

VINTAGE RADIO

By JOHN HILL



Transistor radios are collectable

Early transistor radios are now considered collectable items by many vintage radio enthusiasts. They can also be used to “restore” irreparable and incomplete sets to some form of working order.

“Solid state” and “transistorised” are words that do not often appear in this column. When it comes to transistors, yours truly would have to look up a book before attempting to wire one of those tiny components into a circuit. As far as electronic technology is concerned, I am at least a quarter of a century behind the times.

However, solid state equipment was not invented yesterday and some transistor radios have now been around long enough to wear the vintage radio classification. They have been with us for 30 years now and there is no reason why some of the older sets

should not be preserved with the same enthusiasm that collectors bestow on valve type receivers.

Many early transistor radios were very good. They performed well and were made to last, so why not collect some of them while there are still a few to be found?

The foregoing should be sufficient justification for bringing transistor radios into this month's Vintage Radio column. Early transistor radios can be both interesting and collectable. Granted, many have battery problems but these are relatively easy to solve.

In fact, perfectly usable transistor

radios are often discarded for no other reason than the non-availability of a suitable battery. Most early transistor radios were designed for battery operation only and were powered by one of several types of large dry batteries. While some of these batteries can still be purchased, they are not readily available and their cost is prohibitive. Also, because they are now made in India and are not date stamped, the chances of buying a fresh one are fairly remote. The following story is an example.

The \$24 battery

My friend Ron came to see me with an old Kriesler transistor radio in one hand and an Indian battery in the other. He had bought the battery at a hardware shop in a remote country town while he was on holidays. After arriving home he found that the battery had clip-on connectors instead of the usual 2-pin socket. He hoped that I could do something to sort out the problem.

Upon examining the battery, two things came to notice. First, the price tag of \$24 nearly took my breath away. Second, the battery felt all lumpy inside, which immediately suggested that all was not well.

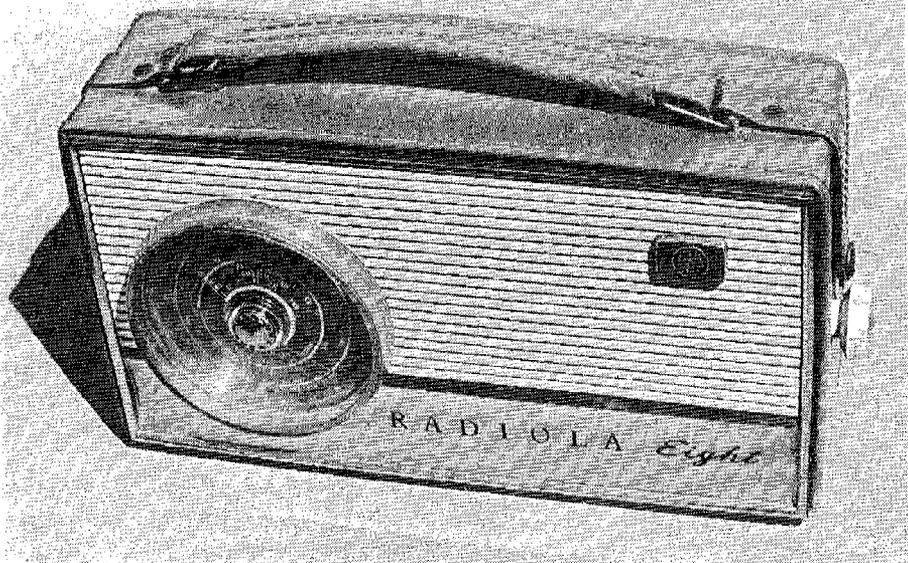
A check with a multimeter confirmed that the “new” battery was very sick indeed. Ron had been sold a brummy battery and it would cost him more than \$24 worth of petrol to take it back to where he bought it.

What really surprised me was the fact that Ron apparently didn't think that the battery was expensive. “They usually last six to eight months, so that's not too bad really”, was his comment. Compared to the price of six torch cells, it seemed outrageous to me.

Anyway, my immediate problem



These two old HMV transistor radios are part of the author's collection. The one at the front has been converted to mains operation using a 9V DC adaptor.



Why not collect some old transistor radios while they are still available? This neat little set is an AWA Radiola Eight which was a very early 8-transistor radio. Many early transistor radios were quite good performers.

was to get Ron out of trouble and I did what anyone else would have done. I converted the set to accept a 9V "AA" pack consisting of six "AA" cells in a plastic 6-pack holder (see photo). This involved nothing more than replacing the 2-pin plug with a snap connector and adding a piece of foam plastic to take up the extra space and prevent the battery pack from rattling around inside the case.

