

Vintage Radio

by Roger Johnson



The limits to Restoration

Restoration of vintage radios means different things to different people. For a start there are varying degrees of 'restoring', which include repairing, rebuilding and reconstruction.

IN VINTAGE AND classic car terminology, a *concourse d'elegance* is awarded to the owner of a motor car who restores their vehicle to as close as humanly possible to the condition it would have been in when it left the showroom. As vintage radio has been an organised hobby and interest for nearly 20 years with the advent of societies and coteries, it is time that some attention was paid to restoration standards.

To the extent that may not be the case, then perhaps an article that will stimulate some healthy discussion might be worthwhile. Unlike 'Doctor Who', we cannot jump into the *Tardis* and travel back to Mick Simmonds or Hartleys stores in 1930, purchase a brand spanking new radio, then project ourselves back to our current moment in the time continuum. (It's an interesting thought, though!). In order to have a 1930 radio that looks as if it was brand new, we therefore have to undertake restoration in its many forms.

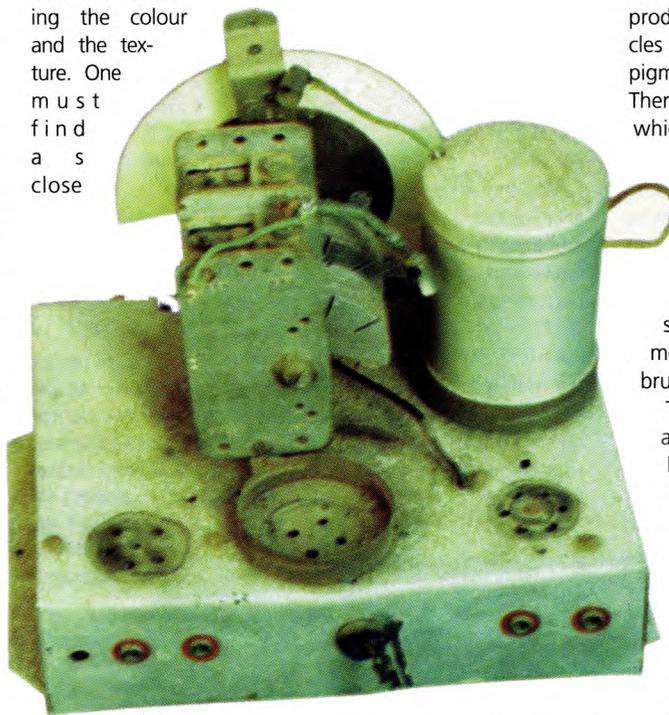
Just what are the limits to restoration? A short answer is the availability of replacement parts that were 'original', and materials and techniques that were applicable to the time. But before getting into restoring a chassis, let's look at the peripherals.

Paints & finishes

One might be tempted to think that 'finishing' and 'finishes' applied only to cabinets, but steel chassis and other metalwork needed to have a protective finish, which was often paint of some form or another.

With regards to chasses etc., it is unlikely in the extreme that any original paint can be found that is capable of being applied. The limit to restoration here is

therefore matching the colour and the texture. One must find a as close



a colour as possible.

Fortunately, there is a vast range of auto 'Touch-up' spray cans available at the larger variety stores and auto restockists, which fill the bill nicely. Find the closest colour in a metallic finish, as this finish and patina are equally important as the colour.

As far as cabinets are concerned, the early coffin box cabinets of the 1920's were invariably finished in shellac, or 'French Polished'. To this day the same materials and techniques apply; the practice is as old as the hills. So there are no limits to restoration when it comes to French Polish.

In the late 20's, timber was finished with a spray application of clear, or occasionally slightly tinted, nitro-cellu-

lose or 'Duco'. Yes, this is the same product that was used on motor vehicles for 35 years, except without the pigments used in the motor trade. There is a product that is now available which is nearly the same (Wattle 'stylewood' or 'isolac' spray finish). However, these products are not generally intended for the occasional user and need to be applied with a spray gun.

