

valve has been brought out. As a matter of fact the wave-trap may possibly do a little good in that it will sharpen tuning, but the issue is extremely doubtful.

2. Will a band pass filter cure this, and, if so, where should I connect it?

A.: A band pass filter would certainly reduce the trouble, but it would be more than an amateur's job to put it in the set. The band pass unit you specify, while being quite satisfactory, would not be of any use in your set. It would have to be built in.

G. J.J. (Wanganui).—What is the correction for Daniell cells in issue of November 14?

A.: There was no correction in the article dealing with the construction of Daniell cells. A correction appeared for the article on chokes, which followed that on Daniell cells, though we have an idea that the wrong method of adding the sulphuric acid was given at one stage. Add sulphuric acid to water.

2. Can I use B442 in the place of B405?

A.: You could, but it is very doubtful if B442 would be an improvement on B405.

3. Would I get better results by increasing my "B" battery to 135 volts and the "C" battery 7-9 volts?

A.: In all probability, yes.

D. X 25NC (Picton).—Can any apparatus be added to my set to increase the range for dx work?

A.: There is no simple apparatus that can be added. You could, of course, reconstruct the set along modern lines.

2. Is there a six-volt pentode valve marketed?

A.: Yes. For example, Mullard PM26.

P. M. (Te Kuiti).—We had two wireless sets, working from the same aerial, but once when I switched off one set and turned on the other, something went off in the set I had just turned off, and I have not been able to work it since. The valves have been tested and they seem all right. What could have occurred? Is it safe to run two sets in this manner?

A.: Yes, it is perfectly safe to run two sets in this manner, but it is a little difficult to say exactly what happened. It is possible that a leak from your electric set charged the aerial with high tension current which found its way through the aerial coil of the other set to earth. Examine this coil and see that it is intact. If this does not reveal the trouble, we are afraid we cannot help you further.

L. A.D. (Colac Bay).—I am troubled a great deal with a transformer near my residence. Can anything be done?

A.: We are afraid, under existing legislation, nothing can be done. You could approach the radio inspector and he could then in turn approach the power board and ask them to rectify the trouble, but that is as far as the law will go. See press matter elsewhere in this issue on that subject.

2. I am also troubled with selecting one station from another.

A.: Your make of set is not as selective as some, but it can be made fairly sharp by the use of a wavetrap, or a midget condenser in the aerial. We do not happen to know anything about the other set you mention.

MOI WHARE (Wellington).—In the "Outspan Five" there is a condenser between the detector and the aerial. I wish to use a similar arrangement to connect the first and second r.f. valves. What value condensers should I use?—A.: The same.

2. I am told that a rheostat and meter are much better than a one filament switch. Is it any advantage, and would 10 ohms rheostat be the right value?

A.: The rheostat and meter is certainly a refinement, but a switch would do quite

the ends. When it is opened the pick-up will be in the circuit.

A. B.C. (Auckland).—Should the d.d.c. wire, after it has been wound on to the bakelite tubing for the "Knife Edge Rejection," be left bare or covered with a shellac varnish?

A.: It is immaterial. So long as it does not touch anything else, it is quite in order to leave it bare.

2. Will 50 turns do as well as 47?—Yes.

NATI (Tiki Tiki).—What is the best combination of valves for my set?

A.: The one you are using, giving preference to the American valves.

2. Would a pentode in the last stage make much difference?

A. We are inclined to think not.

3. For best results, what combination would you suggest?

A.: The combination you are using is, in our opinion, the best possible. If you are not getting the results you think you should, remember that you are using an all-wave set, and this type is always a compromise between short-wave and broadcast.

MOSSY (Dunedin).—I want to convert my B.D. to an all-electric. Will the following valves do? 226 r.f. det. and first audio, 245 last stage.

A.: Yes, but why use 226 in the first stage? Why not use 227, or, better still, 224? If you want to make an ac. set, why not build the "Radiogram Five" described in the 1931 "Guide"? You need not use a power valve in push-pull in the last stage, unless you are particularly keen on push-pull. The resistances may be, if necessary, by-passed with half m.f.d. condensers.

W. T. (Napier).—Would a lead-in, shielded by an armoured cable, affect the distance and volume of signals?—No.

2. Would it be possible to shield, say, 30 feet of a 50-foot aerial, or is it necessary to do the whole?

A.: It would be possible to shield only a portion of it. If the results are not then quite as good as they might be, try shielding the whole.

3. Is there any special procedure when attaching aerial and lead-in tube?—No.

JACK (Wellington).—Which is correct of the two diagrams I enclose?

A.: The theoretical, always. Slips are very easily made when drawing the layout diagrams, and in cases of doubt always follow the theoretical.

VOLTAGE (Otago).—I have a four-valve kit set, in which there is a continuous whistle which dies down only when the rheostat is turned back.