The disadvantage of such a conversion is that the battery capacity is considerably reduced. However, the choice of heavy duty alkaline cells would help offset this. Anything is

better than paying megabucks for a stale Indian battery.

Now one would expect Ron's battery story to end there - but not so!

The very next day after doing the battery pack conversion, I was telling a friend about the \$24 battery and where it was bought. As he was going there the following week, he offered to take the battery back and try to get a refund. Which he did - successfully. You can imagine how pleased Ron was to have his money refunded.

Perhaps the most interesting aspect of this part of the story was the fact that the battery was on the shelf when

the current owner bought the business some two years previously. It is anyone's guess as to just how old the battery was when it was purchased.

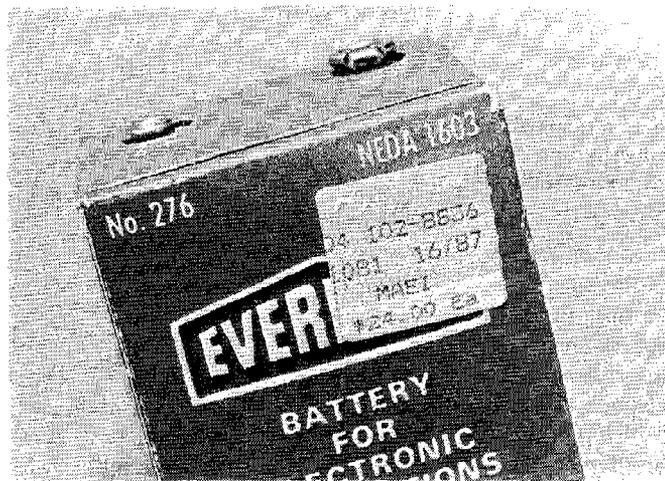
Some 25 years ago I was interested in flying radio-controlled model aircraft and, at the time, used dry cell powered single channel equipment. Oh boy, is that a story in itself - and a vintage radio story too!

However, the point I am trying to make is this: I never bought batteries without checking them in the shop with a multimeter first. There was too much money flying around in the sky to lose it all because of a faulty battery. There is nothing like a "flyaway" to ruin a good afternoon on the flying field. Observing the experiences of others taught me that just one faulty battery can have very expensive consequences.

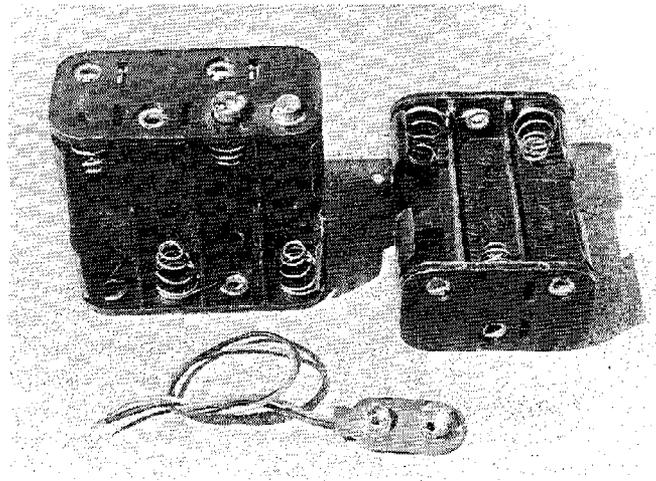
Converting to mains power

Making up a suitable battery pack for an early model transistor radio is not the only way out of trouble. Converting them for 240V operation is another alternative and this can be done in a number of ways.

