"Queries Answered Here"

Problems Raised at the Exhibition

DURING the Exhibition, "Pentode" and the Technical Editor had an opportunity of meeting numerous wireless enthusiasts and discussing problems with them. The range of these was very wide. They ranged from the ailments of a simple crystal set to discussion on a 6-valve all-electric Browning Drake, but the majority of the queries centred round valves. It was surprising to see the very large number who are quite unaware of the various types of valves and their use in the radio receiver. That there is a great deal of misapprehension concerning these is evident.

One could take pity on one radio enthusiast who, wishing to strengthen up borderline signals, had purchased a power valve, and was very disappointed because, if anything, volume dropped, although tone improved. It was explained that the term "power valve" indicates a valve that will add quality to the reproduction and not amplification to signal strength. Certainly, the word is misleading, but it is applied because these valves are able to handle a greater voltage swing delivering it with greater all-round amplification than the ordinary valve, which tends to cut off extremities. This gives the roundness characteristic of a set using a power valve in the last stage.

"What is a power valve?" was a typical question. There are several power valves in each make, ranging from the 250 type used in modern power amplifiers to the 112 type used in small receivers. The average 5 or 6-valve set uses valves of the 171A type. These require from 150 to 180 volts on the plate and from 20 to 40 volts grid bias. The 112 type (PM6, B605, DEL610, 610LF and 610P) are used in the smaller 3 and 4-valve sets. The receiver using general purpose valves throughout is obsolete.

A very large number of people expect everlasting use from a valve. Not infrequently, on hearing complaints that signals were weak and tone poor, the question was put: "How long have you had your valves?" and the reply was "twelve to fifteen months." The working life of a valve is 1,000 hours, and using the set for three hours a day this amounts to a year per valve. Some valves will far exceed this, but the majority begin to lose their emission after this time and results do not come up to expectation.

Neutralising troubles were found to worry quite a few people. The symptoms of a deneutralised set are usually harshness on the top notes and squealing when the R.F. valves are strained to bring in distant stations. Where this is the case the set will have to be re-neutralised and unless the owner understands fully how to perform this operation, he is unwise to attempt it, although it is by no means a difficult task. It is easy to go from bad to worse.

Another source of trouble appeared to be arising from the use of cheap components. Many people, thinking they were saving by using small, unshielded transformers, cheap valves, shoddy condensers, and unreliable resistances, use these in their sets with poor results. Although they can be adjusted to give reasonably good results at the onset, they soon become defective, and the set is in the dealer's hands in a remarkably short time. This causes dissatisfaction and usually the dealer is blamed, though he is by no means at fault. When the purchaser decides upon a certain price for a set and will not pay sufficient for a reasonably good outfit, he must be prepared to experience trouble, and trouble is expensive.

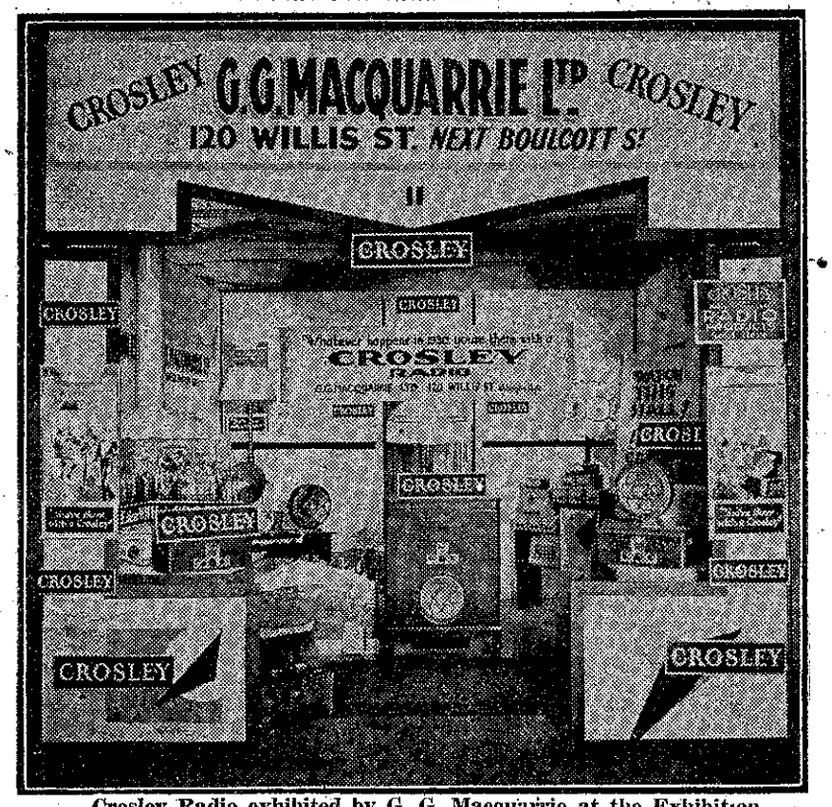
With the Constructors.

