



Questions and Answers



DX6300 (Gore): I have a 7-valve set with an aerial 100ft. in length and 30ft. high. Could you suggest a better one?

A.: Yes; get it up to 40 or 50 feet, using still the 100 feet span. Selectivity will be slightly impaired.

2/How could I improve the selectivity?

A.: In a set such as yours the selectivity troubles can usually be traced to the condensers being out of alignment. This may also account for the slight insensitivity. If you cannot screw them up yourself ask someone who knows something about the game to look at the set.

3. I have renewed all the valves except the 3 radio valves. Would they impair the reception or selectivity?

A.: If they are still functioning satisfactorily, then they would affect neither. If the emission is slightly down both may be impaired.

A MATEUR (Te Kuiti):—I have the original B.D. Four and was getting good results, although the set was not very selective, my aerial being about 140 feet. When I use a 90 feet aerial the set squeals and distorts with the neutralising condenser right out. I have removed all

plates except one moving and one fixed, but the set is far more selective. If I connect the 75 feet and 90 feet aerials together and make a "T" I can neutralise it all right, but cannot get beyond 22Z, and the set is very unselective. I am using three 221's and a 112A. I would like to get the set neutralised to the 99 feet aerial.

A.: The best plan to adapt the B.D. to any particular aerial is to use a midge variable condenser in series with the aerial. You can then adjust the aerial to the optimum length.

O.C.S. (Hamilton):—Will you give the gauge of wire and length required for the field winding of a moving coil speaker—250-300 volts and about 80 amps?

A.: For 230 volts 30 mas. use 38 enamelled wire, 37,000 turns.

SELECTRA (Auckland):—Sorry we left out the table referred to. It is published on the following page.

1. Are the coils for a band pass crystal set connected up as shown? I find that the set works quite as well with the coils shielded from one another.

A.: There can be no justification for using a band pass filter in a crystal set, as it is difficult to see how it would be any improvement.

2. Does a band pass unit work well on shortwave using plug-in coils?

A.: We have not tried it, and do not know of anyone who has, so we cannot answer your question. It is a significant fact that none of the commercial shortwave sets are made with band pass filters.

ROCKFIELD (Auckland):—I want to add a further radio stage to my three-valve set. How can I do this?

A.: A theoretical sketch was given in the "R.R." a few weeks ago under the heading, "The Screen Grid Valve," and it showed the most suitable hook-up for connecting an s.g. valve to a set. Your best plan would be to pull the set down and build up the Differential Four, or construct a set after that type.

DX 32HB (Napier):—I wish to construct the "Outspan Five," and would like to know the following:—

1. The coil winding of the three coils using a .00025 condenser and a .0002 differential condenser for regeneration.

A.: Using 26 d.s.c. wire you will need approximately 108 turns on the secondaries of each of the three coils. The primaries should be about 45 in each case, the reaction about 60. The primary and the reaction coils should be wound with No. 28 or 30 d.s.c. wire. The valves you mention are quite suitable for the set except PM2 in the audio stage. Use a general purpose such as PM1. You may find that a special detector of the PM2DX type will go better than the R.C.C. valve as detector.

LIGHTHOUSE (Nugget Point):—Will the circuit work satisfactorily with push-pull as shown in the accompanying diagram?—Yes.

2. What type of Philips six-volt valves should I use in the stages?

A.: One A442, with 30 ohms fixed resistance in the filament to break the voltage down to four. In lieu of this you could use PM10, or some other six-volt a.g. valve. Detector, A615. First audio, A609. Push-pull, B603.

3. What should the ratio of the transformer be?

A.: 3:1 throughout. Do not exceed this.

B. L.G. (Raetihi):—I am using an x.f. tuner consisting of a s.g. valve and triode connected to a detector. These are coupled into an A.C. amplifier, but every time the set is tuned to resonance, audio howl sets up.

A.: On the surface it appears that the h.f. choking and by-passing is inadequate. Chokes should be situated in the following places: In the plate leads to both r.f. valves, in the s.g. lead. By-pass condensers should be shunted between the chokes and the earth. A choke between the plate of the detector valve and the A.C. unit. The set side of this choke should be connected to the ground through a .0001 mfd. condenser. These condensers should be connected to the A.C. point on the coils themselves, not merely across the battery. Is the shielding of your s.g. valve adequate? It should go right round the valve and should be earthed. Try reversing the connections to the secondary coil of your s.g. valve stage, that is, to make the high potential connection to the point of the coil that is nearest the ground and take the low potential connection from the upper end. This idea was explained fully when dealing with the "Kestrel Three."

K. A. B. (Pleasant Point):—What valves should be used in sockets 1-5 in my diagram? I am using a five-valve battery set.

A.: We are afraid we cannot help you greatly. You have not given us much data to work upon. Had you shown us at which side the dials were and which end your speaker, we could have recognised

the valves. The valve nearest the speaker is usually the power valve and this should be of the B605 class. All the others can be of the 221 type.

2. Which of the two positions indicated on my sketch would be the better for an aerial, AB or AC?

A.: We think AB the better, that is the way you have it at present.

HOPEFUL (Auckland):—It is evidently power interference, and it is not likely that anything can be done to improve the position unless you can locate the source of the noise. We think a Beverage aerial would be no improvement. In fact it may make matters worse.

ADVANCE (Auckland):—If I build the set be entirely satisfactory for broadcast as well as short wave?

A.: Any all-wave set is designed primarily for short wave or for long-wave operation. If you make a short-wave set into a long-wave one you are compromising on the broadcast, and this is what happens with the "Advance." This set has shown itself capable of bringing the Australians and even odd American stations on the broadcast band, but it is not as good as a specially-designed long-wave set would be.

2. Would variable condensers of greater capacity be more suitable if built for broadcast work?

A.: Yes, it would be advisable to use larger condensers and smaller coils if the set is to be used for broadcast work, but then it would not be suitable for short-wave work. Generally speaking, .00035 condensers are quite satisfactory for broadcasting use.

3. What are the specifications for the coils for a .00035 condenser for the Advance a.c. set?

A.: 21n. coils, 26 d.s.c. wire, secondaries 80 turns, primary 20 tickler 25.

4. Alterations required for the power transformer where used for broadcast only?

A.: There is no alteration needed in the power transformer, but if you are wanting

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"Practical Radio Testing Systems" (Rider). 6/6.

1001 Radio Questions and Answers, 1930, "Radio News," 2/6. D.C. to A.C., etc.

"Cameron's Sound Motion Pictures Encyclopedia," 18/6.

"Wireless: The Magic Carpet," 5/6. (Technical Editor "Radio Record" says no set owner should be without it.)

"All About the All-Electric," 1/8.

"How to Electrify Your Radio Set" (U.S.A.), 1/9.

"Principles of Radio," by Henney, 22/6.

"Practical Radio Repairing Hints," by Rider, 13/6. (Don't miss it.)

"101 Hook-ups" ("Radio News" Staff). 2/6.

"Mathematics of Radio," by Rider, 11/2.

"Broadcast Reception" (Theory and Practical), by Pritchard, 11/8.

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

"Radio Amateur Call Book" (June, 1931). 5/3.

"A.R.R.L. Log of Amateur Stations," 2/6.

"Radio Log" (N.Z. monthly), 7d. per copy.

"Theory of Radio Communication," by Filgate, 12/6.

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