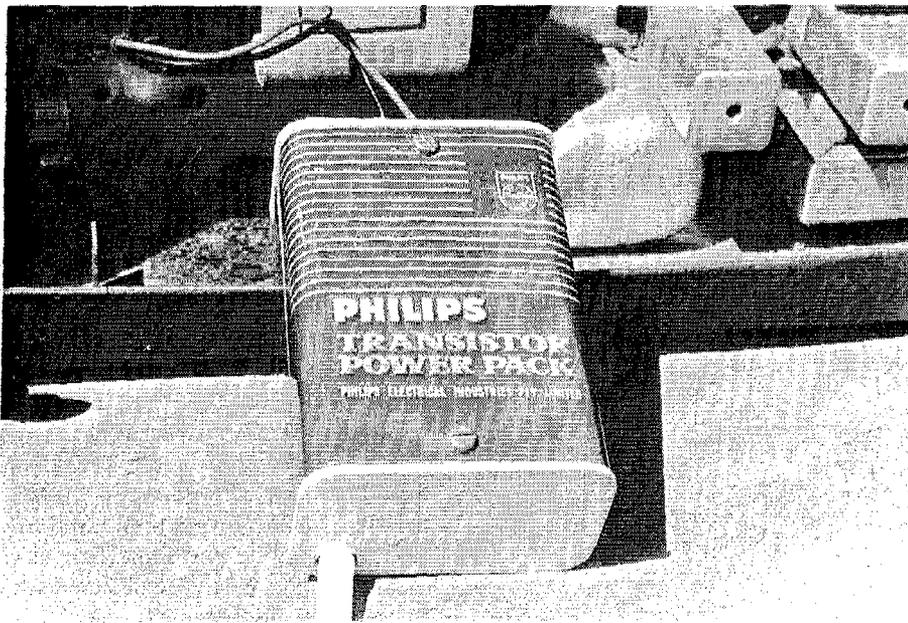
Back in the days when these receivers were popular, a special power supply could be bought that fitted straight into the battery compartment. This power pack contained a power transformer, diodes and smoothing capacitors to give a hum-free output. It was approximately the size of the original battery and had a 2-pin socket at one end to accept the standard 2-pin plug of the receiver. Converting a battery



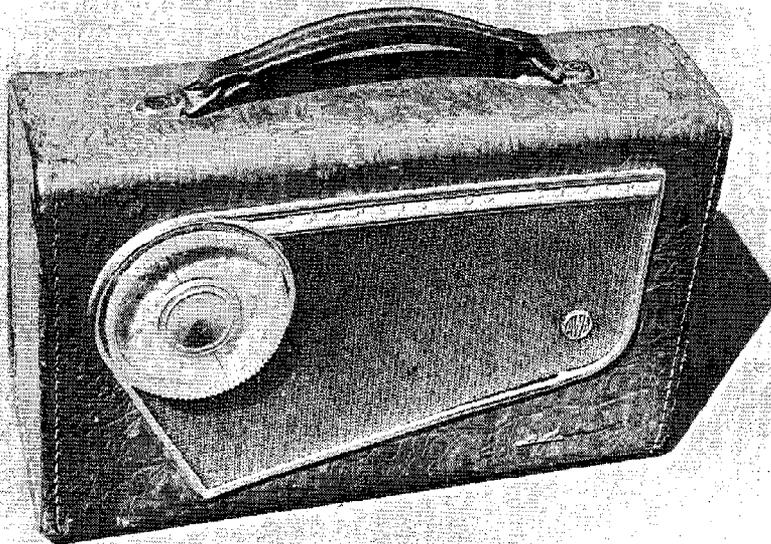
Although now difficult to obtain, batteries for early transistor radios can still be purchased - if one can afford them. This type of battery is now made in India and, because they are not date stamped, the state of the battery is questionable even when new.



Conversion to AA-size battery packs is the easiest way to overcome battery problems in early transistor radios. Because most sets run off 9V, the 6-cell pack is the most useful. Heavy-duty alkaline cells will give the best life and should be used if possible.



This old Philips "Power Pack" made it easy to convert a battery radio to mains operation. It fitted directly into the battery compartment and contained a mains transformer, diodes and filter capacitors to give a hum-free output.



This AWA "Transistor Seven" is similar to the one that was used as a transplant in two old valve radio cabinets. Although the transplants worked satisfactorily, each cabinet was later re-converted as soon as valve chassis became available.

radio for mains operation was as easy as fitting one of these units.

It is unlikely that such a power pack would still be available today, as modern transistor radios no longer use the large batteries of yesteryear. Today's pocket size devices use the much more convenient torch cells.

Another way to solve the problem is to use an adaptor or power pack of the type used to run small low power battery appliances. These were very popular when calculators used LED

displays instead of the now more common liquid crystal displays.

The old LEDs consumed a considerable amount of power and most calculators of that era were fitted with a socket so that a power pack could be used to operate them independently of the battery. However, many of these old calculators ran on three or six volts, so one needs to check the power supply before using it for a radio. Some early radios operated on 6V but a 3V supply would be of little use.

Any 100mA power pack of the appropriate voltage can form the basis of a supply for a transistor radio. In some cases, it is simply a matter of making the appropriate connections, either by soldering direct to the battery leads or by fitting appropriate plugs and sockets.

However, not all such supplies (eg, plugpacks) can be used directly – at least not without some modification. Those designed to power appliances other than radios may not have adequate filtering. This can result in severe mains hum, which is very much out of place in what is supposed to be a battery receiver.

