

# VINTAGE RADIO

By JOHN HILL



## The winners of the Hellier Award

**As explained in last month's Vintage Radio column, the Vintage Radio Club of North East Victoria Inc has a special annual activity – the Hellier Award. This year, the award centred around building a crystal set & there were two categories involved: open and vintage.**

Last month's Vintage Radio story was about the crystal set I built for this year's Hellier award. I enjoyed making the set and it had been my intention for the past six years to make that receiver. Previously I never found the time; that is, until the Club's award activity motivated me sufficiently to get on with the job and get it done.

As a result, I have built my "Classic Crystal Set", I participated in the Club activity, and now the little receiver makes an excellent display item. It is a good "show and tell" attraction to have when other collectors come to visit me.

So other vintage radio clubs take

note. A club project centred around a common theme is good for club morale. In the case of the Hellier award, interest in what others are doing is good socially and the collective display on judgement day can be interesting and wide ranging.

The North East Club had 15 crystal sets entered for the Hellier award, with about a 50/50 representation in each category. It took several hours to demonstrate the receivers and judge them.

The demonstration consisted of hooking up each crystal set to the aerial and earth supplied. The set's output was then relayed through a small audio amplifier so that all those

present could hear how well, or not so well, each set performed.

The judging was done by the club members themselves. They were issued with score sheets and points were allotted as follows:

- (1) Open Class – performance 30, design 30, construction 20, cabinet 20.
- (2) Vintage Class – performance 20, design 20, construction 30, cabinet 30.

It would appear from these point scores that the vintage receivers were not expected to perform as well as the open category sets, nor would their design be as innovative. The vintage models were given more points for construction and cabinet.

If that was the assumption then it proved to be false, because many of the vintage receivers were amongst the top performers, with some having quite elaborate circuits.

The four scoring categories – performance, design, construction and cabinet – were not as straightforward as they may seem, as each category



**Harvey Utber's winning open class entry featured twin coils, twin tuning capacitors & a variable coupling capacitor (top). This receiver was not only easy to operate but was a very good performer too. Harvey made the comment that the stations line up very well to the non-existent dial pointers!**

had many aspects to it. Let's take a look at each category in turn.

- Performance: how many stations could be received, how well the stations were separated, and the strength and clarity of output.
- Design: ease of adjustment, ability to operate on different aerial lengths, originality of design and innovation (circuit and relevant information to be supplied).
- Construction: neatness, winding of coils, accessibility of controls, connections, joints and soldering.
- Cabinet: baseboard, front panel, finish, style, authenticity, aesthetics and general appeal (all very subjective stuff).

### Performance tests

If we can go back to the performance aspect of these crystal sets, it is interesting to note that they were being tested in Benalla, Victoria. In such a locality, it was found that the better sets could receive four stations: the local Radio National, 3NE Wangaratta, 3SR Shepparton and 2CO Corowa.

Not all of the crystal sets could pull in these four transmissions, with some of the simpler sets being restricted to Radio National, which was by far the strongest signal.

Just to make things difficult, the aerial that had been erected was approximately 55 metres long. As one of the design criteria was the ability to work with different aerials, this extra long aerial made it more difficult for sets of simple design.

Those crystal sets that could pull in all four stations without inter-station interference were indeed well designed. What's more, a surprising number of receivers were capable of doing just that.

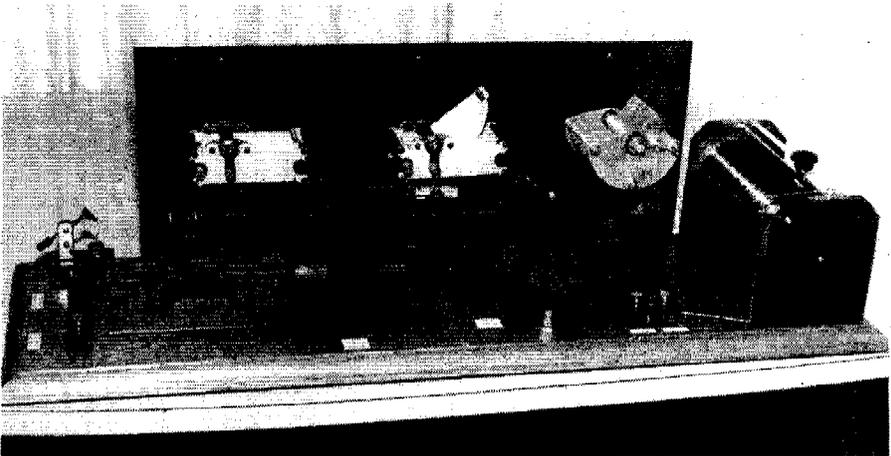
### The winners

Well the big moment finally arrived. The scores had been totalled and the results were read out. In the open category, Harvey Utber was first, Pat O'Shannessy second and Marcus Chick third. In the vintage category, Bob Young was first, Yours Truly second and Ralph Robertson third.

