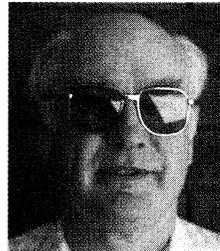


VINTAGE RADIO

By RODNEY CHAMPNESS, VK3UG



An Australian-made 6-transistor personal portable

Yes, early transistor radios are now vintage and are worth restoring. One such receiver is the Kriesler 41-32, an Australian-made 6-transistor "pocket" radio that was first made in 1962.

Transistor radios started to become readily available (at a price) in the mid to late 1950s. Initially, their performance left much to be desired. However, the general public was prepared to accept performance that was inferior to the good valve portables of the time in favour of a set that was relatively compact, light and portable.

Another factor in favour of the transistor radio was that it operated from low voltage batteries at low current drain and so was cheap to run.

In city areas, the problems of poor sensitivity and noisy operation (due to limitations in the transistors) were of little consequence as the stations were strong.

In many ways, it was a blessing in disguise that the sensitivity was poor. The overload characteristics of these sets and the transistors they used were, to put it mildly, terrible.

Imported sets

Very few radios were imported into Australia until the commencement of the transistor era over 30 years ago. Australian-made valve radio were as good as any and there was no need to import sets from elsewhere. However, transistor sets started to come in from Asia in increasing numbers from that time.

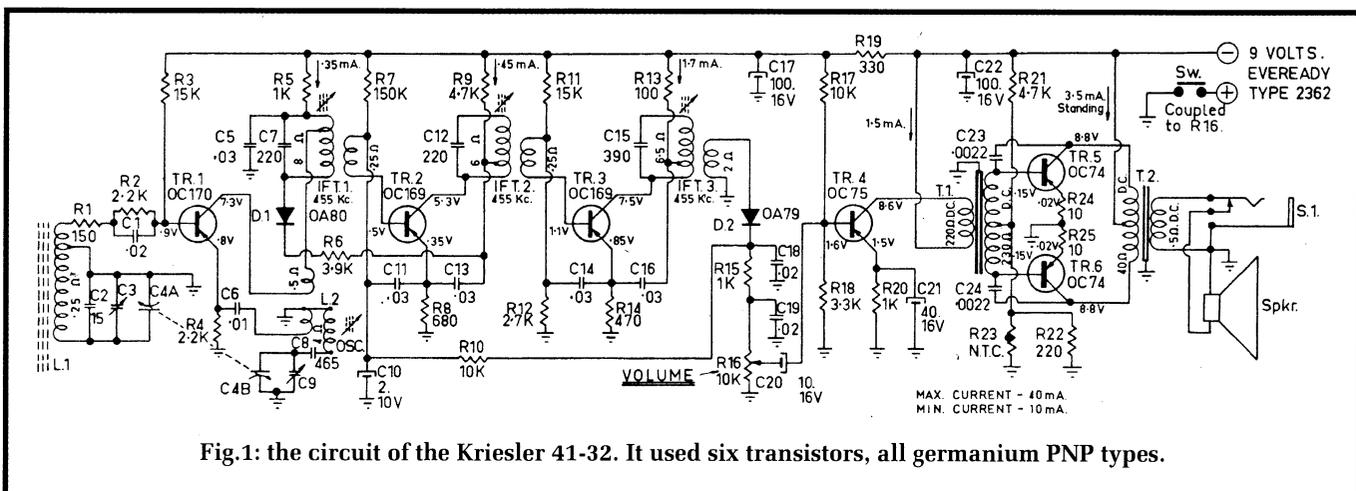
Initially, some early Australian transistor sets used point to point wiring,

