

VINTAGE RADIO

By JOHN HILL



Basic tools & test equipment

An important part of vintage radio collection involves restoration & repair work. For that, you need a good workbench, a few basic tools & some basic test equipment.

It is surprising the number of vintage radio collectors who do not do their own repairs. In my opinion, people who simply collect radios and do not repair or restore them are missing out on most of what vintage radio has to offer.

Of course, buying, selling, trading and scrounging old radios are all part of the deal and those activities can be exciting too. But nothing matches the thrill of hearing an ancient receiver burst into life after being mute for 20 or 30 years. Such a moment is truly rewarding.

Vintage radio would have little appeal to me if someone else did my repairs. What's more, if that were the case, what I consider to be a relatively

inexpensive hobby would suddenly become fairly unaffordable and I would perhaps change my interests and go in for breeding budgies, white mice or something like that. White mice? I think I'd have to go for the budgies.

I occasionally do repairs for other collectors and it has been to my advantage to do so. First, these repairs, along with my own, have given me interesting material for my Vintage Radio column. Second, the extra repairs, particularly in the early days of my vintage radio activities, gave me additional experience (and headaches) which were helpful in acquiring some basic skills in this field of repair work.

Sometimes, of course, I bit off more

than I could chew and that was good experience too, as it curbs overconfidence. Learning radio repair techniques from scratch was interesting work and lack of experience should not deter those who would like to do their own repairs.

The third big advantage of doing repairs for other collectors is the fact that most of these repairs are done, not for money, but in exchange for something else—a box of old valves or spare parts, a few derelict receivers or a wanted chassis or cabinet. It's a good way to operate and trading is often a much better arrangement than dealing with that filthy money stuff.

Now some of the guys I do work for don't even own basic tools. I can think of four who do not even possess a multimeter or a soldering iron. Speaking from my own experience, I had both of these items long before I became interested in vintage radio. I have always maintained that almost nothing can be repaired unless you have a good selection of tools and equipment and I am not just referring to radio repairs.

In the past month, I have put new springs in the oven door, fixed a rattle in a heater, repaired a fault in my electronic organ and done a valve regrind job on my motor cycle. Now that is not meant to be a thinly veiled brag. It is simply a statement of fact to illustrate a point. If you don't have the right attitude and tools, then there is little that can be done when it comes to fixing things.

While the stove, heater and valve regrind were really routine jobs, the organ was unfamiliar territory. However, some circuit board pushing and flexing revealed a crook solder joint in a board socket and the problem was easily rectified with the soldering iron



This basic equipment for the workbench includes several sets of jumper leads, a small pocket knife & a pair of wire strippers.



These two soldering irons can handle just about any vintage radio soldering job. They include an old-style Scope soldering iron & transformer (left) & a modern temperature controlled iron.



Tube & ring spanners are handy when adjusting some of the trimmer capacitors found on old radio sets. While these trimmers may be awkward to adjust, once set they stay that way.

– without the big bill that a professional technician would have charged. Sure, I was lucky, but my investigations saved several hundred dollars because the organ technician would have charged two hours travelling time before he even looked at the job.

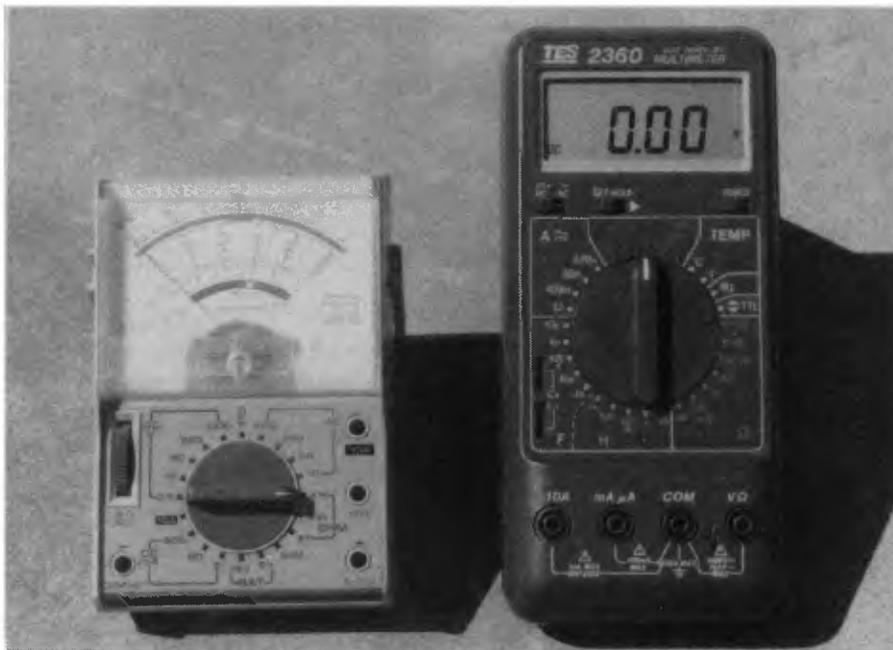
However, being able to fix things does not happen instantly. It is something that slowly develops over a long period and the sooner one starts the better. If you never have a go you will never know what your capabilities are. In some instances, you could not do a worse job than some of the so called “experts” who are, at times, incompetent and dishonest. If you saw

some recent current affairs programs on VCR servicing and automotive repairs you will know what I mean.