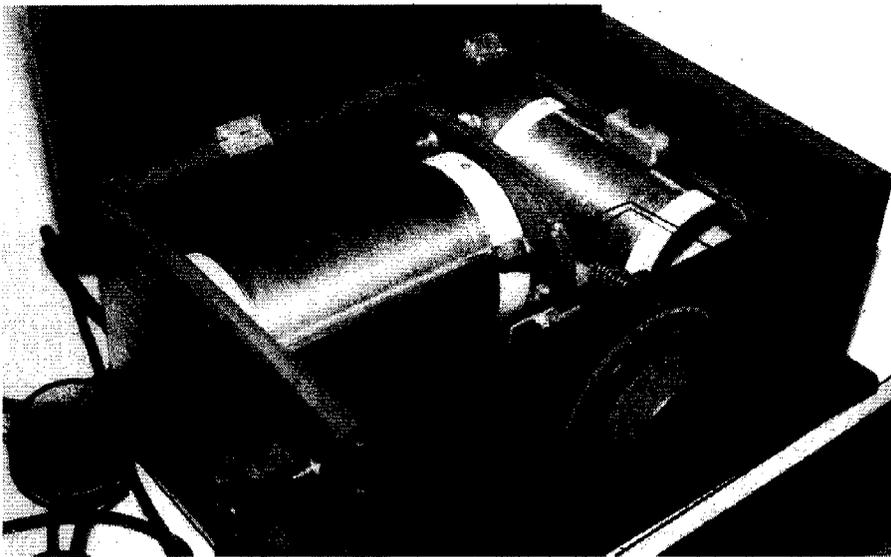
After the judging, it was time to talk, look, ask questions and take photographs. Because the crystal sets were spread over several tables, it was not possible to photograph them all, nor would it have been possible to include all of them here in Vintage Ra-



This photo shows the control panel of Bob Young's winning vintage class entry. Several hours of intense training is required before one gains complete mastery over the controls.



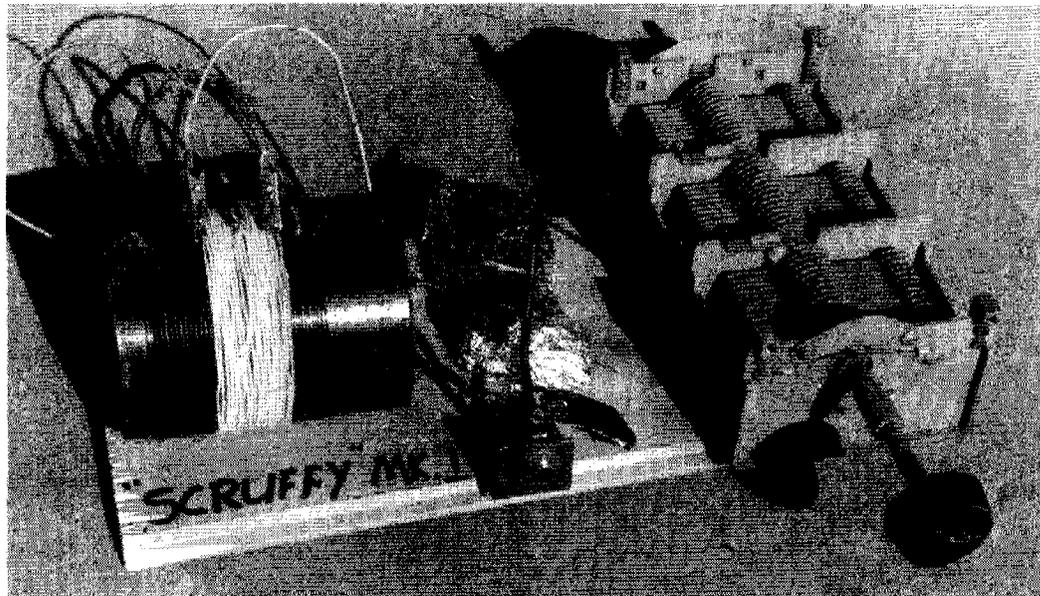
A rear view of Bob's crystal set. The two coils behind the front panel are wound with Litz wire, while the loading coil at the end is a slider type. All connecting wires are of square busbar. The set has been built for display purposes.