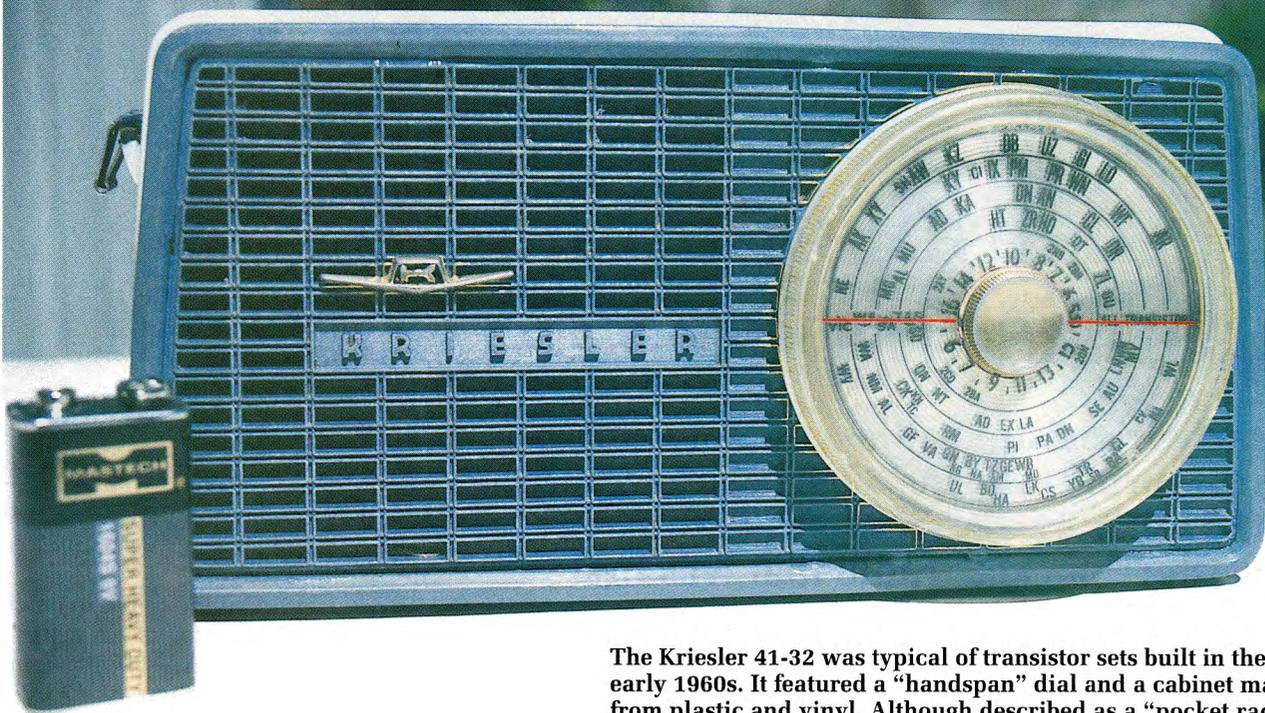
as was used in most valve radios. By contrast, the Japanese sets used PC boards right from the beginning in all the sets imported here. Transistorised radios lent themselves very much to the use of PC boards.

Transistors could be wired in much the same way as resistors and capacitors and all the coils had become miniaturised by that time too. As a result, this type of construction became the standard within a very short time.

The PC board method imposed difficulties for servicemen, however – particularly when they had to service Japanese pocket sets. Everything was crammed in, it was difficult to trace the circuit and the type numbers of transistors, etc, were unknown to Australians. As a result, it was difficult to do much with them if something went wrong.

By contrast, many of the Australian manufacturers laid their boards out with more space between components and they often printed the track pattern on top of the board to aid circuit





The Kriesler 41-32 was typical of transistor sets built in the early 1960s. It featured a “handspan” dial and a cabinet made from plastic and vinyl. Although described as a “pocket radio”, quite a large pocket would be required to carry it.

tracing. This made it much easier when the set required repairs.

One of the bugbears of servicing or restoration is dismantling the sets to work on them. Some sets are easy to dismantle and reassemble while others are a nightmare. Regrettably, many transistor sets were horrors to work on and, as a result, were consigned to the rubbish bin before many older valve sets!

