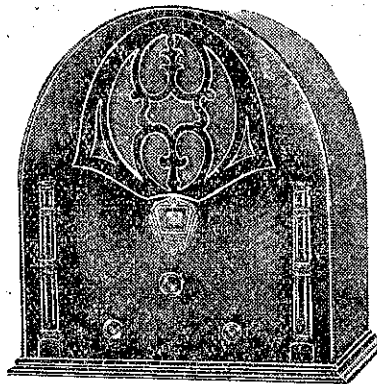


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Manufacturers and Importers,
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**SUPERIOR
TO ALL OTHERS
NATIONAL
VALVES**

Questions and Answers

"PUZZLED" (Arapuni): We don't know. Why don't you write him?

2. We think you would gain very little by using a double wire aerial, as you are now using over 100 feet span.

"TV" (Invercargill): My volume control crackles. The agents have fixed it up seven times, but the crackling always occurs two weeks later.

A.: If your agents fixed it up we cannot do much for you. Obviously they are not getting to the base of the trouble. You probably need a new volume control, whereas they are only patching your old one up. Surely you must be able to get more satisfaction from your agents than this.

"BUNG" (Waikato): Why not refer to the "Radio Guide," and save us a lot of trouble looking up these coil specifications for you? You will require 70 turns on the secondaries, 30-35 on the primaries, and about 30 on the tickler. It seems as though you have too much voltage on the plate of the detector. You do not say how many tickler coil turns you are using. Possibly these are a little bit high. Try removing some.

"KNOBS" (Buckland): Your question can be quite easily determined from the valve tables in the "Radio Guide."

2. UX199 is a three-volt filament consuming .06 amps. The grid bias when using 60 volts is approximately 3. If your "A" battery runs down rapidly, it is a sign that there is either a short circuit in the set or your battery has just about worn out.

DIAGNOSIS (Tairāpapa): You can separate stations by using a band pass filter. Yes, the specific gravity method of testing an "A" battery is as certain as a voltmeter. Gentle gassing will not stir up the sediment to any degree, and no battery should be allowed to gas violently. If you cannot tell the detector by the ringing sound—it is usually the one that rings more than the others—look for the valve with the grid leak and condenser alongside of it. A grid condenser is a flat oblong, usually brownish object, and the grid leak tubular in shape, about 1½ in. long.

GREENHORN (Napier): Yes, you can connect the gramophone pick-up to your set by connecting it between the grid of the detector valve and earth. Your best plan would be to get somebody who knows something about radio to ask him to show you where to connect it. The dealer who sold you the pick-up would probably do it for you.

B.D. (Dennistown): If you want a circuit of your set you will find it in the 1929 "Radio Guide," under the heading of A Single Control Browning Drake. This is transformer coupled and employs a modern layout.

Yes, the 3003 will do for two valves in push-pull. To get 180 volts for the last tapping, the best plan would be to double bias the valves in the push-pull stage. The coils cannot be used for the "Radiogram Five."

RUDLEIGH (Riccarton): Generally speaking it is not practical to add another stage of r.f. to a commercial receiver. Your valves appear to be quite correct. You would be better with grid bias, and see that "C—" is not connected to "A—" in any way. "C+" goes to "A—" and "C—" to the appropriate post on the set. From 3-4½ volts would be ample. Yes, the "Knife Edge" rejector would be suitable for your set. Your

best plan would be to make "C1" and "C2" both semi-variable.

TRICITY (Nelson): A.c. valves and a powerpack can be used for the "Super Six." We could supply you with the theoretical circuit if that would be sufficient for your purpose, but that, of course, would involve a reply by post.

"ESSEX" (Dargaville): Is it possible to install satisfactorily a radio receiver in a sedan motor-car?—Yes.

2. Can you advise me of a suitable set for the purpose?

A.: We have never described an automobile radio set, as there are several points unique in their construction. Such a set was fully described in "Radio News" of February, 1932. You can use the "A" supply from your car.

DX22MC (Rangiora): For a full explanation of the phenomenon, see the 1932 "Radio Guide." A leakage is taking place either within the valve, round the valve socket, or through the condenser. This could cause sloppy oscillation and motor boating. The remedy is to try another grid leak condenser, another valve, and another grid-leak. See that the socket has no chance of short-circuiting.

"ADAPTOR" (Wairoa): Your recommendation will be considered as a possible future construction article in the "Radio Times."