Also entered into the vintage category was this neat set built into a wooden box. Note that both coils have sliders instead of the more usual taps.

dio. However, the winners and some of the other sets are shown in the accompanying photographs.

It is amazing to think that in this "high-tech" age, so many grown men would want to build a crystal set. Yet



"Scruffy Mk.1" was entered in jest to prove just how rough a simple crystal set can be & still work. Unfortunately, it performed dismally on the extra-long aerial & came last in the open section. The "boulder" mounted between the coil and tuning capacitor is a large lump of galena.

many did just that and they all enjoyed the experience.

It is interesting to note that the vintage category winner, Bob Young, is actually in the computer business. Even so, Bob still likes to tinker around with old radios and crystal sets in particular.

Currently Bob is writing a book about crystal sets and I have had the privilege of reading some of the early chapters. I can only say that it is a brilliant work which should be eagerly sort after when the book is complete.

Bob's writing technique is wonderfully straightforward. He has the ability to make complex issues understandable and his writing style has a touch of humour about it as well. Whether one is interested in crystal

sets or not, there's heaps of good basic information in the book. I hope to review it when it is completed.

Well that's about all there is to report about the Hellier Award and the activities of the Vintage Radio Club of North East Victoria Inc. If anyone in that area wishes to contact the club, they can write or phone the secretary, Mr Ian Milne, 48 Smythe St, Benalla 3672. Phone (057) 62 5841.

### Germanium diodes

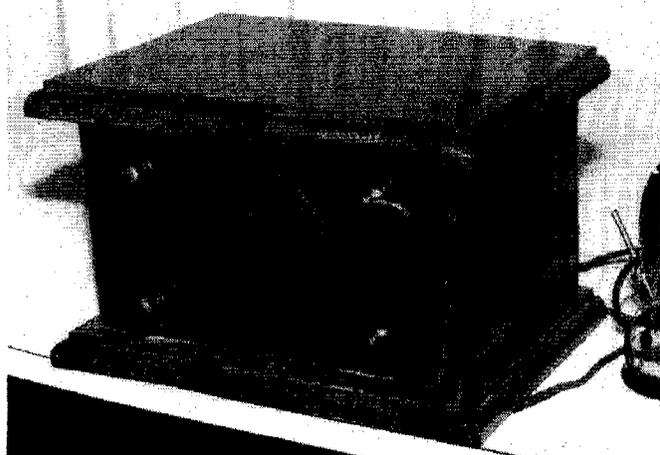
In what space is left, I will continue with the crystal set theme and relate what I recently discovered regarding crystal detectors and germanium diodes.

As a young lad, I built many crystal sets and well remember my father coming home one day with one of the

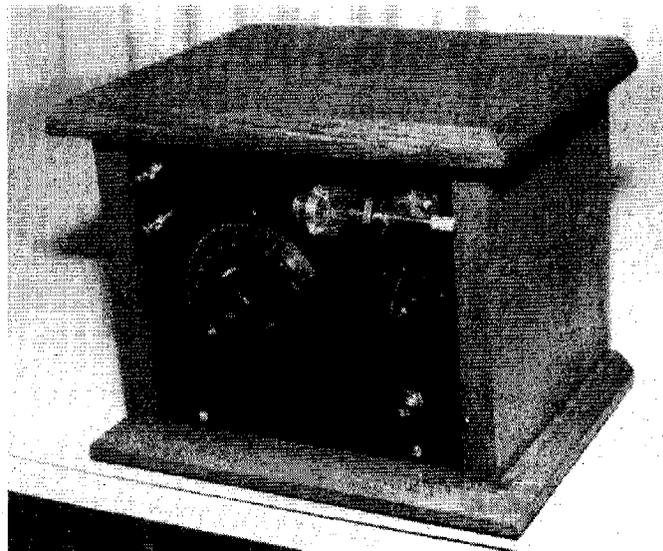
new "u-beaut" germanium diodes – the wonder device that would solve all my crystal detector problems. To cut a long story short, the new diode was not as sensitive as the old crystal detector and reception was noticeably weaker when it was in use. All I can say is that it was one of the first of its type and it never lived up to expectations.

