

VINTAGE RADIO

By JOHN HILL



The gentle art of scrounging valves

Although many valves can still be purchased new, they tend to be expensive and some types are no longer available. Scrounging and checking secondhand valves is therefore an important part of vintage radio restoration.

Vintage radio and valves go hand in hand and to think of one will automatically include the other. For this reason, valves are a fairly common topic for discussion among vintage radio collectors.

However, as far as some people are concerned, valves aren't worthy of conversation. To these anti-valve types, the word "valve" often conjures up nightmarish thoughts of trouble, inefficiency, unreliability and shattered glass.

To some extent all these com-

ments are true. Valves can be troublesome, they are very inefficient, not as reliable as some modern equipment and they certainly are fragile — particularly if dropped. But there is another side to the old thermionic valve and I believe that they are not as bad as some would make out.

As far as the humble domestic radio receiver is concerned, nothing does a better job than valves. Solid state radios may be more reliable and more energy efficient

but not necessarily better in performance. A good valve receiver takes a lot of beating.

The valves used in valve radios also give relatively little trouble. As a collector of old radios, I know this to be correct due to the number of radios in my collection that still have the same valves as when I first acquired them. When it comes to a 40-50 year old radio that doesn't work, it is more likely to be something other than a valve that is the cause of the trouble. Valve radios can work for 20 years or more on a daily basis without as much as a hiccup in their performance.

Grandma's Radiola

When I was a lad in short pants my grandmother left her 1936 5-valve Radiola console with us when she moved to Queensland. Grandma moving out was one thing but leaving her wireless with us was an added bonus.

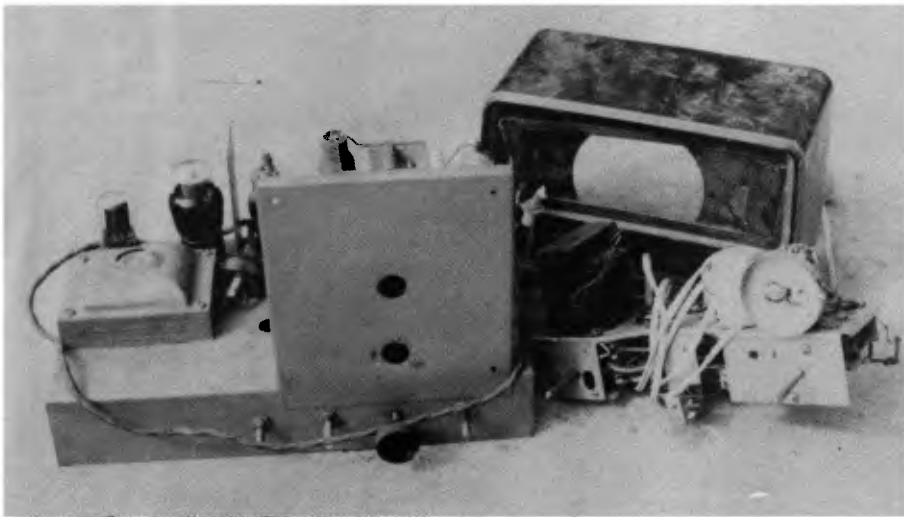
That old Radiola was in use for at least another 15 years before I left home in 1959 and it was never serviced during that time. My father did remove the chassis from the cabinet on a couple of occasions but only to remove dust from the dial — hardly a serious problem.

Only eight years ago my brother took the old Radiola to its final resting place (the tip). Although rather dusty and shabby in appearance, the set was still working. What's more, to the best of my knowledge it was still on its original set of valves.

Unfortunately, I wasn't interested in vintage radio at the time and I actually helped to load the old receiver onto the trailer that was to take it on its last journey. (Sob!).



Most secondhand valves from derelict radios will still work OK and are much cheaper than new replacements. In addition, it may not always be possible to buy certain valve types, so building up a good stock of secondhand valves is an important part of vintage radio work.



Don't throw out "junk" like this. Receivers in this condition are a good source of supply for old valves and many other valuable components as well. If a valve works, it is worth keeping.



This photo shows just part of the author's valve collection. It's amazing the number of old radio valves that are still around, both new and used.

Grandma's Radiola is just one of many radios with similar histories. My 9-valve Astor Concertmaster radiogram was still going five years ago at the age of 30 years. It too was in entirely original condition with the exception of a rectifier valve that blew a filament when the set was only a month old. Although I sold the old Astor some 25 years ago, I have known of its whereabouts until quite recently.