APART from discussing troubles, some very interesting minutes were spent with constructors who had tried out apparatus from the "Radio Record" or "Listeners' Guide." The Two R.F. Browning-Drake is a great favourite. Numerous listeners passed very favourable comment about this set, and quite a few expressed the opinion that it was the most sensitive set they had ever constructed or seen operating. The parallel feed was, according to them, a decided improvement.

Several visitors to the Exhibition had made the crystal set and one valve amplifier using the tetrode valve as described by "Galena" in the special issue, December 11, 1928, and in the "Listeners' Guide." Among these, one man had received at excellent strength several of the Australian stations, but this must be regarded as unusual.

As far as localities around Wellington were concerned, it appeared few could excel the Hutt Valley for reception. Crystal reception with a one-valve amplifier was claimed to give perfect speaker reception as far as Upper Hutt and Featherston, while in the nearer suburbs, Petone and Lower Hutt, loudspeaker strength from a crystal set was quite common. In connection with this, one young enthusiast raised the question of magnetic amplifiers. This type of amplifier does not require a battery, but works on the principle of the carbon microphone. Owing to their unsatisfactory nature they have now become obsolete, and can be recommended only to the experimenter.

One constructor, who allows himself a very modest sum for radio experiments, suggested that articles dealing with making radio "out of nothing" be published occasionally. He instanced a few cases where very efficient sets had been made by young people from very little material. This is certainly a good suggestion, but articles of this type require a very great deal in the way of experimenting before they can be published. However, if any readers have constructed apparatus that they think would be interesting to others, if they care to send it along, providing it works and works well, we shall publish it.



Crosley Radio exhibited by G. G. Macquarrie at the Exhibition.
—Commercial Photographic Service Photo.

A New Wave Trap

Advantages Claimed

A DEVICE akin to a wave-trap, which is said to be very effective for cutting out unwanted stations, was described recently in the "Manchester Guardian." It incorporates a plug-in or solenoid coil of 35 to 60 turns, tuned by a .0005mfd. variable condenser in parallel. One end of the coil is connected to the earth terminal of the set and the aerial is attached direct to the other. Another lead is taken from the aerial end of the coil to the aerial terminal of the set, and in this lead is inserted a seven-plate neutralising condenser or a compression type variable-fixed condenser with a maximum capacity not exceeding .0001mfd.

The best size of coil can be found by experiment, but 50 turns is a fair average for the broadcast band. The small condenser is generally set with its vanes all in, but may be adjusted as required.

Some constructors may regard the inclusion of another tuning control in the set—the unit must be tuned every time the tuning of the set is altered—as a drawback. But this is not so difficult as may at first appear. The tuning condenser of the unit moves in unison with the other tuning condenser—that is to say, if the tuning condenser of the set is moved up a few degrees the tuning condenser on the unit is also moved up similarly. After a little practice this additional operation occupies only a fraction of a second. Furthermore, this disadvantage may be overcome by the use of a change-over switch for the aerial, which will

Transmissions Synchronise

A COINCIDENCE which is not likely to happen again occurred one afternoon last week. While a record was being broadcast by 3YA the operator happened to tune in to 2YA and found the Wellington station transmitting the same record. The reception was so perfect, too, that 3YA could switch over and rebroadcast 2YA without the change over being noticeable. Had such perfect synchronisation been desired it would have been found very difficult to achieve.

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