

Coil Length.

R.F.B. (Wellington): Yes, your coil should tune to the band mentioned.

Transformer Ratio.

"K.A.D." (Kelburn) asks whether $2\frac{3}{4}$ —1 is the correct ratio for an inter-valve transformer.—Yes.

Microphonic Detector.

"LICENSE NUMBER 129,280" has been troubled with a microphonic detector (A415). He is using a three-valve short-wave set with two A415's and one B406.

A.: The amplification is too great, and feed-back is the result. Try A409 in place of 415.

Impedances Not Matched.

"F.W.S." (Auckland) finds that by using two 605's in push-pull he cannot prevent blasting.

A.: It appears that the impedance of the valves is not matching that of the speaker (a magnetic cone). Try two 603's with greater grid bias.

Amplifier Circuit Wanted.

"A.J.H." (Napier) asks for details of amplifier and wave-trap.

A.: A good amplifier was described by "Pentode" in our issue of November 2, and a combined wave-trap, detector, and crystal set described in November 9.

Choke Specifications.

WOULD a tapped tickler serve the purpose of a choke in a short-wave set? writes "J.E." (Wellington).

A.: No; very many more turns would be required. A tickler has usually about 25, a choke nothing less than 100.

Questions and Answers

The circuit recommendations are a .0005 condenser for tickler control. Would a .00035 be suitable?
A.: Yes; though .0005 would be slightly better.

Transformer Particulars.

"A.V." (Christchurch) wishes to obtain particulars of a transformer input 220 to 250 volts, output 22, to 435 volts, providing a filament winding of 1.5 volts, 2.25, and $7\frac{1}{2}$ volts, and C voltage. He asks would a transformer for 250 volts coupled to an American transformer of 110 volts be practicable?

A.: The correspondent will find that the question of transformers has been dealt with very fully in an article in the "Radio Listener's Guide," entitled "Small Power Transformers, from A to Z," and "Building a B Battery Eliminator." As to the latter part of the question, No.

The same correspondent asks where stallo may be obtained.

A.: It can be obtained ready cut from almost any dealer, but Johns, Ltd., Auckland, carry extensive stocks.

The Question of Wireless Aerials.

A CORRESPONDENT has written, asking if his aerial passing over electric mains, is permissible.

A.: Regulation 5HA (1) states: "Wireless aerials shall not, without the consent of the licensee for the supply of electricity concerned, be erected above or below wires used for the supply of electricity, or sufficiently near to such

wires to permit of contact with them should either class of wire break or become detached from its support, or its support fall."

So it does contravene the regulations.

Biasing R.F. Valves.

"C.E." (Nelson) inquires whether there is any advantage in biasing the R.F. valves of a 2-R.F. Browning-Drake?

A.: Other than reducing the "B" current, there is little advantage, unless it makes the receiver slightly more selective.

The correspondent suggests: "I have a circuit diagram showing the connections thus: The frame and moving plates of the condensers are insulated from the shield and the ground end of the coil comes to the moving plate. Grid bias is applied between the moving plates and 'A-', with the negative to the moving plate and the 'C plus' to the 'A-.' There is a 1 mfd. condenser from the moving plates to the ground or 'A-.' Would this affect the tuning range of the coils and condensers?"—No.

2ZF, Palmerston North.

"J.A.B." (North Auckland) wishes to know the nights 2ZF is on the air. He states that when tuning in last Wednesday night he accidentally logged him and wondered who it was until the announcement was made. He heard one or two items very clearly on the speaker, but then they faded. Sunday night he could hear them faintly on the headphones.

A.: Station 2ZF, Palmerston North, operated by the Manawatu Radio Club, power 20 watts, wavelength 285 metres, broadcasts Sundays and Wednesday nights.

Centre Tapped Primary.

AN inquirer from Roseneath, Wellington, who is contemplating constructing a transformer described in the "Radio Listeners' Guide," has to work from the 110 volts power. He wishes to know the adaptations to be made.