The workbench

All this rambling has been leading up to the theme of this month’s column and that is the setting up of a workbench suitable for vintage radio repairs. I intend listing what is on my bench (which I consider to be fairly adequate) and those readers thinking of doing their own radio servicing can weigh up the pros and cons as to whether or not it is worth the initial outlay. So here we go!

My workbench is, in fact, an old



The old analog multimeter on the left is used by the author for most general-purpose work, while the digital multimeter is reserved for jobs that the analog meter cannot handle (eg, measuring capacitance). Having two meters is often an advantage, especially when one wishes to measure voltage & current at the same time.

kitchen table with a Laminex top. It serves the purpose quite well and the Laminex top is durable and splinter free, which is something that cannot be said of a timber-topped bench.

Above the bench and within easy reach is the best place to have a tool board of some sort. Too many items on the bench clutters the work area, whereas tools that have a place to hang when not in use are out of the way. So what tools do we need on the board?

A selection of small to medium-

size screwdrivers would be a good start and that must include one small enough to fit the little grub screws often found in old-style control knobs. A small Phillips head screwdriver could also be handy at odd times when working on more modern equipment.

Pliers are always a useful tool and a variety of three or four different types will not go astray. A small pair of long nose, a large pair of long nose, plus a pair of combination or slip joint pliers for more powerful gripping jobs would be the most useful. A small pair of

locking pliers may also come in handy at odd times.

Pliers with insulated handles are a good choice when working with electrical equipment but not all types are available with this safety feature (eg, locking pliers).

Two pairs of side cutters would also be considered a necessity for any vintage radio workbench – a very small pair for those out-of-the-way awkward places and a larger pair for general purpose work.

Spanners & sockets

There is always a need for a few spanners and a small 6-inch (150mm) shifting spanner will cover most situations. However, a couple of tube spanners will also be handy when adjusting a particular type of trimmer capacitor that was commonly used in AWA and HMV receivers during the late 1930s and early post-war period.

A scribe is a useful tool for valve radio repairs and it has a number of uses. First, it is just the right instrument for marking the bakelite bases of the older style valves. Once the base is inscribed, it doesn't matter whether the original type number remains legible or not.

Loose valve sockets can also be tightened with a scribe. Seven and nine-pin sockets, plus a particular octal type, have split socket connections which can be sprung back into position with a scribe point, thus restoring socket tension and giving firm contact with the valve pins. A scribe is a very useful tool!

So too is an old bicycle spoke. The



A couple of small chests of drawers gives ready access to minor spare parts & keeps the work area uncluttered. They are ideal for storing resistors & capacitors.



A good variety of pliers & side cutters are necessary for vintage radio repairs. One can never have too many tools when it comes to working on old radio chassis.



This photo shows the author's valve tester & radio frequency (RF) generator, both of which were originally built from kits. Valve testers are hard to come by these days, although RF generators can be readily purchased from electronics retailers.

head of a spoke can reach into inaccessible places and hook out the dial cord when nothing else will reach. No radio workbench would be complete without a bike spoke or two.

Radio repairs are fairly ineffective unless one can replace a few capacitors and the odd resistor. For this reason, a couple of miniature chests of drawers full of capacitors and resistors should be within easy reach on the workbench. A full range of both high-voltage and low-voltage capacitors plus electrolytics can be stored in a single set of drawers if the drawers are petitioned off so that each has two compartments.

A small vice, a hacksaw and a selection of files (round, half round, square, flat, etc) are also handy tools to have. It is perhaps better to mount the vice in some other work area as it could be a hindrance on the radio repair bench. A packet of drills and a pistol drill would complement these other tools.

Soldering irons & test gear

Now for the more-expensive items. First of all, a good soldering iron is a must for the vintage radio repair man and on my bench there are two.

One is an old Scope iron with its 3.3V transformer. The iron itself has been restored to as-new working condition by fitting it with a new carbon element and copper soldering tip. This soldering iron gets very little use and is called upon only when heavy-duty work is to be done.

The other soldering iron is a tem-

perature controlled type and is ideally suited for vintage repairs. With the large tip and a 310°C temperature setting, it is perfectly adequate for making most solder joints. Extra large joints and even those chassis soldering jobs can usually be done quite well if the temperature is turned up another 50°C. Only on rare occasions is the variable heat iron inadequate for the job and that's when the Scope iron is used.

Another relatively expensive item is a multimeter and these can range from \$20 to \$400, depending on choice. While a budget priced meter may be a bit limited in its use, there is really no reason to spend mega-bucks on a meter for vintage radio repairs.

Having two meters can be an advantage, especially if they are different types; ie, one digital and the other an analog type. If the analog meter has an output socket and the digital meter has a capacitance range, then they should cover most situations.

But why have two meters? You will only have to damage one to make the other worth having. What's more, try measuring volts and amps in a circuit at the same time with just one meter.

The final items that are worth having include a radio frequency (RF) generator and a valve tester. While the former can be bought new from electronics suppliers, the latter may be more difficult to acquire. And although many vintage repairers get by without these instruments, they do take the guess work out of valve testing and receiver alignment. **SC**