

Questions and Answers



O.I. (Christchurch): What are the capacity of the following midge condensers; one with seven plates and the other with eleven?

A.: Probably .000025 and .000035.

ELECTRODE (Invercargill): I have a B.D. set which has lately developed rough tone. I have tested valves, speaker, batteries, etc., but the set continues to behave the same. I am using two PM4's in the audio stages, with 45 volts on the first audio and $4\frac{1}{2}$ volts grid bias.

A.: You say the roughness has developed only lately. This is hard to understand because from the combination of valves you have it should have been rough always. You should not use a power valve such as PM4 in the first audio. Use PM3 or PM4DX. The bias of 45 volts should be only $1\frac{1}{2}$, but why put the full 90 volts on the first audio biasing it with three volts. This would be ample for the first audio stage. Where was your coupon?

FAD. (Turua): I have a five valve American receiver, and would like to know the correct valve combination.

A.: You could use four 221A or 201A valves. The former are the better, but they are rather difficult to obtain. As for the power valve you can use one of the 171A or B605 type.

MARSITE (Te Aroha): I have constructed a powerpack with a core of 1.5/8 square. I designed it for 250 volts, rectified and smoothed, for it has 2200 secondary turn centre tapped. My voltage seems rather high.

A.: Yes, we think it would be about 800.

2. Is the low number of primary turns (720) accountable for the hum?

A.: No, you are using the correct number of turns for the sized core.

3. When testing the transformer without load, hum was inaudible until the right ear was placed within a few inches, but when placed in a metal case

with the rectifier and smoothing choke the hum can be heard all over a large room.

A.: It seems as though there is a loose lamination or some loose metal about the transformer. How does it go when on load? It should not be operated in anything but a low condition.

4. Will you be bringing out an all-wave electric set in the "Guide"?

A.: There is a shortwave all electric set, but specifications will be given for broadcast coils.

5. When will the "Guide" be out?

A.: The middle of March.

6. Could the L.W. Three be converted to an all-wave set?

A.: As far as we know, no. It is not suitable for high frequency work.

7. What adjustments do you think necessary to change my powerpack over to the L.W.?

A.: It would be suitable if used with half-wave rectification.

C.H.W. (Invercargill): When will you publish details of the Differential Four?

A.: It will be a few weeks before we can find space for it. Our programme, as far as we can see for the present, is: Next week, the conclusion of the "Pendote" article; the week following, the "Kestrel Three"; then some more crystal circuits, with probably the powerpack for the Home and Country Portable or the Differential Four the following week.

2. Do you think it worth while scrapping the B.D. to build the Differential Four?

A.: It is very questionable. The Differential Four would, of course, give you all-wave reception and would not need neutralising on account of the screen grid. Furthermore, it employs a smoother control of reaction and has the advantage of the lift given by the s.g. valve.

3. What method of coupling will be employed between detector and r.f.?

A.: In all probability air-core transformer.

4. Will the set radiate?—No.

RECORDITE (New Plymouth): Can you tell me how to neutralise the "King" neutrodyne model 25?

A.: In the centre of the chassis are two cartridge-like condensers. On these is a seal which you must break and then adjust the handles until the set is neutralised. Actually, to carry out the neutralisation process, you must tune to a strong station and then shut off the element current to the r.f. valve nearest the detector. Move the neutralising condenser nearest this until the signals are weakest, then re-light the filament and dim the filament of the first r.f. valve, repeating the process with the neutralisation condenser nearest it.

NOTE.—Would correspondents, when referring to previous correspondence, kindly re-state their problems. In this case we are not quite sure if the question asked was the method of neutralisation. If there are any others, would the correspondent please communicate with us again?

W.D.A. (Inglewood).—My dynamic speaker has recently developed a serious rattle.