The Kriesler 41-32

The Kriesler 41-32 was put into production in 1962 and is a typical Australian made 6-transistor pocket radio. A large coat pocket would be needed to carry it though.

It is quite a reasonable performer, being considerably better than the first 6-transistor sets that came onto the Australian market. It used the later PNP germanium transistors in the RF and IF sections – namely the OC170 and OC169 transistors – instead of the OC44 and OC45 types used in the first Australian transistor radios. A larger than normal ferrite loopstick aerial was also used to improve the performance.

The set doesn't compare favourably

with transistor portables that have an RF stage, however. It wasn't meant to be used in other than suburbia and, in this role, it does the job quite well.

Inside the set

The photograph of the back of the set shows that it used both full-size and miniature components. The tuning gang is full size, as is the trimmer capacitor and the on-off volume control.

A circuit diagram was pasted onto the back of the set, which was a good idea. The circuit is relatively simple and has both voltages and currents marked on it. This helps to make servicing easier.

The set uses PNP germanium transistors throughout. I don't know about others but I find that working with PNP transistors requires some mental gymnastics for me to remember that the collector (equivalent to the plate of a valve) is negative with respect to the chassis or emitter (cathode in a valve). NPN transistors work the other way around and the voltages are like the convention we got used to with valves.

Having said all that, how easy is the

set to dismantle and keep operational whilst doing the service work? Not at all easy as it turns out. There are three screws and one nut to undo (as shown by the white arrows on the photo) and then the PC board can be lifted up after unclipping it at the righthand end of the cabinet. The disassembly notes in the set say “lift board from cabinet to limit of the leads”. This is fine as far as it goes but the board can't be worked on in this condition, as the leads are not long enough to give easy access to both sides.

With a little more thought it could have been made a dream to work on. If the board had been made so that it hinged at the end nearest the tuning gang, the tuned circuit leads would not have to move much at all. At the righthand end is the audio section and the leads could have been longer and dressed so that the board could swing out at right angles to the cabinet. It would then act as a prop to stop the set falling over and service would have been a breeze under these circumstances.

It wouldn't be all that difficult to modify the lead dress to accomplish most of this but it is always harder to

do as a modification after manufacture.

In the process of overhauling this set I ran into a real problem. The tuning gang had both sections shorting at various spots across the dial. I tried bending the moving plates with it in situ but couldn't get it so that no shorts were occurring. It had to come out but how could that be done?

It was not possible to gain easy access to the screws holding the gang onto its mounting plate, as they were behind the aluminium front mounting plate. In the end, the whole set had to be dismantled and I ended up with a collection of parts on the workbench, all held together by a few pieces of wire.

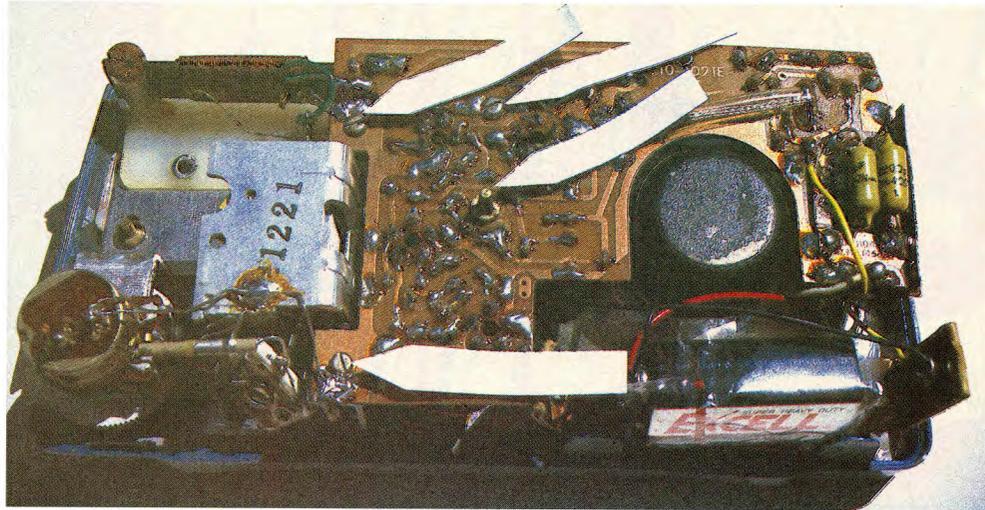
I decided to remove the dial scale on the front of the set as it would need cleaning. After prising the retaining clips away from the plastic dial scale, it came away. The retaining clips were on a circular plastic plate mounted with three screws to the front of the set. Removing this plate revealed two large holes through which I could have gained access to the gang mounting screws! This would have saved me quite some time if I had known this beforehand.

