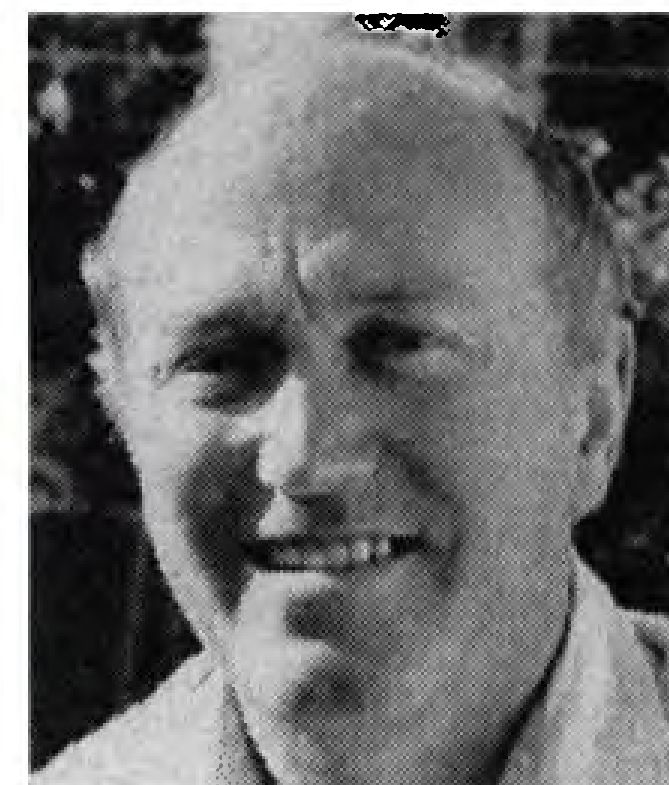


VINTAGE RADIO

By JOHN HILL



In the good ol' days of my childhood

Because radio receivers were expensive in the 1920s, many people built their own sets and even made the batteries to run them. In those days, it was a case of improvise or go without. We even built our own batteries.

My interest in vintage radio started only eight years ago and I have learnt quite a lot in that time and enjoy my hobby immensely. However, it is not all new to me for there was a time in my childhood when I built crystal sets and often listened to these simple receivers until my callused ears could not tolerate the pressure of the headphones any longer.

I guess my early interest in radio rubbed off from my father. Dad was into radio in the early 1920s when about the only thing one could expect to hear was an occasional Morse signal from a distant transmitter. In those

very early days of radio, there were not many stations on the air to listen to and those that were had quite limited transmission times.

My father was but a humble gardener in the 1920s and his wages were such that there was nothing left over from household expenses to spend on radios in any shape or form. Therefore, poor old Dad had to make his own equipment and, what's more, it worked.

Unfortunately, my father's homemade radio gear has now gone. It didn't seem important at the time so it all went to the tip when he died and

although it may sound unkind, the tip was the right place for most of it. However, with my rekindled interest in radio today, some of Dad's homemade equipment would now be nice to have, if only for sentimental reasons.