Ideally, cabinets of that period should be finished as such, but more often they are finished with a brush and a polyurethane finish.

The problem here is that a brush application of polyurethane is clearly identifiable as 'not original'. A better finish can be had by polishing it afterwards with a very fine metal polish ('Brasso'), or an application with Teak Oil. Better still, most hardware stores have a range of very authentic look-alike finishes as a result of the housing restoration boom. So it's wise to ask around, visit more than one store if necessary, and to swap notes with other enthusiasts to get the most authentic look possible.

Speaker grille cloth

For many years there was nothing that remotely resembled the original speaker grille cloths used in early radios. Restorers persevered with curtain material, which was passable at best. However thanks to the boom in the United States, exact copies of some of the famous brands have been made in economically viable quantities.

Some Australian collectors import larger quantities and sell off smaller pieces, and they will advertise in Society magazines. The cost per radio

Fig.1: This home built battery TRF set is a good example of one where everything is there, ready for a thorough restoration at minimal cost.

for these quite authentic looking grille cloths is quite modest.

Practical limits

Perhaps we should establish some rules. Personally, it is my opinion that restorers should try and emulate the radio chassis as it left the showroom — but to return to this month's title, there are definite limits. The first limit is undoubtedly cost; the second is time, and the third is replacement parts.

A repair is the minimum amount of work to enable the receiver to function to its original design. Sometimes a repair is a virtual restoration, inasmuch that there has been virtually no alteration to a chassis, and by implication, it resembles its showroom condition.

A rebuild can be considered as stripping a chassis, replacing all doubtful parts, giving it a new coat of paint and reassembly — usually not to the original wiring layout and using modern replacement components, or anything handy that will work.

Restoration is as for a rebuild, but going that big step further in that the chassis, components and wiring are all kept as original as possible. Restoration takes time, and often the restorer will not benefit financially from his/her considerable time, expertise and effort. Restoration is often a labour of love, where a rebuild is more like an eco-

nomie proposition.

The electrics

First and foremost is the power cable. There are now modern safe power cables sheathed in brown cotton which has been specifically manufactured for reproduction and 'period' light fittings. It looks good on radios. Failing the ability to procure this look-alike brown cotton covered flex, the next best thing would be the black and white-trace flex especially made for household clothes irons. It is the next best thing, and still looks the part.

A burnt out power transformer? With the more popular and more numerous sets, particularly post war, quite often a derelict chassis can be obtained and a replacement can be salvaged. Otherwise, a replacement with the

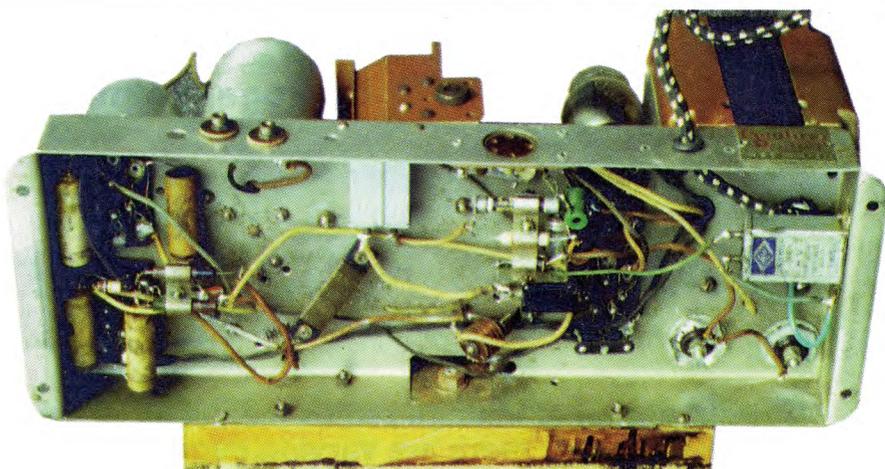


Fig.2: Under the chassis of a 1933 Healing electric TRF, after restoration. The little metal cans have new innards, while the older paper caps tested OK.

same voltages can be pressed into service that may require some hacking of the chassis. This is unfortunate and should be avoided if possible.

