

New Points For Listeners and Dealers-- By "Meter"

The aim of this section is to give listeners information of new and interesting devices and sets on the local market. It is free of advertising intent or influence and to the best of our ability will convey only absolutely reliable statements. Names, prices and sources of supply are mentioned for the benefit of readers and to save individual inquiry.

A member of the Wellington radio trade, speaking at the farewell dinner to Mr. J. H. Owen, attributed not a few of the complaints regarding the quality of transmission of 2YA, Wellington, to bad aerial and earth installation. I think dealers, when selling sets or parts for the home constructor of receiving sets should particularly stress the absolute necessity of a good aerial and earth. Instances have come under my own notice where beginners have spent £60 or £70 on a radio set and have put up any old span of copper wire in a slipshod fashion expecting to get the best out of their set with it. This is woeful ignorance, and it is absolutely incumbent on the radio salesman to stress the desirability of a first-class aerial. An aerial should be high, and above surrounding houses and trees. Personally I recommend not fewer than three good insulators on each end of the aerial, and above all the bare lead-in should pass into the house through an insulated tube. If insulated wire is joined on to the "tail" of the aerial the joint should be firmly soldered. The insulated lead-in wire should also pass into the house through an insulated tube. The reason for this is that in rainy weather the water runs down the lead-in wire, along the outside of the insulated wire and down the side of the house. Owing to the glazed surface of the lead-in tube the stream of water is broken up and the path to earth is broken. I have found that by placing an old circular rubber heel, wheel-like, on my lead-in wire about a foot outside from the lead-in tube, the rain, during a heavy rainpour, does not run down the lead-in further than this barrier where it drips off and falls to the ground. The rubber heel can be kept in position by adhesive tape or string wound round the lead-in wire just beneath it. To place the rubber heel on the lead-in wire without any difficulty a cut can be made from the rim of the heel to its centre thus enabling it to be slipped on to the wire in an

instant. Some folk think that merely winding the earth wire on to a waterpipe is quite efficient. Traders should inform these people that the earth wire should be either firmly soldered to the waterpipe or tightly clamped to it, but only with a special device sold for this purpose. Even some waterpipes make only an indifferent earth, possibly owing to the fact that they sink immediately into sandy or dry earth under a house. Traders will find that a copper plate about two feet square buried about four feet down in soft soil will make a good "earth." The earth lead in that case should comprise stranded wire and this should be spread out like wheel spokes on the copper plate to which each strand should be soldered. The soil all around this "earth" should always be kept moist. This "earth" is difficult to eclipse. But the main purpose of these remarks is the need for radio traders to impress on their customers the necessity for a first-class aerial and earth, and this preserve the good name of their sets and broadcast reception in general. In a recent case I saw where a prospective purchaser had a first-class aerial and earth installed at a cost of about \$11 so that the receiving sets which were submitted to the buyer for demonstration were afforded a chance of operating under proper conditions. This prospective buyer, however, is an exception.

THE SAFETY LEAD-IN.

THE Lawrence & Hanson Electrical Co., Ltd., Wellington, have landed a new patent lightning-protection lead-in known as the Pressland Safety Lead-in which, it is claimed, ensures complete immunity from the danger of lightning without earthing the aerial. The device, by the way, is backed by an insured guarantee of \$100; every lead-in is supplied with a guarantee label, the counterfoil of which is to be signed by the user and returned to the insurance company named. The risk of lightning striking wireless aërials is realised by most people, and many forms of protective devices are fitted,

but it is not generally realised what little protection is gained by any method used inside the building. To obtain effective protection and freedom from danger, any device must be external to the building, and should provide a straight path from aerial to earth. An earthing switch fixed outside is a complete protection, but it has to be operated, and unless efficiently sheltered from the weather is a prolific source of loss of signal strength through leakage. The Pressland Safety Lead-in has been designed to give automatically complete protection at all times, and in all weathers, without the necessity of any form of switching. The principle on which the construction is based is that lightning always prefers a straight path, even if of higher resistance, than one at right angles, and this is provided by an annular spark gap completely enclosed and waterproof, and of small capacity to earth. Adequate insulation against surface leakage between aerial and earth terminals is provided by the well-known method of petticoat insulators. Dealers and others interested can obtain further information from the distributors, the Lawrence and Hanson Electrical Co., Ltd., Lower Cuba Street, Wellington.

THE NEW SHIELDED GRID VALVE.