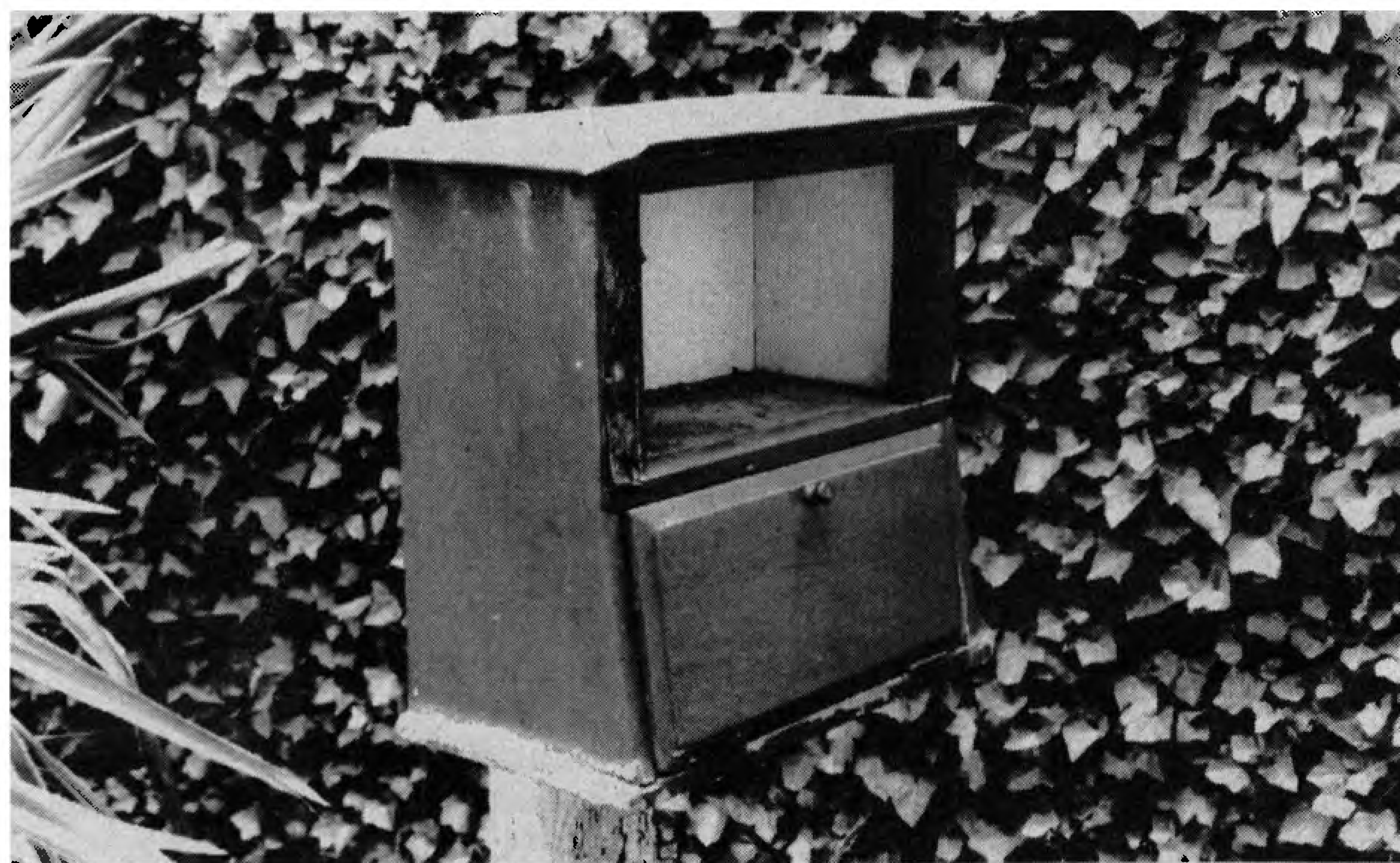
I am convinced that few people today have the capacity to improvise as did those of yesteryear. Some of the projects my father tackled were incredible for a guy who left school at 13. That's another interesting thing about my father: he caddied at the local golf course for a year while his mother thought he was still going to school. God help me if I had tried that trick when I was 13.