A.: Try reversing the connection to the primary of the audio transformer, for we suspect audio instability of some type. When the set was rewired this difficulty should have been overcome. It may be necessary to substitute the impedance transformer with a good quality transformer.

TUBE (Port Chalmers).—I have made up the "Sparrow Hawk One," and am puzzled to know why I cannot get 4YA or 2YA. All other stations come in well.

A.: There are probably dead spots caused by the aerial a just about these places. Take off a few turns from the aerial coil and, alternatively, try bringing in the aerial coil to the top of the grid coil.

SELECTIVE (Auckland).—The selectivity of my set is very poor. What can I do to improve it?

A.: The sketches which you enclose are of pieces of apparatus which should help you considerably. With a non-selective set it is a case of having to make an extra

tuning device, which, of course, adds to the number of turns. A band pass filter would do splendidly, and we hope some day to be able to describe one. In the meantime go ahead with the second hook-up, and you will find selectivity will be improved.

REGENT (Methven).—I enclose a sketch of the filament wiring of my set. Is it correct?—Yes.

2. At present I have 201A in detector, 5X, in the 1st audio, and PM6 in the last stage. The grid-bias voltage of the PM5X is 3 and on the PM6 7 volts. 120 volts are applied to both stages. The tone through the horn speaker is very harsh.

A.: Your trouble appears to be in the speaker, as your valves are biased correctly. Some of the old horn speakers are very harsh indeed.

3. I have a PM6D valve. If I put it in the detector socket and turn on the set a howl is set up.

A.: The valve is microphonic. Try putting a cocoa tin over it, but it is quite probable that this will not stop the trouble. The valve could be used in the first audio socket. It evidently is not suited as a detector, although that type is generally recommended for this place. You are unlucky in striking a bad one.

## Children's Sessions

From 2YA.

Monday.—Uncle Jeff has lent to-night's session to Tweedledee and Tweedledum. They are preparing a little play called "Hop o' My Thumb," which all girls and boys love. Miss Kathleen Hume is bringing down a party to sing choruses.

Tuesday.—There is to be a gathering of the Toys to-night. Miss May Waters is bringing them all the way from the Hutt. There will be a Dutch doll, a gollywog, a "spotted" elephant (to distinguish him from "Jumbo"), also a Teddy-bear, Sambo, a Jap doll, and a Jack-in-the-box.

Wednesday.—Wednesday brings Aunt Daisy and the Cheerful Chirpers, who will chirp as cheerfully as ever. Aunt Daisy will tell you all about her visit to a ship, the Atholqueen, and will wish birthday greetings as usual.

Thursday.—The Northland School will be our guests in the studio to-night. They are bringing us some delightful choruses, and Mr. Pinfold will be with them to conduct the singing. Uncle George, Big Brother Jack, and "Robinson" will also be here.

Friday.—We are lucky this week with our delightful chorus work, because again to-night we are to hear clever children from the Technical College. Uncle Jim will act as host. Mr. Evans will conduct the choir.

Saturday.—Spot will be in the studio to-night with Uncle Jasper, and Aunt Molly will send out greetings. A scene from "Little Lord Fauntleroy" will be performed by the pupils of Mr. Clement May.

Sunday.—The Roseneath Presbyterian children's choir will be in the studio this evening for the children's song service. They will be conducted by Mr. Purdie and Uncle George will conduct the service.



ANN WHITE.

a talented member of the Leech Lyric Choir.

—Webster, photo.

as well. Ten ohms would be the right value.

3. I intend to put the first two stages of the "Sellens Short Wave Set" in front and connect into the audio stages by means of a D.P.D.T. switch. In this set "A." goes to earth, whereas in the "Outspan" "A." goes to earth. Could either be altered to suit the other?

A.: Alter the "Outspan" to "A." to earth.

NOVICE (Lower Hutt).—What type of Ferranti transformers should I use in the a.c. Radiogram?

A.: First audio, AF3 or AF4. Second, and for 171 type power valves O.P.M.I.C.

2. What Philips valves are suitable? A.: Philips valves would be quite suitable. Use the following valves:—E42S, r.f. stage E409, detector E415, first audio E409. Power valve B405.

3. Where could I obtain the coils ready made?

A.: In Wellington you could obtain them from Fear & Co., or the C.A.S.

IGNAZ (Te Kuiti).—I have a five-valve I set. Could you suggest a short-wave adapter that I could build and use in it?

A.: The best plan would be to use a super-heterodyne type of short-wave adapter. Failing this, either a battery adapter of the "Sparrow Hawk" type described in this year's "Radio Guide," or the a.c. type described in last year's "Guide." The super-heterodyne adapter was described in the 1931 "Radio Guide."

2. How should I connect the pick-up to my set, which uses an s.g. detector?

A.: Your best plan is to break the grid-return. That is, the bottom of the grid coil of the detector valve, and put the pick-up between the two separated ends. Across these insert a switch so that when it is closed there will be a short circuit between

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