The failure of a near new component (the rectifier in this case) is a characteristic not only of valves but a good many other electronic devices as well. If a valve is going to give trouble it will most likely break down quite early in its life. If it

survives for 12 months without burning out, then there is every possibility of it working for a considerable time.

In many instances, an old radio was banished to the shed or the tip not because the valves became weak or the set stopped working, but because it became shabby and no longer suited the decor of the room. In some cases, these discarded radios were still working reasonably well on their original valves.

Generally speaking, most used valves from dumped radios will still work OK and are quite serviceable. No doubt some will be damaged, weak or faulty, but an incredible



Radio valves became progressively smaller as time progressed. Whatever their age, all newly acquired secondhand valves should be checked in a valve tester or in a working receiver to determine their condition.



Although all of these valves burnt out long ago, they are just too interesting to throw away. The one on the left was the subject of a 1921 Australian patent.

amount will test OK and still have a useful service life.

Although most radio restorers would prefer to use new valves, they are not always available nor are they cheap to buy. Often, secondhand valves will be the only practical replacements.

Derelict radios

I have bought a considerable number of totally derelict radios that have been real bargains as far as their valves were concerned. When one pays a few dollars for a wreck with four or five near new

valves in it, he has done very well. Good luck has smiled on me this way on many occasions but I also believe there is a reason why so many old radios have perfectly good valves in them.

During the war years there was little or no production of radios or radio components for the civilian population. After the war, large numbers of pre-war radios were given a long overdue service which, in many instances, would have included a new set of valves. For various reasons (perhaps the purchase of a more modern radio,

radiogram or the coming of television), these reconditioned receivers had very little use and soon found their way to a dusty shelf in the back shed. There they sit until 40 years later I and other enthusiasts come on the scene and buy them at garage sales — still with their perfectly good valves.

Another reason some old sets have near new valves in them is the fact that many homes had more than one radio. In those circumstances, the kitchen radio did 90% of the work while the lounge room radio may have only been used occasionally. In fact, I have a 1933-model console radio that still has its original valves and they all test as new. The cabinet is old and shabby but the set has been used very little during its life.

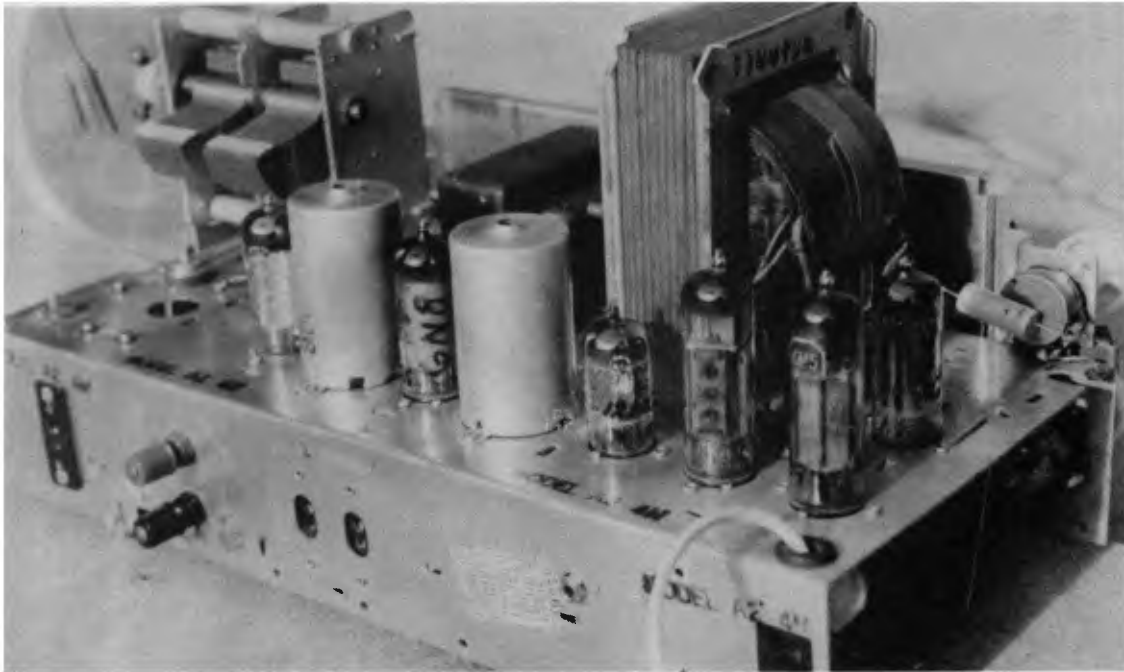
Listening habits

Listening habits were different 50 years ago compared with today. In the early days of radio, a receiver would be turned on to listen to a specific program and turned off when it had finished. Today, a radio (or a television set) is often left on all day whether anyone is listening or not. Also, the advent of television and portable transistor radios created a climate where the older valve radios fell from favour and were simply not used.