Crystal set

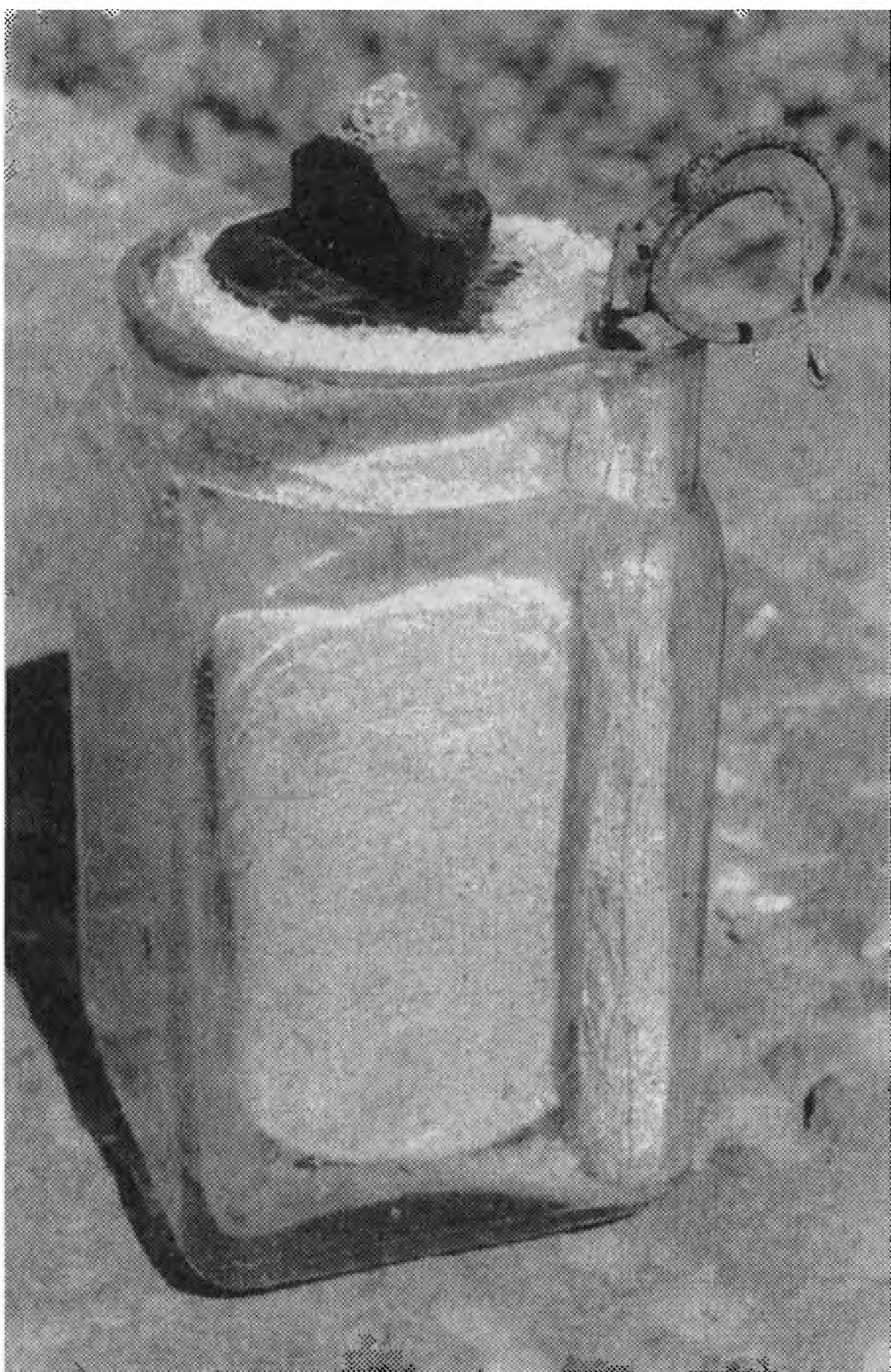
One of Dad's first radio projects was his crystal set. Now making a crystal set may not seem a very daunting task today but when my father made his, he had to make everything including the tuning capacitor and the crystal detector. The only item he purchased was a set of headphones, which gave excellent service for many years. In fact, I was still using them in the post-war years.

I remember the tuning capacitor quite well for it was used in some of my creations. I also remember that it was a bit stiff to turn and the old Emmco dial slipped when the shaft became tight at one end of the travel. I also recall that it should have had a few more plates in it, for it lacked sufficient capacitance to cover the full width of the broadcast band.

The crystal detector was made up from miscellaneous bits and pieces mounted on a small sheet of ebonite. However, the basic requirements were there. The crystal cup had three set-screws to retain the piece of crystal and the arm that held the cat's whisker



For the best part of the author's life, this old radio cabinet has served to remind him of many exciting childhood activities. It sits on top of a post in the front yard and was where the billy was left for the milkman.



This Leclanche cell is similar to those used for the front gate bell. During the 1930s, the wet Leclanche cell was used almost exclusively for powering door bells.

was pivoted so as to give movement across the face of the crystal.

Home-made batteries

But those early achievements fade into insignificance when one thinks of Dad's home-made "B" batteries.

When I graduated from crystal sets to a 1-valve receiver, I was able to obtain a discarded B battery from the local tip. This battery kept me listening for a month or so but there soon came a time when it was no longer serviceable. Once again, good old Dad solved the problem by making a rechargeable 20-volt B battery.

Now this was no ordinary battery – in fact, few would recognise it as such.

It consisted of a wooden baseboard with 10 shallow holes bored into it. Placed into the holes were 10 small pill bottles – Doctor Morse's Pink Pills for Pale People if I remember correctly. These formed the cells of the battery and were three parts filled with dilute sulphuric acid.