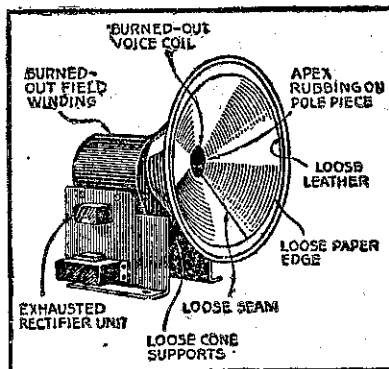
A.: It appears that the centring device has become limp or out of alignment, and the voice coil is touching the permanent magnets. You probably will not be able to rectify the trouble yourself. The diagram shows some of the points in which trouble may occur.

2. My aerial is 70ft. high and 150ft. long. Would I get better results by shortening it?

A.: In all probability, yes. It is too long. Try the effect of a .0001 fixed condenser in series with it.

3. My set is an all-wave four-valver, using C603 as a power valve. Could I obtain a better combination?

A.: B405 would give you a greater lift and handle all the volume you require.



MISTIFIED (N.P.): Is it possible that an all-wave set may work well on broadcast and very poorly on short wave?

A.: Yes, quite possible. An all-wave set is either designed for maximum efficiency on either short or long wave and rarely gives maximum efficiency in both directions.

2. Do you think locality would have this effect?

A.: Locality has a big influence in reception of both short and long waves, but whether this is your trouble is another question.

3. Can you tell me if my make of receiver is suitable in New Zealand, and do you think the Differential Four would be better?

A.: From what we have heard your set should give quite good results, but we are inclined to favour the Differential Four.

CAMERA (Hastings): I took my commercial receiver apart and constructed the Night Hawk Two. Is it necessary to have my license changed to that name?

A.: Not until you renew your license. 2. There is a very pronounced buzz in the phones.

A.: We suspect your transformer, for though it is brand new it is of an unusual make.

3. The transformer has the following markings: Pl.P2. secondary, and Pl.P2 primary.

A.: That does not give us a great deal of indication. The secondary terminals are G and GB, while the primary are P and B+, but which is which we do not know. Connect them up and reverse them if results are not quite as they should be.

N.D.B. (Tolaga Bay): Are the secondaries of the r.f. transformers wound with 26 or 24 gauge wire?

A.: Either, but 26 is the more usual. 2. The sketch of the regeneration coil places some terminals on top, the article on the bottom. Which is correct?

A.: It has been shown on the top in the sketch merely for clearness. We would have had a fine old jumble had they all been put at the bottom and half the bottom broken away to show the primary coil. You could quite easily leave them on top and carry the leads down to go underneath the set.

3. Can 32 gauge wire be used for both primaries and tickler?—Yes.

4. What diameter and height are the coil shields?

A.: $4\frac{1}{2}$ in. diameter and $4\frac{1}{2}$ to 5 in. high.

5. I suggest building my set mounting the valves horizontally and using inter-stage screens. Will it be necessary to shield the coils?

A.: No, unless oscillation trouble is encountered.

6. Is the L.W. still king of amplifiers and how is it that it is not more used on commercial sets?

A.: It is still the best amplifier. It is not used on commercial sets because of patent rights and secondly because it is fairly solid on the output valve. This valve is called upon to operate for some seconds without grid bias.

7. I have two 222 valves and am doubtful about their efficiency. What is the usual test?

A.: Connect them up with grid bias, and see if the plate current is as specified by the manufacturers. The application and shorting-out of the grid-bias battery would cause a swing over several

CORRESPONDENTS must attach this coupon to all queries sent to the Technical Editor (Box 1032, Wellington). Questions arriving without it are likely to go astray or be delayed.

Name of set

Number of Vales

Name

Address

.....

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Nom de plume

To be kept in subsequent inquiries.

Date

Please Note:—

- (1) Be specific and brief, tabulating, if possible.
- (2) Write legibly, and on one side of the paper.
- (3) We do not design circuits, but accept suggestions for feature articles.

Solving trouble as different from advice, is difficult by correspondence and while letters are given every consideration, answers are not necessarily correct—they are only our opinion based on the matter supplied, which may be quite inadequate. Intricate and involved specifications cannot be supplied without a specialist's fee.

Are You in Difficulties?

50 per cent. of Radio Troubles are due to defective components and further trouble is brought on by inexperience.

If your set is not satisfying you, send it for overhaul. We pay carriage one way.

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—THE—

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