

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.

UNCERTAIN (Christchurch).—I cannot get the "Sparrow Hawk" One to oscillate over the whole broadcast band.

A.: Have you tried reversing the connections to the reaction condenser? Often the connections to the coil are back to front, and reversing them at the condenser will generally have the desired effect. If this does not have any effect, you must add more turns on the reaction coils, or try the effect of a midget condenser in series with the aerial.

2. I am using 201A as detector. Would this be suitable?

A.: This would be quite satisfactory, although 615 type is possibly the better oscillator.

3. I am using an old-fashioned .0005 condenser with four plates removed. Is this now the correct capacity?—Yes.

KANUI (S. Westland).—My set has stopped. The "A" and "B" batteries are quite in order. All I can get is a howl.

A.: This sounds like a transformer. Use the phones and cell test and see if the primaries of both the transformers are in order. To carry out this test, take a pair of phones and connect one tag to a terminal of a 4.5 volts battery. Any other battery will do, but a 4.5 is usually the handiest. Attach a piece of wire to the other terminal of the battery, then touch this wire and the free terminal of the phones together and you will hear a click. Now disconnect the primary wires from your transformer and put the two wires one on each terminal. You should get a fairly strong click in the phones. The absence of this click indicates that the primary is burned out. This method of testing can be used for other components.

2. Can I do anything to improve daylight reception?

A.: It is doubtful. Daylight reception is very uncertain anywhere.

3. My set is really an all-wave one, but I cannot get short-wave stations.

A.: Your set should be able to get them quite satisfactorily, as it was designed to do so. However, if you could never get them, the chances are that there has been something wrong with the set all along. Will the set oscillate on the short-wave? If so, then, with a little care, you should be able to pick up short-wave stations.

W. C. (Auckland).—Can you suggest from an 11,000 volts line and two power transformers? I have two thirty-foot masts, but I cannot get past the local station.

A.: Your aerial wire should be pointing at right angles to the lines. Instead of the ordinary lead-in take a length of armoured flex, connect this with the top wire and bring it into the set. Earth the shielding of the wire to an earth separate from the normal one, that is, your water pipe. It would not be a bad plan to use a separate earth to the set, other than the water pipe, as these are not always satisfactory when interference is bad. If you could raise your masts another ten or fifteen feet you would probably get better results, but it would be necessary to shield the lead-in as suggested.

B350 (Taumarunui).—Would there be anything gained by changing earth pipes to copper sheet?—No.

2. Would there be a gain by using a shielded lead-in wire from the extreme top of the aerial to the terminal of the receiver?

A.: Only if you are troubled with interference from nearby electrical apparatus. It is possible that by using a shielded lead-in the amount of signal pick-up will be lessened, so, unless interference is bad,

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don't do it. You appear to be getting excellent results.

TYRO (Lower Hutt).—We think you would gain very little by removing the insulator, but your aerial could be improved by the addition of ten to fifteen feet to the mast. The lead-in is not too long, although it is always advisable to bring it as direct as you can. If it has to straggle round the walls, power will always be absorbed. Do not worry because your results are not quite up to the other fellows. It is not always a difference in sets, but in most cases locality is the deciding factor. Your set is an excellent one. We have had very good results with it.

DX25MC (Picton).—Do not use PM26 in the second-last stage. It is purely a last-stage valve.

SOS (U. Hutt).—The condenser is a .00025 and 100 turns of 20 enamelled wire on a 3in. former will match this. The coil would not be as efficient as it might be. You should use finer wire. Say, 26 d.s.c.

MUG (P.N.).—Is it in order for the lightning arrester to have a separate ground, or should it be placed between the ground terminal of the set and ground, as it is between the lead-in and the set? A.: It can have either a separate ground or could use the ground of the set. Your present installation appears, from your illustration, to be correct.

F.C.E. (Dunedin): As far as we can ascertain your set has a tuned first stage, and in this case you must make the following alterations to the h.f. adapter. In the place of "L5" use an ordinary radio frequency choke. "C4" is not required. "C5" as before.

2. As I would have to take my power from the mains, is there a transformer on the market giving the required "B4" and filament voltages?

A.: No. But you could very easily have one made up to the specifications given in the "Radio Guide."

DX74 W. (Wellington): We think your arrangement No. 1 is the better. Stand off insulators will not decrease the efficiency of the antenna in any way, providing, of course, they are kept clean.

HYDRO (Oamaru): Would you supply me with the method of calculating the correct transformer ratio to match a pick-up to a commercial receiver?

A.: We regret there are too many factors involved for you to be able to work out the correct transformer ratio, but, with your receiver, easily the best manner is to connect the P.U. without a coupling transformer. If this does not give you enough volume, use a 2 or 3-1 transformer of a good make.

RADIO (N.P.): In the technical diagram of the "Kestrel Three" the filament rheostat is in the r.f. lead, while in the layout it is in the detector stage. Which was used in the original?

A.: In the r.f. stage, where it acts as a volume control.

2. You state that the .0001 fixed condenser in series with a .00035 produces a tuning capacity of .0001. This is evidently wrong. How should the answer have read?

A.: We meant what we said, but gave our answer in round figures. Actually the tuning capacity would be about .000075, but a tuning condenser of this capacity would be extremely difficult to obtain. .0001 is the nearest practical value.

3. I have a number of .0002 variable condensers. What extra capacities are required in series or parallel to make (a) .00015, (b) .00025, and (c) .00035?

A.: .08 in series, .00005 in parallel, and .00015 in parallel.

DX32.H.B. (Napier).—Since employing a new valve oscillation cannot be controlled.

A.: We suspect the bias resistor in the first stage, or a defective choke. Try a different value of grid leak, and if all these fail try another grid condenser. If you could manage to do so try another valve in the first stage.

2. How many plates would I take off my condenser to reduce size from .0005 to .00035?—Eight.

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