Strips of sheet lead were used for the plates. These were shaped like an inverted "U" and arranged in the bottles so that the ends of each strip occupied two adjoining bottles. In other words, it was a very simple lead acid accumulator.

When placed on the battery charger

(which used a home-made transformer and metal oxide rectifier), the lead plates changed colour almost immediately. The positive plates turned to a chocolate brown, while the negative plates went a light grey. However, because the battery charger could only produce about 12 volts, the battery had to be charged in two halves.

This 20-volt B supply kept the little 1-valver working quite happily, but after a couple of days it went strangely quiet. Reason – a flat B battery. Further testing indicated that the battery had almost no capacity. It could reach full charge in a matter of minutes and would discharge almost as rapidly. In fact, it could supply only about one milliamp of current for approximately 10 hours.

But although that miserable battery often went flat in the middle of an interesting program, it got me out of a tight spot at the time.

Making a rechargeable battery was nothing new to my father because he had made one once before. It lived under the house in a wooden crate and had been a source of mystery to me for many years. Apparently it was used way back in the days when part of Bendigo had a DC power supply (most likely from the tramway depot) and the battery was recharged by plugging it into the DC mains. During recharging, a globe was connected in series with the battery to provide the correct charge rate.

When my 1-valver subsequently grew into a 2-valver, the pill-bottle B battery was grossly inadequate; in fact, it was never even considered. It was time to crawl under the house and drag out Dad's old battery to see if it could be recommissioned.

Refurbishing an old relic

Once again, the old disused battery was a marvel. It was capable of supplying B voltages to the largest of battery receivers and was an impressive sight.

My father's perseverance never failed to amaze me. His B battery was entirely home-made, including the glass containers which housed each cell. These were made from small flat sided medicine bottles. The tops of the bottles had been cut off using the hot wire and quench method of glass cutting. It must have taken quite some time just to collect all the bottles and cut them to size!



The plates were also time consuming to make – no lead strips in this battery.

Each plate had been hand-cast in a special mould which shaped the plate with an open grid structure similar to that of a car battery plate. The respective lead compounds (red lead oxide for the positive plates and yellow lead oxide for the negative) were then hand-hammered into the plates.

The plates were installed two to a cell with a separator in between and held in place at the top with bees wax. The wax seal had a vent hole which also served as a top-up hole for distilled water or for checking the electrolyte with a hydrometer.

All things considered, a “helluva” lot of effort had gone into the making

of this battery. However, the question at the time was could it be recommissioned to work my little 2-valve receiver?

Unfortunately, a quarter of a century spent in limbo under the house hadn’t done the old battery much good. The electrolyte had not been drained before storage and the plates had sulphurated and were all white and horrible looking. What’s more, many of the plates were starting to fall apart.

But it was not all bad news. After dismantling the whole battery, there seemed to be enough good plates to make up a reasonable size unit. And when the sulphurated plates were scrubbed up with a wire brush, the prospect of a “new” battery actually looked quite promising.

To cut a long story short, there were enough serviceable plates to make up a 40 volt B battery, with the

leftover-plates being used to build a rechargeable A battery.

Battery charger

As previously mentioned, my father’s battery charger could only charge at 12 volts, which made recharging a 40-volt battery a bit awkward. But good old Dad soon solved that problem.

A special switch was made consisting of a rotating drum with numerous brass contacts on it. The battery was wired to this switch in four 10-volt banks and the switch connected these banks either in series or parallel. This ingenious switch took the best part of a weekend to make and install.

The rechargeable batteries were a complete success and were used for

several years. The B battery was put on charge every three months, while the A battery required attention at about 3-weekly intervals.

Leclanche battery

There were other special batteries used at home back in those distant days of my childhood. One of them was a wet cell Leclanche battery and it too lived under the house in a wooden box. This 3-cell battery powered the front gate bell and what a set up that was.

On the front gate was a home-made gate closer and combined switch. This switch closed its contacts when the gate was opened about six inches (sorry, but we didn’t have millimetres back then). The switch was connected to the battery by underground cables which were laid before the front lawn was planted more than 60 years ago. The cable then ran from the battery to an electric bell in the kitchen.