Kriesler's method

The Kriesler Technical Service Information does describe a technique for removing the works in such a way as to have the set still operational. To do this you remove the tuning knob, remove the three nuts securing the aluminium gang bracket to the front escutcheon and release the board from the bracket on the speaker end of the receiver.

The board, complete with gang, volume control and loopstick antenna can then be lifted clear to the limit of the speaker leads. Unfortunately, they missed out on telling servicemen to remove one nut in the centre of the circuit board.

Yes, this will work although in my opinion the method I described earlier is much better. Even so, if I'd had this information earlier, I might have got the set to pieces with less trouble. The screw threads seemed to bind to the aluminium and the nylon and it



The Kriesler 41-32 used a mixture of full-size and miniature components, the full-size parts including the tuning gang, the trimmer capacitor and the combined on-off/volume control. The PC board can be lifted clear from the case by removing three screws and one nut, as indicated by the cardboard arrows.

was troublesome easing the gang assembly out of the set.

After that short story on how to remove a gang, I'll get on with how I fixed it. After a lot of mucking around, the plates were bent so that no shorts occurred at any position of the gang. This was confirmed using a multimeter.

It appears that in the past, someone slipped with a screwdriver or some other tool when working on the set and actually damaged the gang. Having fixed that, the set was a goer and after touching up the alignment, it performed quite well.

Batteries are a problem for many of these sets as specials were made for quite a few brands and models. This set used a small 9V battery called a 2362 which is no longer available (and which would probably be expensive if it was). So what could be used in its place?

It would have been nice to use six penlite cells but a pack is just too big to fit in. The only alternative is a 216 which will fit in but with a current drain varying between 10mA and 40mA, it won't last long. One of the heavy-duty alkaline types may be worth considering if the set is to be used for entertainment as well as being a vintage radio exhibit.

Cabinet problems

The plastic and vinyl components of the cabinet were in fairly ordinary condition, which is now normal for these sets. I used some form of

superglue to lock several screws into position into the plastic front escutcheon (several had come loose and it made it hard to tighten the nuts on them). Several other parts on the front of the set had to be glued as well.

Cleaning the vinyl is a problem as even soap and water causes the paint on it to come off and the set then looks a bit weather beaten. It's a matter of cleaning it and have some of the paint on the vinyl come off or leave it dirty. Neither alternative is particularly impressive. As a result, these sets cannot be made into beautiful pieces of furniture like the wooden consoles often are.

Summary

So there it is – an old “pocket” 6-transistor radio of Australian manufacture. It's a reasonable performer and although it can't be made to look a million dollars, it's worth restoring because of the era it represents.

One question that remains is where do you get transistors if they are ever needed for replacement purposes? Germanium PNP transistors are available from time to time at flea markets, etc, but they are not as easily obtained as valves. In some circumstances silicon PNP transistors can be used if the operating conditions are changed to suit. The forward bias required for a germanium transistor to conduct is about 0.2V but for a silicon transistor, it is about 0.6V.

This issue will have to be explored in depth at a later time. **SC**