A.: In our Questions and Answers page in Volume 2, Number 40, this problem was answered for a correspondent. It may be remarked in addition that great care must be exercised in thoroughly insulating each half of the primary winding from the other half, particularly the finish of the first and the commencement of the second. These are carrying the full voltage potential, and if not thoroughly insulated one from the other, a short circuit will result.

Trouble with Morse.

"SUBSCRIBER" (Central Otago) complains that he is troubled with morse on practically the whole of the broadcast band.

A.: The disturbance is evidently caused by either a ship or an amateur. In the case of the former the trouble will cease when the ship is far enough away. If the correspondent can read morse or has a friend who can read morse, he should identify the station and lodge his complaint to the district telegraph engineer.

Heterodyning 3AR.

"COULD you tell me the station which causes a whistling with 3AR Melbourne," writes "Satisfied" (Westport).

A.: In all probability it is WDAE Florida, operating on the same wavelength, viz., 484 metres.

The same correspondent inquires: "Would a short aerial give as much volume and less static than a long aerial?"

A.: It would collect less static, but the signal strength would be much reduced.

Elementary Points.

"L.W." (Lower Hutt) writes: "Hearing the announcement over the air that advice would be given to beginners in the matters of care of sets, etc., I am asking the following questions:—

"1. What would be the necessary height of an aerial in this district to bring in the Australian stations?"

A.: Logging outside stations is a combination of three factors. The set and the operator's skill, the aerial and the earth, and atmospheric conditions. The correspondent does not state the type of set he is using, but a three-valve set with a good aerial should bring in these stations on the loudspeaker. Aerials were fully dealt with in our issue of December 14, and again in the "Guide."

"2. Would an ordinary piece of water pipe form a good earth, and what is the required length?"

A.: Yes, it would be quite satisfactory if from 4ft. to 6ft. in length, but see also our special issue December 14, for further particulars.

3. Would a 3 or 4-valve regenerative set be a good proposition in the matter of price, economy, and purity of tone?

A.: Yes, an excellent proposition. A set such as this is capable, usually, of bringing in Australian or even Japanese stations. Judging by our advertisements, 3 and 4-valve receivers will be very popular this season. Watch our "Laboratory Jottings" for reports.

4. Can you refer me to any Wellington firms who make a speciality of supplying reliable kit sets?

A.: Yes, glance through our advertisements. Several are displayed in shop windows.

5. Are dynamic speakers better than the horn type, and can they be worked from an ordinary set?

A.: Yes, they are superior, but are more costly, both initially and in operating, though if a good amplifier is used with the set the cost amply repays in quality.

6. Are the new power operated sets better in purity of tone than the battery operated ones?

A.: Generally speaking, yes, as greater voltage can be applied to the power valves.

The 2-R.F. Browning-Drake.

"C.S.B." (Christchurch) has not had a great deal of success with the 2-R.F. Browning-Drake, the difficulty being with the neutralisation. He proposes altering it according to the specifications in the "Radio Listeners' Guide," and asks the following questions:—

1. Using two 609 valves in the R.F., how many turns should be wound on the slotted primaries used with a secondary with a 24in. former?—A.: About 23.

2. What method of reaction control do you recommend, and will you give instructions for fitting it. I have not room to fit a controlling condenser."

A.: The moving coil can be used as was described in connection with the four-valve Browning-Drake, described on pages 71 to 73 of the "Guide."

3. Is the R.F. choke between the tickler and the first audio transformer of the same proportions as the other two, and if I decide to purchase the R.F. chokes should I specify the sizes?

A.: All R.F. chokes are of practically the same specifications, and so it is not necessary to specify more than "R.F. choke" when ordering.

4. Which would you recommend—the 2R.F. Browning-Drake or the adapted screen grid Browning-Drake?

A.: If simplicity of operation rather than selectivity is desired the screen grid is preferable. Selectivity combined with distance getting is the outstanding feature of the 2-R.F. B.D., but it is rather more difficult to tune than the screen grid set. See our article in this issue.

Note: Constructors who contemplate constructing the two stage R.F. Browning-Drake as described in the "Radio Listeners' Guide" should note that the filament end of the secondary of the first radio frequency transformer should

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