M.F. (Wellington S.): If you want circuits sent to you you must write in in the orthodox manner. See the rules re this. Regarding the 1932 "Advance Shortwave," see the 1932 "Radio Guide." The r.f. are 235, the detector 224.

Q.: My "Advance" shortwave set brings in artificial harmonics of 2YA about every 10 metres. What would cause this?

A.: This is a rather unusual fault, and you do not give enough particulars for an effective diagnosis. With what coil is the phenomenon you mention in evidence? Is the set built exactly to specification? Is it shielded as specified? It sounds as though there is some persistent oscillation in the set itself.

P.C.B. (Ongarue): Your formers can be used for the "Night Owl Three" coils. The condenser appears to be a .0005.

2. The condenser is rather too large for reaction purposes. Remove some of the plates or use a .00025 condenser in series to reduce the resultant capacity.

3. You could take out some of the plates to make it smaller. Broadcast coils were described in the "Radio Record" of December 18, page 37.

4. Yes, you could erect an aerial as suggested. It is unlikely that inductive effect will interfere with the reception.

We are pleased you have had success with the Beverage aerial.

DX14A (Hamilton): The gauges of wire are: Dark 40 en., light 42 d.s.c.

The number of turns required are 75. The "Rejecta" wavetraps would not seriously cut down the volume of this station. Yes, the "Radiogram Five" will be slightly unselective. Try incorporating a band pass filter such as that described in the 1932 "Radio Guide."

TRYING (Auckland): Yes, you can connect up your short-wave set in that manner providing the gramophone terminals go to the right part of the circuit. Your best plan would be to consult the 1931 "Radio Guide," which gave some indication as to how connections of this nature should be made.

PUZZLED (Petone): You have either a defective valve or there is a broken-down condenser in your set. Have your valves tested and if the trouble is not located by this, then have an expert look at your set.

CURIOUS (Timaru): Providing you have notified the radio inspector of your district that you are taking your set away with you, it is not against the regulations to operate a portable receiver while travelling on a train. Naturally the operation of a set in the train would be subject to permission being granted by the Railways Department. You see, you could annoy other passengers, and on this ground it is possible that you would not be allowed to operate. It would not be necessary to have a separate license for a portable set, provided your home set was not operated when the portable was in use.

BILL (Christchurch): The hissing noise is probably due to a defective valve in your set. The best way to locate this is by substitution. If you can borrow a suitable valve, try substitution. We cannot advise you very much by correspondence if the dealer has looked into your set and has not been able to effect an improvement.

E.S. (Timaru): Details of the "Night Owl Three" broadcast coils were published in our issue of December 18 last.

J. (KAIKOURA): As long as you can get results with the connections to the tickler reversed, why worry? Probably you cannot get the set out of oscillation. Try reducing the number of turns on the tickler coil. Probably you would find the "Outspan Five" cheaper than the "Super Six."

J.F. (Hokitika): The circuit for an r.f. coil ahead of the "Super Six" was given in the 1932 "Radio Guide." We cannot give coil particulars.

LEARNER (Dunedin): Probably the valves would not make a great deal of difference to your reception. Maybe the condensers are out of balance. If you cannot balance them yourself, you would be advised to call in a radio serviceman to do the job for you.

H. LE F. (Hawera): It is impracticable to add a screen-grid valve to a commercially-made receiver. Boosters are not satisfactory.

A.W.H. (West Coast): A. R. Harris and Co., Gloucester Street, Christchurch.

"RANGERITE" (Puke):—I have constructed the "Ranger Three," and believe me, it is a great set. I can get, so it seems, anything on the air before 9 p.m. 2XN, 4BC, and KFI come in satisfactorily. 4BC being very loud on the speaker with only 50 volts. 2BL and 1YA can be separated without any cross-talk or interference. I tried a fourth valve in second audio, which increased volume 50 per cent., but it was not connected properly and I had to keep my fingers on the transformer.

1. How can I connect a second audio to the "Ranger Three," and what valve should I use in the first radio?

A.: A suitable diagram appears in "Questions and Answers in Radio" (1/6). When a transformer whistles as yours does, the approved scheme is to try reversing the connections to the primary. The valve in the first audio should be a general purpose valve of the 221 class, and that in the last stage B605 class.

2. I want to connect an audio stage to a one-valve set, using reaction. Would I do it as for that in the "Ranger two"?—Yes.

3. Should the grid-bias voltage be increased with the "B" or decreased? I am now using 7 volts g.b. with 50-volt plate.

A.: An increase in g.b. also takes place. If you add another stage the voltage on the first stage is reduced usually about 3 volts.