The limit here is no doubt cost. Very few repairers or restorers would, unless there were exceptional circumstances, consider having the power transformer re-wound, as it costs from \$80 to \$100. However, if you want to be serious about all this, then go ahead...

The circuit

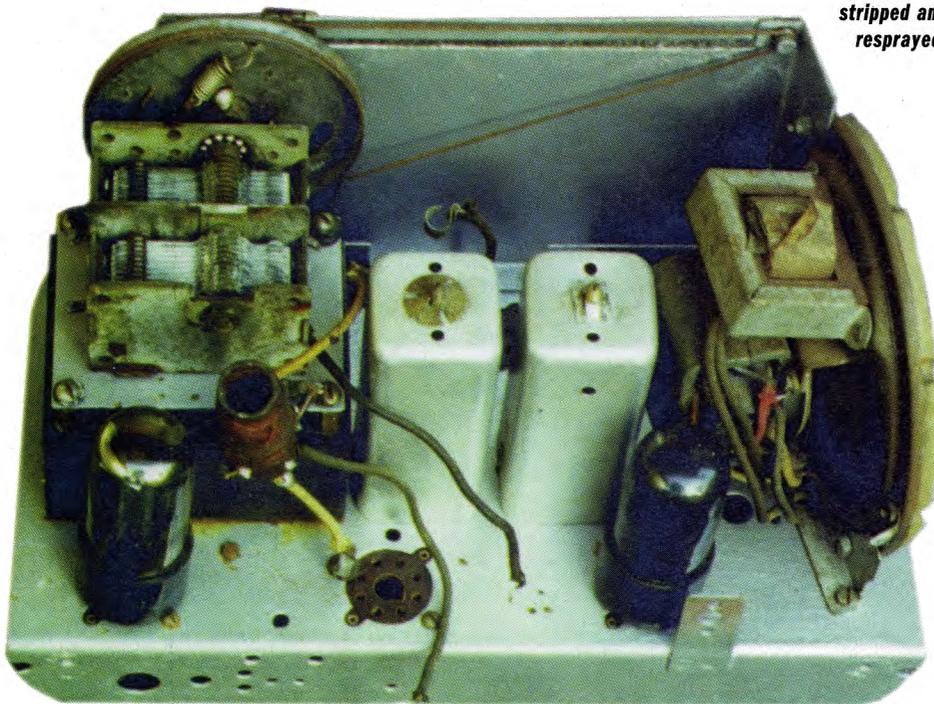
Fortunately, the Historical Radio Society of Australia has compiled books of circuits taken from their considerable source of trade journals of the 1930s and combined them by brand name. They have Astor, Healing and Tasma books, and fortunately AWA circuits have been made available by the factory since 1929. From 1937 most, but not all, Australian manufacturers made their circuits available for the *Australian Official Radio Service Manual*. The society has reference to many, but not all circuits of other brand names.

Clearly another advantage of being involved with a society here or in New Zealand is that this is a service available to members.

What if there is no circuit available for your set? It is possible to trace the underchassis wiring yourself, providing it is complete or nearly so. The 'Racophone' model 41E described in this column some 18 months ago was just such an example.

Otherwise, it is a matter of guesswork, relying upon the techniques of the day, and techniques used in other sets by the same manufacturer. I had to do this with the Racophone 41E's power supply, which was obviously altered. The article on 'making something from nothing' is an example of

Fig.3: To restore this Astor Mickey of 1941 vintage, which had been badly 'hacked around', the chassis was stripped and resprayed.



judicious guesswork. The important thing is to fathom a circuit that was typical of both the manufacturer and the era, using whatever clues remain.