Newcomers to vintage radio may wonder at what point a valve is considered serviceable and when it's not? As far as I'm concerned, a valve has to be really bad for me to discard it. There will come a day when any valve in working order will be valuable.

A valve tester is perhaps the easiest way of determining the usefulness of a secondhand valve. The tester measures the cathode emission and if emission is down, so will be the valve's remaining life span. A good valve tester will also check each individual basepin and can therefore pick up a faulty pin connection.

An old hand at radio and TV repairs once told me that all a valve tester does is convince you that you ought to throw away perfectly usable valves. I don't believe that statement to be totally correct, but there is an element of truth in it just the same.



Valves can be tested in a working radio, provided of course that you have a receiver that uses the valve type to be tested. For serious work though, it's best to acquire a valve tester, particularly for checking rectifier and output valves.

A valve tester can quickly indicate whether a used valve is near new, just about clagged or somewhere in between. When it comes to output valves and rectifiers, this information is worth knowing. These valve types need to be in good condition if a set is to perform well.

One of the reasons for needing a good rectifier valve is that as the valve's efficiency (emission) drops, so does the high tension DC voltage. A radio never works well under these conditions and the usual consequence of reduced high tension is

a considerable reduction in volume and general performance. What's more, if the rectifier valve is weak, there is a good possibility that the output valve will be in a similar condition and may also require replacement.


Secondhand valve collections are likely to lack certain types of valves because some are more likely to fail than others. As previously stated, output valves and rectifiers are often rubbish bin material once their emission drops off. In addition, frequency changers such as the 6A7, 6A8, ECH 33-35, 6J8, 6K8,

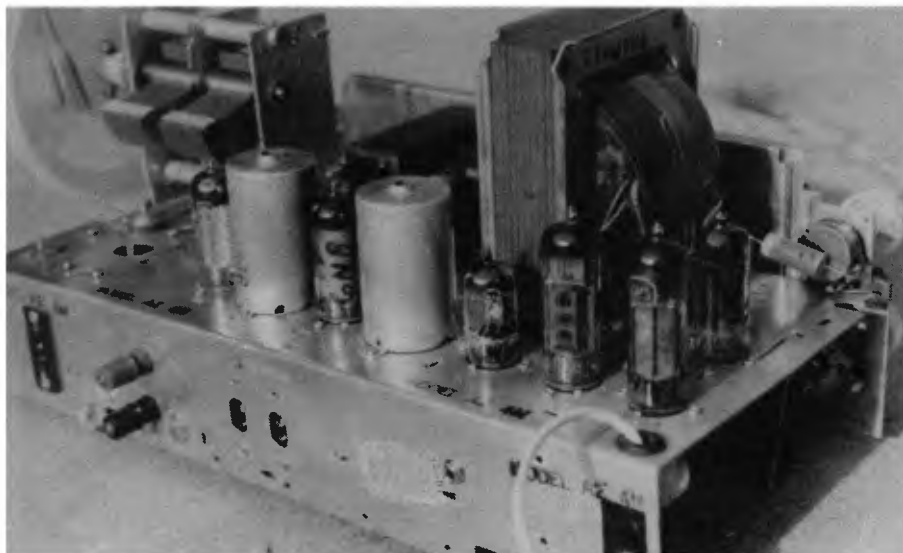
6AN7 & 6BE6 etc are more likely to have faults than other valves due to their fairly complex construction. Battery valves are also in the high risk category due to their relatively short life and somewhat delicate filaments.

Another point for the vintage radio collector to ponder regarding the use of secondhand valves is just how often will a particular set be used? Some of the receivers in my collection can go several months at a time without use and may be used for only a couple of hours over a 12-month period. Under such conditions — how good do the valves need to be? Are new ones justified when good used ones will work just as well?

For all these reasons, a valve should really be on its last gasp before it is discarded.

Nevertheless, secondhand valves need to be thoroughly tested, either in a valve tester or a working radio receiver. Valves are made to very close tolerances and the internal components are quite fragile. If valves are treated roughly or dropped, these internal components can become dislodged so testing valves is an important aspect of vintage radio restoration.

Next month, we will deal with the various types of valves the vintage radio restorer is likely to encounter and discuss their applications. 



A valve tester, such as this Palec, is the best way of testing emission levels and checking for internal faults and short circuits.