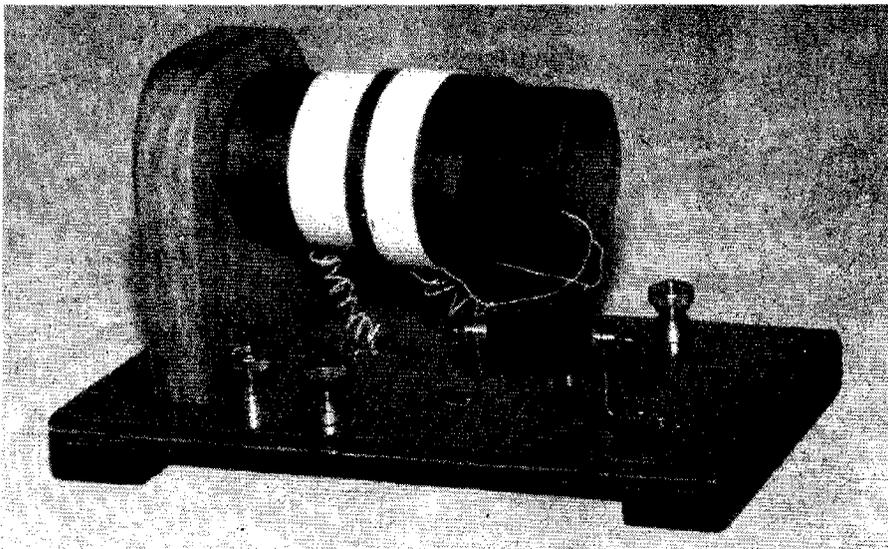
I have since had to reconsider diode performance and now know that a modern germanium signal diode is as good as anything, not to mention the convenience factor of such a component. But have you ever tested various diodes with an ohmmeter? I have and they vary quite a bit.

Their forward resistance is about the same at around  $3k\Omega$ , while the reverse resistance varies from  $0.5-2M\Omega$



These vintage sets captured the true look of the 1920s. Most early crystal sets were enclosed in solid timber home-made cabinets.





**This neat and unusual crystal set uses a form of variometer tuning, whereby one coil slides over the other. A match box receiver (not shown) also operated on the same principle.**

or more. When used as a detector in a "crystal" set, they all perform much the same.

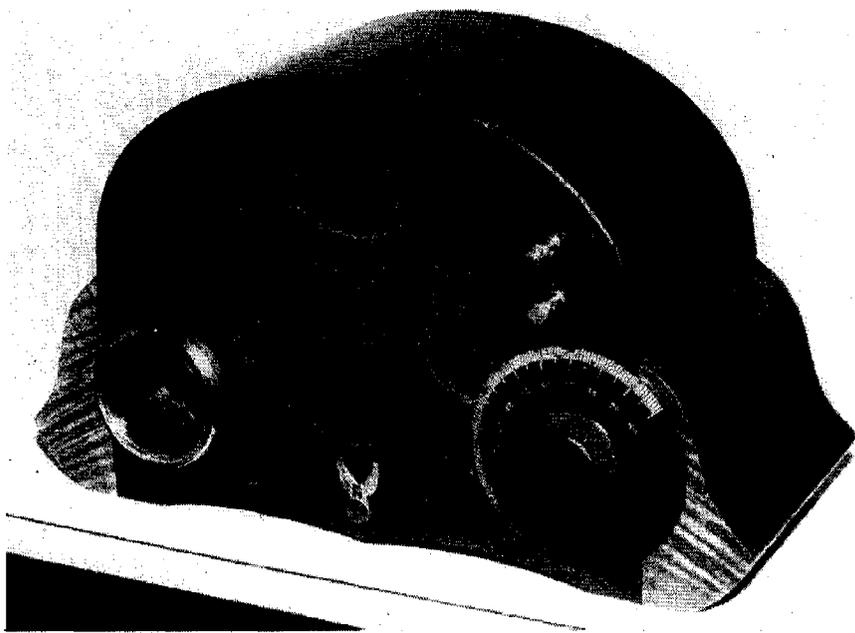
Testing a "Neutron" crystal (a commercially made crystal for crystal sets) was a bit of a shock. "Good spots" produced approximately the same  $3k\Omega$  forward resistance as a germanium diode, while the reverse resistance amounted to less than  $50k\Omega$ , with most readings about  $10-20k\Omega$ .

As mentioned in last month's story, alternately switching from this crystal detector to a germanium diode detector shows no discernible difference

if the crystal detector is properly adjusted on a good spot. And while that seems to be contrary to what are generally accepted "facts", practical experimenting proves the point.

Regarding the crystal sets entered in the previously mentioned Hellier Award, the open class mainly used signal diodes for detectors, whereas the vintage class used crystal detectors. Many of the top performers were in the vintage category, so the difference (if any) is negligible.

But a germanium diode sure is convenient to use! **SC**



**Now here's a clock radio with a difference! A clock & crystal set complete with its BSA badge placed this outfit in the unofficial novelty section.**