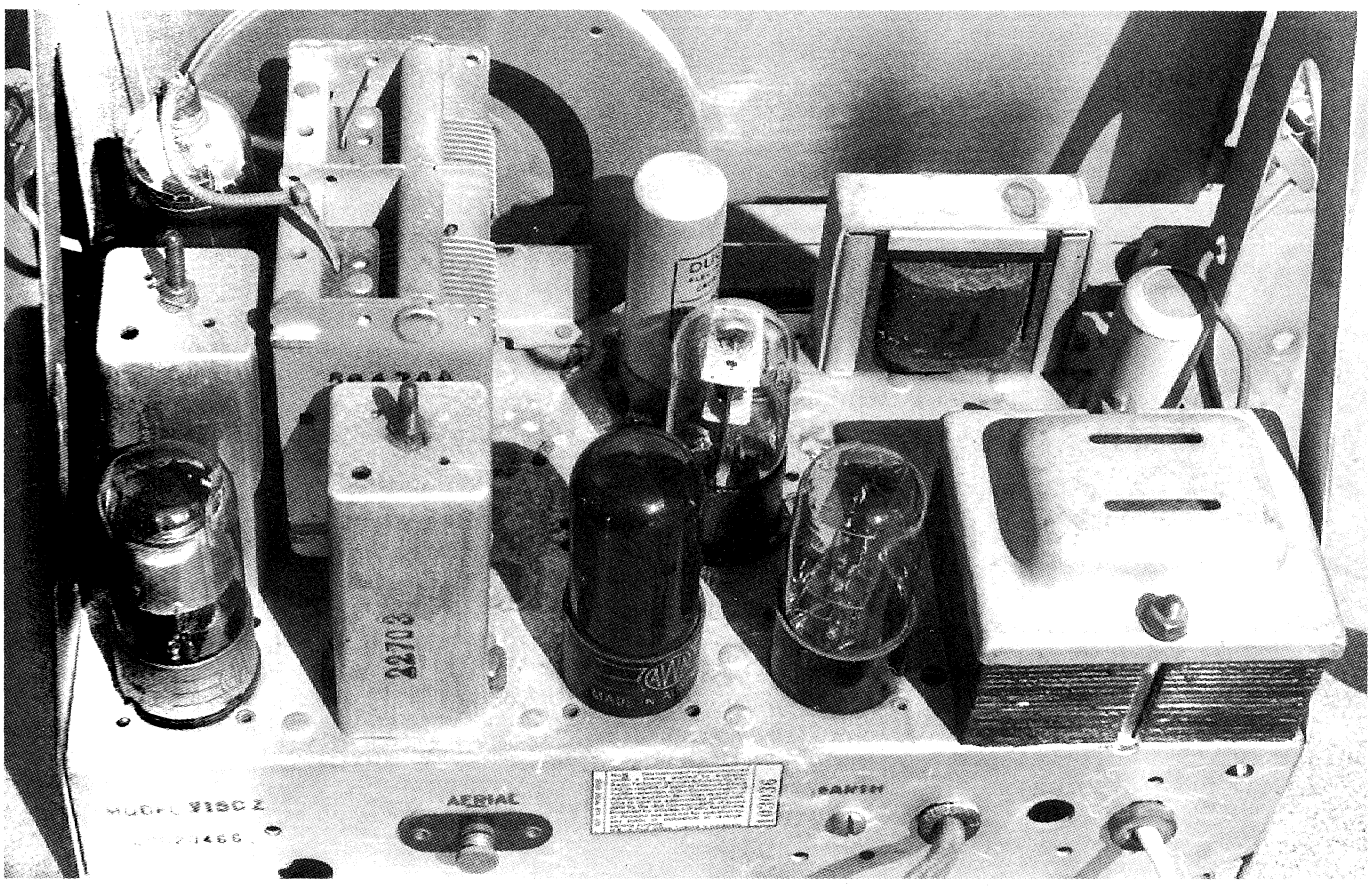
First, there were only three connections to the 5-pin speaker socket, with one of them going to chassis. This immediately indicated a permag speaker and not an electrodynamic type, as first thought. And a high tension filter choke mounted on the chassis confirmed this. It is amazing what you fail to notice until you have time to quietly check things out, without having some concerned person present suggesting what might be wrong.

The main problem was solved when it was discovered that the 6SQ7 and the 6V6 valves failed to light up because some "expert" along the way had put them into the wrong sockets.

And yes, you guessed correctly! When the valves were changed over and a speaker and output transformer substituted, the set burst into life without replacing a single component. So, once again, that left the output transformer as the number one suspect.

Now it is very difficult dealing with someone you don't know through a third person who may not be all that enthusiastic about being involved. Even so, I requested through the third party that the loudspeaker be sent to me so that I could check it out and fit another output transformer, assuming that my assumption was correct.

In the meantime, I would go ahead with the repair and replace the remaining paper capacitors, test the valves, renew the wiring that had perished natural rubber insulation, give it a tune up, a new dial cord and whatever else the old Radiola may require.



A rear view of the Radiola chassis. The old receiver wasn't working because two of its valves (the 6V6 and 6SQ7) had been transposed in their sockets. Once the valve problems were sorted out, it worked quite well, even with its original paper capacitors.

Several weeks went by before I was made aware that the owner was reluctant to send the speaker because he was sure that there was nothing wrong with it. The chassis was to be picked up that afternoon and returned to Queensland.

The Radiola was set up on the workbench for a final run so that it could be demonstrated when picked up later in the day. It was working OK sometime later when I left the workshop for morning tea but it was not working when I returned. What's more, there was a smell in the air that suggested something was cooking at a fairly high temperature. I was right! It was wax that was cooking and it was bubbling out of the high tension filter choke very nicely.

A high tension short was suspected – what else could it be? A likely suspect was the electrolytic capacitor on the output side of the filter choke. It checked out OK!

After eliminating a number of other possibilities, the fault turned out to be in the filter choke itself. While the winding was still intact, it was shorting to the core laminations which was most undesirable to say the least. A replacement choke solved the problem and the Radiola chassis was on its way to Queensland that afternoon.

I asked to be informed as to whether the loudspeaker worked when the time came to try things out. Eventually, I will find out if my original diagnosis was correct.

No guarantees

Wasn't it a stroke of luck for all concerned that the faulty filter choke croaked while it was still on my workbench? My reputation could have been ruined!

The choke failure is also a good reason why it is unreasonable to expect a guarantee with vintage radio repairs unless one replaces all suspect and likely-to-fail components and charges accordingly. Few are prepared to pay the price.

I work on a standard kerbside warranty. Once the owner's vehicle leaves the kerb, it's out of warranty! **SC**