THE new shielded-grid valve has created world-wide interest, for it has opened up fresh channels for greatly increased sensitivity in broadcast reception, not only on the normal broadcast band of wavelengths but on the short wavelengths—this latest wonder of the age. It would be, therefore, of interest to learn what a famous American radio inventor and writer as Lawrence M. Cockaday has to say of the shielded grid valve. He writes: "The advent of the shielded-grid valve, especially as a high-frequency amplifying device, has made radio engineers revise many of their notions concerning this form of amplification. Whereas the amounts of amplification per stage were once

of the order of units, now they are speaking of per-stage amplifications running anywhere from 25 to 50. There is a common misconception on the part of the public that this new type of valve may be incorporated in almost any existing set without much change. This is not true. The new device is so extremely sensitive that it entails certain very definite precautions of design in the receiver with which it is to be employed, and usually it will be found that a general redesigning of the set is necessary. The shielded-grid valve must be used in a completely shielded high-frequency amplifier, in order to give stable operation at the enormous amplification that it is capable of producing. One of the great difficulties encountered in the design of circuits and apparatus for use with this shielded-grid valve lies in the fact that although the effective input capacity of the new valve is extremely low, its capacity, looking out of the plate circuit, is of a very high order. This effect, when using conductively coupled tuning circuits, is naturally going to affect the complete amplification curve over the broadcast frequency range to a great extent, and if the design is not exceptionally carefully worked out the amplification curve will be far from being equal over the whole range, but will have a definite peak with a decided falling off at each end. Another condition in the new valve is its high output impedance. This affects materially the design of shunt-plate-feed circuits and again calls for special consideration in the inductance and capacity tuning arrangement. It is imperative that the coils used in the circuit have an efficient form factor and that their impedance when tuned to resonance be of the highest possible value. The coupling condensers used should be of a relatively low impedance. Other problems, such as shielding the control grid circuit from the plate circuit without increasing the effective capacity across the valve, and taking care of the mechanical design, must first be overcome before the high amplification that may be obtained theoretic-

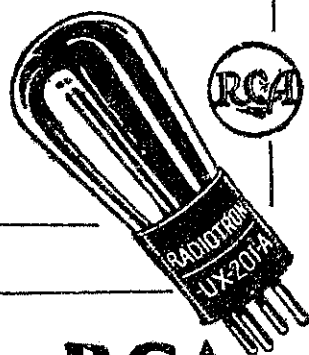
cally is realised in practice." The radio trade will advisedly carefully consider the above features before accepting the responsibility of adapting sets for use of the new valve. The valve must be suitably housed if the best results are to be obtained.

A SOCKET AERIAL.

A writer in the New York "Popular Radio" says:—"Due to the vastly augmented power of broadcasting stations, the replacement of the regenerative circuit by the tuned-high-frequency amplifier, and the greatly increased amplification of the average receiver of to-day, the socket antenna is now coming into favour, especially in congested areas. In principle, the socket antenna is a coupling device that permits radio signals, induced in the electric light to pass through a special plug and lighting current itself is held back by a condenser barrier. With former regenerative circuits this device did not always perform satisfactorily. To-day, however, with the non-regenerative receivers, or at least receivers in which regeneration is merely an accessory rather than the main means of gaining sensitivity and volume, this device performs surprisingly well. In the suburbs and rural sections it will often out-perform the usual antenna, because of the ideal antenna in the form of exposed electric light wires which it makes available." "Meter" has one of these socket devices for using the electric lighting circuit as an aerial, and has found it quite satisfactory for reception of New Zealand stations. It comes from the famous London Dubilier Company, and is tested up to some thousands of volts and is therefore quite safe to use on the ordinary 230 volt house-lighting system.

It is a good plan to keep a bottle of distilled water in the house to replenish the liquid in your wet batteries. The battery plates should have about one-third of an inch of the "acid" over their tops. Never use tap water for putting in your battery.

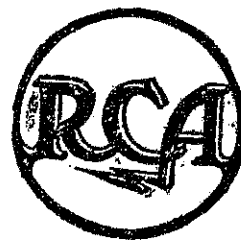
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Set
Deserves
the
Best:
USE
Radiotrons**



**RCA
Radiotron**
"The Radiotron is the Heart
of your Radio Set."

**Do You Get
Radio Programmes
Clearly?**

IF your radio set's reception is weak, examine your valves. You will get far better results if you replace all of the valves with genuine R.C.A. Radiotrons about once a year. And there is a tested Radiotron especially made for use in every socket.



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