In some cases, it may be sufficient to add an electrolytic capacitor across the output, typically around 220 μ F or more. Be sure to use a capacitor with the appropriate voltage rating. A more elegant approach might be to add a voltage regulator which, in addition to ensuring that the voltage remains constant, provides some additional filtering.

(The Universal Power Supply Board described in the August 1988 issue of SILICON CHIP should also prove useful for anyone wanting to make up such a supply. Ed.)

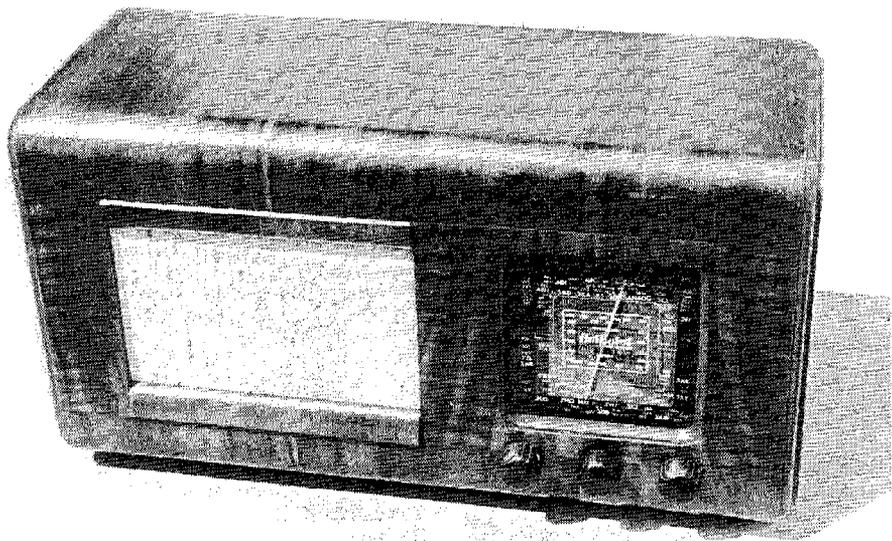
As previously stated, many of the older transistor radios worked very well. If such a receiver is connected to a large loudspeaker, it can deliver quite good volume and quality of sound. These radios can thus be useful in their own right, as well as being collectable items.

The Trojan horse

In my opinion, some valve sets are not worth restoring simply because they are battery models. Whether straight battery sets or vibrator types, battery valve radios do little for me. Although I have restored several to working order, I am not enthusiastic about battery valve receivers.

It is possible (usually with some difficulty) to install a transistor radio inside an old valve radio cabinet. I have done this on two occasions and it is one way to get a dilapidated old battery valve set working again. My first conversion was on a 1940 AWA battery receiver with a timber cabinet. The radio was beyond repair.

The transistor chassis implant used in this project was from an old AWA 7-transistor leather-cased portable that I had bought about 28 years ago. While



This 1940 battery-operated radio was fitted with a "transistor transplant" but was later reconverted to valve operation when the opportunity arose. Fitting a transistorised chassis presents quite a challenge if the original dial and dial mechanism are to be retained.

it seemed like a good idea at the time, fitting this radio to the old cabinet did have its problems.

Perhaps the most difficult aspect of such a conversion is connecting the original dial and dial drive mechanism to the transistor receiver and getting it to track accurately. The best way to achieve this is to discard the transistor radio's tuning capacitor and use the original one. That's easy to say but not so easy to do!

In this case, the set was also converted for 240V operation by the inclusion of a small transformer, diodes

and filter capacitors. The finished receiver worked quite satisfactorily, but it needed a plywood cover at the back of the cabinet to hide all the horrible and unsightly things inside.

However, when the opportunity came to reconvert the set to a 240V 5-valve receiver, the transistor innards were soon removed and now the old AWA is a 5-valve Hotpoint.

The old AWA transistor chassis then had a second chance at life. It was later recommissioned for use in a very old console cabinet. The old set's valve chassis hardly had a component left on it, hence the need for the transplant treatment. Once again, the set's original tuning capacitor was used, along with the original dial.

No sooner had this job been completed when along came a suitable 5-valve chassis that fitted the cabinet almost perfectly. So, once again, the transistorised conversion was reconverted to valve operation.

Although the old transistor set now lives in limbo in a back corner of the garage, it has proved the point that a transistor radio can be used in an old valve cabinet if you are desperate enough.

To succeed in getting a transistor radio to work in an old valve radio cabinet, while retaining the original dial setup, is a challenge worth meeting. Try it sometime - just for the hell of it, if for no other reason! **SC**



Small DC plugpacks are ideal for running battery-powered transistor radios but note that additional filtering may be needed in some cases to avoid mains hum.