When the gate was opened, the bell gave a short ring and then another short ring when it closed. This switching arrangement prevented the bell from ringing continuously if someone held the gate open for a prolonged period. For reasons unknown, the bell was later changed to a buzzer.

The bell always gave a warning when someone came through the front gate and by looking into the strategically placed mirror outside the dining room window, the “intruder” could be observed walking down the garden path. Now I ask you – who needs expensive modern electronic surveillance equipment? Just consider the small cost and effectiveness of this old style system.

I’m sure that my father was never involved in any underhand activities but he sure had a suspicious nature, particularly where strangers were concerned.

Actually, the gate bell did detect the presence of a few undesirables. In those days, stealing milk money was commonplace and several would-be milk money snatchers were met half-way across the front lawn. As Dad was a fairly good boxer in his day, the trespasser usually got a straight right to the jaw if he didn’t beat a hasty retreat.

This gate bell early warning system also had its problems, such as on those occasions when Dad had forgotten that I had gone out to a picture show. We

had several confrontations in the middle of the front lawn at midnight!

The problem was solved by developing a special gate opening technique. If the gate was zapped open quickly and then zapped closed again, the old bell didn't have time to get into the swing of things and I was able to sneak in (or out) at any hour – undetected.

A horsey story

Still another battery was used at home for a while and this one was installed in the workshed. At the time, my older brother was interested in electroplating and he required a DC supply for his experiments, hence the need for still another battery. In this case, it was a 3-cell potassium bi-chromate battery.

This battery was bought in kit form from Selbys and when assembled used large glass jars to hold the potassium bi-chromate and sulphuric acid electrolyte. When not in use, the plates (zinc and carbon) had to be lifted out of the solution to protect the zinc plates.

As I recall, the electroplating experiments were far from successful. However, it was not the fault of the battery. Electroplating is a specialised process which requires special techniques. Unfortunately, these were never learnt.

The bi-chromate battery did find another use, however. Its 6-volt output was used to drive an old T-model Ford ignition coil (the trembler type). The most spectacular experiment with this equipment by far involved the electrification of the back fence.

Our neighbour at the back had a horse which kept scratching itself on the fence and, in the process, had just about flattened the rickety structure. The fence was re-erected and steel wire was woven throughout the weather-beaten palings to help hold things together. The final touch to the fence repair was to connect the old Ford coil to the wire reinforcement (with an earth return) and wait for the horse to come back for another scratch.

The electric fence equipment was installed in the shed, complete with a peep hole drilled in the rear wall for observation purposes. The primary of the Ford coil was wired to the battery via a Morse key switch.

Eventually the horse returned for a rub up along the fence and Dad gave

him a quick zap. Neddy must have backed away at the crucial moment and only got a bit of tickle. But the second time around he had his nose on the wire when the switch was closed. He never went near that fence again.

Part of the potassium bi-chromate battery still survives. One and a half zinc plates still remain and I solder odd pieces of these plates to my car radiator cap as sacrificial anodes. The zinc protects the aluminium cylinder head and other alloy components.

The only other thing that remains to remind me of all this childhood excitement is an old 1920s battery radio cabinet. It stands on a wooden post beside the garden path where it has stood for the last 40 years or so. However, the reason for the old cabinet's strange and elevated position is no longer apparent. It was where the billy was left out for the milkman who once called in the early hours of the morning. Remember the days of free home deliveries?

No doubt, lack of funds was one of the reasons my father made so many of the things he couldn't afford to buy. He grew up in difficult times and worked hard all of his life. Nevertheless, he still found time and a little money to follow his hobbies and special interests.

Radio and electronics have developed to such a degree today that everything has become too "high-tech" for the average person to handle. Whereas my father and those like him used to build their own equipment, the situation now is entirely different. In my opinion, all the fun has gone out of electronics and the hobbyist has been reduced to assembling kits if he is inclined to do so.

That's one of the reasons I like vintage radio restoration for it is still a hands-on, do-it-yourself activity that appeals to me in particular. The almost total lack of vintage components encourages one to improvise and scrounge. Such a pastime can be a lot of fun.

My current interest in old radios helps to remind me of a time when the style of life and the activities people pursued were a good deal different from the lifestyles of today. I am also glad that I spent my childhood during those times and if I had to choose again, I'm sure I would follow the same path. **SC**