estions

described in the "Radio Guide"?

A.: Yes, it will be O.K., but you will need to wind a two to former up and a dalancing condenser across the determine ac

tector main condenser, and will need to bring the return of the second r.f. valve

(a) Working volts per cell—50.
(5) Voltage drop per cell. very small if the electrodes are kept small.
(c) Size of plates per amp.—40 mas,

deg. Fahr., and if this is observed the charger will continue to operate until the energy is absorbed from the chemicals. Do not charge more than 22 cells in

C.B. (North Auckland) has been using an r.f. booster in front of a 4-valve set. He has now replaced the valves in the set with modern ones, and finds that it will work better without the booster. fact, the booster is now not worth

A.: Increase the filament voltage on the 222. It is probably not enough. Decrease the screen voltage until the s.g. valve

J.T. (Main Trunk) has a 4-valve screen

J. T. (Main Trunk) has a 4-valve screen grid all-wave battery set, and finds that it will work with very little drop in volume, without an earth.

A.: You have not stated whether or not you are using an eliminator. If this apparatus is used, and earth will be secured to the a.c. mains. Otherwise it would appear that the earth is being obtained through the capacity effect of your batteries and aerial.

2. When a grid-leak of a higher value than half a megohm is used I can hear a squeal in the speaker, though it is absent in the earphones. I have tried four different speakers, and they all

four different speakers, and they all

equeal.

A.: It appears that you are overloading

the valve and causing audio- oscillation.

3. Is it possible to make this class of set more selective than with the use of a wave-trap?

A.: Try a .00025 fixed condenser in series with the aerial, and a smaller value grid condenser.

Why is it that some nights all stations can be heard when the second dial is turned from 0 to 100, providing the first dial is set to the station's frequency?

A.: It seems that the grid condenser is at fault, or that there is a broken connection in the detector grid circuit, or you are using a poor valve.

TEARNER (Rotorua) EARNER (Rotorua) has several burnt-out audio transformers, and wishes to try rewinding them. He asks

wishes to try rewinding them, the asks the following questions:—

1. What does 2-1, and 3-1 mean?

A.: This indicates the ratio. The higher the ratio the louder the signals, and the more the distortion. The converse is true for the lower ratios. It

T. B. (Dunedin) asks the following theoretically means that the a.c. input questions relative to an h.r. receiver will be magnified three times in the a.c. with five valves, two being r.f.—output measured in rms. volts (this is for

2. How many turns and what wire would I need to wind a two to one transformer?

A.: This we cannot tell you, as transformers are designed to carry the current for particular classes of amplifiers, and you have not stated how much current you wish the transformer current to pass. If you intend to rewind several transformers, we should advise you to put a revolution counter on the speed as you (5) Voltage drop per cell..very small if the electrodes are kept small.

(c) Size of plates per amp.—40 mas, per sq. in.

(d) The best solution—Sodium-ammonium phosphate, and sodium potassium tartrate.

(e) The approximate working times per amp. hour.

A.: The question is not clear. The per of secondary turns. By comparature should not exceed 100 to 110, paring the numbers of turns on the deg. Fahr., and if this is observed the

original transformer with those you intend to wind on you will get some idea of the ratio.

3. Is there any publication giving full particulars of transformers?

A.: The manufacture of audio transformers is almost entirely restricted to large scale manufacturers, and so there is little or no literature on the matter. With power transformers the case is different, and literature is readily available. However, try the Te Aro Book Depot, Wellington, who might be able to put you on to some publication.

HOPEFUL (Timaru) has a 4-valve screen grid receiver, but cannot get the first stage to work. The set bursts into oscillation very readily, and becomes unmanageable.

A.: coupling is taking place between the plate of the first valve and the grid of the last valve. Use a larger R.F. choke in the plate lead to the screen-grid

valve, and increase the screen voltage to 45 or more. Try a by-pass condenser between the r.f.c. and the filament of the

F.C. (Christehurch) has a 4-valve Browning-Drake, and although he has a good aerial he does not get the results be should.

A.: The question is all too vague for us to give you any material assistance. Look through the trouble tracking section under the heading of "Weak Signals" in the 1930 "Radio Guide." There are really

the 1930 "Radio Guide." There are really dozens of things that might be wrong.

2. When charging on a battery the hum wil ldie down and then come up again. What is the cause of this?

A.: It is probably due to the resistance offered by the battery varying as it is taking the charge.

2. When increasing the detector voltage from them B batteries a long rattling and from them B batteries a long rattling and

2. When increasing the detector voltage from thme B batteries a lond rattling and harsh whistle are heard. If I do not do this there is hardly any volume.

A.: Your question is not quite clear. You would expect some noise when you are actually making the connections. Do are actually making the connections. Do you mean to say that when the connection is made to a high tapping that although the signals are improved there is a noise? If this is the case it would seem that your batteries are too flat. Try a one mfd. condenser between B+ detector and A-- Look to your grid look and and A-. Lool grid condenser. Look to your grid leak and

3. Why is a rheostat used on the 4valve Browning-Drake?
A.: It is really a quite efficient means

of controlling the volume and at the same time saving battery consumption. 4. I am within a mile of the local sta-

tion, through which I cannot get any other station. What can I do? A.: It will be necessary to use a wave

trap such as the one described in the "1930 Radio Guide."

R.T. (Hawke's Bay) finds that if he connects his gramophone pick-up to the grid of his detector valve all that he can get is a loud hum, but when connect-

can get is a loud hum, but when connected with the plate it works well. He is, however, troubled with a high level of scratch noise. He asks where he might obtain particulars of a scratch filter.

A: You have not stated your method of connecting to the grid of the detector valve. We suspect that you have been connecting one of the pick-up leads to the grid-leak instead of to the grid of the valve socket. This, of course, would cause a strong hum. If the connection was not properly made to the grid of the was not properly made to the grid of the valve the hum would still result. A scratch filter is being described by "Megohm" this week,

J. W.F. (Dunedin) wants a diagram of connections for adding another radio valve to a 5-valve commercial neutrodyne. His reception is weak.

A.: It would not be practicable for an amateur to add another stage of radio frequency to a 5-valve set. It seems as though the cause for weakness lies elsewhere. If you can get a copy of the "1930 Guide," go through the points enumerated under "Weak Signals;" and you might possibly locate the trouble:

2. Will a smaller grid condenser than 0003 enable me to separate the stations below 3YA, as they are a little crowded.

A.: Try a 00025.

The Akarana Band-Pass Four



