

QUESTIONS: ANSWERS

FRANK KEE

The Technical Editor will, through these columns, be pleased to help readers experiencing trouble with their sets. Queries are limited to three—for more than this a shilling fee is charged, and a similar fee is payable for queries answered by post. Supplying layouts, circuits and solutions of intricate theoretical problems is beyond the scope of this service.

A coupon must accompany all requests for information. Non-appearance of the coupon in any issue cannot be regarded as a reason for its not being used.

Address all queries, The Technical Editor, Box 1032, Wellington.

"HOREKE" (Hokianga): Will the "Super Six" work with the air-cell battery and R.C.A. valves without alteration?

A.: Yes, but if you use a screen-grid R.C.A. valve you must note that the grid connection is at the top of the valve, and must make allowances for this when wiring your set.

2. Can a pick-up connection be included in the wiring?

A.: Yes. Take out the 1 meg. grid-leak between the grid of the detector valve and A+, and place the pick-up connection in its place. If the quality leaves anything to be desired, take one end of the pick-up to the grid of the valve and the other to A— instead of the A+, as shown.

3. Will it work with the frame aerial

only, and are any alterations needed for work on short-wave?

A.: It can be used on an outside aerial by using a coupling coil in the place of the frame aerial, but in doing this the P. and T.'s regulations would be contravened, for it would create interference. It will work on short-wave only if a special short-wave loop is employed. These may be purchased in commercial form at a very reasonable price.

"SPARKS" (Featherston): Could the potentiometer of a carborundum stabilising unit be used for the "Night Owl Three"?

A.: Yes, it can be used across the filament in order to provide the grid return. The pole marked negative will go to the negative wire of your set and the one marked positive to the positive one. The grid return will come in, we think, to connection No. 2. However, try it to No. 1 also, if No. 2 does not give satisfaction.

2. Would the set work without the aluminium shield?

A.: Yes; you may have a little difficulty, however, with hand capacity. Nevertheless, it is worth trying.

"WAVE-TRAP" (Dunedin): I have constructed the "Dual Wave-trap," but have not had any success, not being able to eliminate the local station.

A.: It would be as well to put on rather more turns than specified, and tap them, as indicated, trying different combinations. Use the optional tap and the aerial and try to tune out the local station. Until you get your wave-trap working on this one it is useless to try to get it operating in a dual fashion. Then try the optional terminal and the one marked "set" in order to get the wave-trap operating on a "B" class station. Having thus eliminated each station in turn to your satisfaction, you can use the trap as a dual wave-trap.

DX13T (Taranaki): In my commercial all-wave set, using plug-in coils, the top part of the band is nowhere near as sensitive as the lower part. If I had special coils made to cover each half of the band, would this state of affairs be remedied?

A.: In all probability, yes. All-wave sets often compromise on the broadcast band, and quite likely this is the cause of your getting unsatisfactory results. We should advise you to write to the New Zealand agent, who may be able to help you further.

"DESPERATE" (Matamata): Must a bias resistance in an a.c. set be capable of passing the current consumed by the valves?

A.: Yes, this is of paramount importance in designing the set. If your bias resistor will not pass the current, it becomes unduly heated, and the resistance rises. This means you are putting a higher grid bias on your valve than that recommended by the manufacturers, and consequently are getting distortion.

2. Is nichrome wire suitable for bias resistance?—Yes.

3. What is the total voltage to apply to a push-pull stage of 245's allowing 250 volts for the plate?—300.

4. What would be the current consumed by a pair of 245's in push-pull with 250 volts on the plate?

A.: 64 mamps.

5. At what temperature is nichrome resistance wire kept when making resistances?

A.: Usually about 80 deg. Fah.

6.: My "Radiogram Five" works fairly satisfactory, but weakly, for a while, and then distortion becomes very bad, and the set ceases to operate.

A.: It seems as though your grid-bias resistance will not pass the current taken by the valves. This means that it is heating, and, as we have explained in answer to question No. 1, is causing a greater bias than that recommended by the manufacturers to be applied to your valves. Bias resistances in an a.c. set are very critical.

A. R.M. (Auckland): See the description of the "Picnic Portable" in this week's issue.

DX43A (Whangarei): Could the "Super Six" be adapted for use with an outdoor aerial?

A.: It can be used with an outdoor aerial if a coupling coil is used, but in these circumstances it would contravene the regulations of the Post and Telegraph Department. An outdoor aerial, however, is not really necessary with the "Super Six," as it would bring in a very great amount of extra noise, and would probably defeat its own object. Nevertheless, it is possible we may design a coupling unit. We shall not make any promises.

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"Radio Design," Vol. 4, No. 1, 1/3.

New Pilot All-Wave 11 valve Double Super-het., for s.w. and broadcast. "Wireless Weekly," 32-page call-sign booklet for broadcasters, amateurs and short-wavers, 4d. (Useful.)

"Radio Retailing," Nov. issue. U.S.A.'s best commercial magazine, 1/11.

"Morse Made Easy," 7d.

"Radio Operating Questions and Answers," by Nilson and Hornung, 14/-.

"Radio Log and Lore" (World's Best Log of the World), 1/10.

"Radio Amateur Call Book," Sept., 1931. 5/3.

Special Short-Wave issue ("Popular Hobbies") (Complete list S.W. stations. New time conversion chart. Three special S.W. sets). 7d.—Rush it!

"Perry Auto-Time Morse System," 10d.

"Practical Radio Telegraphy," by Nilson and Hornung, 18/6.

Blue Prints—"Batteryless Neutrodyne," "Selective Crystal Set, Two Stages Audio," "6-Valve Neutrodyne, One Transformer and Two Resistance-coupled Audio Stages," "3-Valve Browning-Drake," "7-valve Super Het," 1/6 each.

"Radio Amateur Handbook" (Handy's), 8th edition, 5/3.

"Theory of Radio Communication," by Filgate, 12/-.

"Principles of Radio Communication," by Morecroft, 41/6.

"Elements of Radio Communication," by Morecroft, 19/-.

"Direction Finding," by Keen, 27/-.

OUR LOCAL AGENTS:

Auckland: F. R. Jeffreys, 466 Queen St.
Palmerston North: Radio Supplies & Service Co. (E. B. Borham), 245 Main St.
Blenheim: Tomlinson & Gifford.
Nelson: Keith Walker, Baird's Buildings.
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