Speakers

Electromagnetic speakers, in which the speaker field coil doubled as the smoothing choke, were used on practically all electric radios until WW2, and then on many brands during 1946 and 1947. An open circuit output transformer can usually be replaced by one scrounged from a similar derelict chassis, but if the field coil is open circuit, you do indeed have a problem. Unless you are in the singularly fortunate position of having a vast array of spares, some improvisation is needed.

Quite often there is no alternative but to use a post-war permagnetic speaker. This poses another problem: what to do to get rid of the 150V or so which were dropped across the field coil, and also what to do about HT smoothing.

If an underchassis choke is pressed into service, the chassis will need to be drilled, thus detracting from its originality. To substitute the lot with a resistor means a 2500-ohm resistor capable of dissipating at least 10 watts — which will then get VERY HOT.

Perhaps a better solution is to mount a smoothing choke and voltage dropping resistor on the speaker baffle-board. Then at least the original 4-pin speaker plug can still be used, and the chassis will remain intact.

Coils and IFTs

Particularly with post war radios, there was much standardisation when it came to coils and IF transformers. Should they be needed, replacement IFTs are often readily available from discarded chasses. The same can be said, although not always, for coils.

The most likely coil to give trouble is the oscillator coil. Even if it is continuous, it may not oscillate, probably due to the ingress of minute amounts of moisture.

With older, i.e. pre-war chasses, the degree of standardisation was not nearly as apparent. (Fisk Radiola chasses are a possible exception, as their IFTs and coils from 1937 to post-war production were very standard.)

This era was the heyday of the square-can IFT with compression trimmers. In some instances there were almost exact look-alikes on rival brands. To maintain as much originality as possible, try putting a replace-



ment assembly inside the original can.

The IFTs of the early superhet (autodyne) era were once again fairly standard. These were invariably 'Radiokes' or 'Eclipse' brands, in cans which are about 70mm in diameter and about 90mm in height. Replacements for these types is often easier than for the later 30's sets.

As for the coils? Well, not a lot can be said or done. The real devotees will attempt to rewind the coils, which is by no means easy or convenient. Otherwise, as close as a replacement to the original is about all that can be expected.

Solenoid coils can easily be rewound even if there is no cotton-covered wire available. For those fortunate to have access to DCC (double cotton-covered) wire, a very good replica can be made.

Resistors & capacitors

Hmmm... Unfortunately, modern resistors are much, much smaller than their older counterparts. They also look completely different. A possible suggestion could be to use the modern ceramic-form five watt variety which have long leads, are rectangular in shape, but best of all are large.

Some very early resistors did not have the usual markings, and were either gray or green in colour. Perhaps the modern varieties could be painted to give some semblance of originality...

As for capacitors, again greencaps and other modern types look very

much out of place. But there are ways around this problem.

Depending on your degree of devotion, the sealing wax can be melted out of the old tubular types, the insides slid out, a new greencap or similar component placed inside the old cardboard tube, and then re-sealed with the same wax. It is time consuming, and some would say completely unnecessary, but if you want to be serious, it does give a much more 'original' solution.

Valve types

Replacing lost or 'dead' valves can be problem, especially with rarer types. Without doubt, the B5 based anode-top 4.0V types such as the E442 used in the Philips 2510 and a few other radios are very hard to come by. If you know what you are doing, you can re-base the same type or an equivalent with a UY base.

Other than that, most valves in the pre-octal and octal series do not present a problem for the average domestic radio. This is another big advantage of joining a radio club or society — the ability to advertise your wares and your needs, and valves are no exception. The limit to replacement valves is generally one of cost, not availability.

In closing, something should be said about preserving battery sets. Battery sets are an important part of our radio history if not social culture, and should be preserved as such. Small power supplies to run them can be constructed by the enthusiast at little cost, and in the coming months this topic will be explored in more detail. ♦

Fig.4: This cabinet for a Racophone 41E has been rejuvenated quite successfully, as the original finish was basically quite sound.