

charger with tappings at 2 and 4 volts, 1 amp. Which tapping should I use?
 A.: Connect the positive of the two batteries together and the negatives together and take a lead from the common positive and common negative to the two-volt tapping on your charger.

"SHORTY" (Stratford).—How many grid and plates turns must be wound on a valve base former to tune over the 80-metre band using 30 gauge, d.s.c. wire, and a .00001 midget condenser?

A.: .00001 is a very small condenser to attempt to tune over this band, and you will find that you will have to break it into two coils to get complete coverage. Try the following, grid coil 12 turns, reaction 11 turns, and grid 20 turns; reaction 18.

OVER THE WAVES (Marlborough): What alterations should be made in

the Outspan coils using a .0003 differential condenser?

A.: Reduce the number of turns on the tickler coil by about 10 per cent.

2. The number of turns for the primary using 32 d.s.c.?

A.: There is no need to alter the number of turns from those given in the "Radio Record."

3. The best valves to use in the Philips four-volt series?

A.: A442, A415, A409, B405.

"RADIO" (Wellington): Reception has dropped back with me when it should have improved. The valves are only three months old.

A.: Check up upon your batteries for voltage, your aerial and earth for good contacts. Undo the earth wire where it joins the pipe or whatever you use for an earth and scrape it until it is clean and bright again. If you can,

let down the aerial and examine the wires and see that they are not corroded. Also examine your insulators and see that they are clean.

2. The aerial poles are 35 feet at one end and 38 at the other. Would it better to make both poles the same height?

A.: Most certainly.

3. I can receive four Japs and 30 small stations only with the help of a wave-trap, which seems to add extra power to my set.

A.: The wave-trap is tuning your aerial, and thus making your set more sensitive.

D^X (Dunedin): Is a .000025 mfd. midget condenser too small for short-wave work?

A.: No, if you matched the coils to the condenser.

2. Would you design coils for the short-wave band, using 2in. former?

A.: We regret that we cannot do this, as if we design the coils for every purpose that we are asked we should be doing nothing else.

3. I was experimenting with the resistance-coupled amplifier and the grid leak resistance. I accidentally disconnected

Blue Prints

OUR notice concerning photostat prints published some weeks ago, evidently was not as clear as it might have been, for several correspondents have written to us enclosing 1/6 for the three prints. This is incorrect. The prints sell at 1/6 each, and can be obtained for the following circuits:—The Ranger Two, The Night Hawk Two, and the Sparrow Hawk One.

Blue Prints will be available for future circuits at a slightly reduced price. The photostat prints now offered are of a slightly better quality than a blue print. They are almost actual size, and make the wiring of the set a very simple matter indeed.

the grid leak resistance and discovered that the set worked every bit as well. Can you explain why?

A.: If it was in the plate circuit of the detector valve and there was no other possible chance of the plate current getting through, we cannot. Just examine it very carefully and make sure there was no alternate pass for the current.

RAY DIO (Shannon): In placing a shield round the s.c. valve, how far up the valve from the top must the shield come?

A.: About half-way.

2. I have two phasatrols which I have taken to pieces, and wish to use the fixed condensers. What are the values of these?

A.: .25 to .5 mfd.

H. C. (Christchurch): I wish to build the P.C.J. 4, but would like to incorporate resistance reaction control instead of condenser control. Is my diagram correct?

A.: Yes, that system would work quite well, but probably an easier plan would be to put your resistance in series with the B+ to the detector.

2. What value resistance in ohms would be suitable for all-wave work?

A.: About 50,000 ohms.

3. What number of turns would be suitable for the broadcast band using .00015 condenser?

A.: You would need two coils, for one secondary 80 turns of 30 gauge enamel, with 30 turns for a tickler, 36 d.s.c.; for the other one you need 148 turns of 30 gauge enamel, with 36 turns of 36 gauge d.s.c. for the tickler. The secondaries for both radio and t.r.f. coils will be the same. The primary for the radio coil will be about 8 and 12 turns less than the respective ticklers.

K. A.D. (Wellington): Are the new circuits any better than the "Crystal and Valve," and if so which one? I have had 37 verified stations on this receiver, but since I have renewed my batteries oscillation has been very rough. On part of the dial it will not oscillate, while the remainder produces only a fierce squeak.

A.: This sounds very like your valve; have it tested. If your set has been going well do not interfere with it, other than changing the valve, grid leak, or condensers.

DYNAMO (Waitomo Caves): How can I add a radio frequency valve to my 3-valve set the circuit of which I enclose?

A.: We might have been able to have helped you had you sent us the theoretical diagram of your set, but a weird collection of lines leaves us quite bewildered. However, before very long we shall be adding a radio stage to the "Ranger Two," and this should interest you.

2. I was troubled with audio howl and placed a .0002 fixed condenser across G. and P. of the power valve. This stopped a little and gives me more volume. Am I doing any harm?—No.

FUSE (Hamilton E.): I have a transformer marked P1, P2 and S1, S2. What do those terminals indicate in modern terminology?

A.: P1=B+, P2=P, S1=F, S2=G.

2. Is the choke in the "Ranger Two" necessary, and could I use a fixed resistance instead?

A.: You may be able to work without the choke and use a resistance, but the choke is preferable.

3. Is one terminal on to the fixed plates and one on to the moving plates in a condenser or are both terminals on the fixed plates?

A.: One terminal is for the fixed plates and one for the moving. The moving plates are connected together and to earth.

BROADOLA (Auckland): Can you give me the coil data for P.C.J. 4, using .0001 double spaced condenser for tuning and reaction coil wound on valve bases?

A.: If you refer to the table as published in the "R.R." a short time ago and use the specifications for a 1 1/4 in. diameter coil you will be about right.

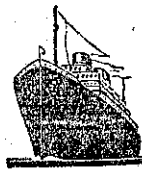
I AM constructing the moving-coil speaker described in the "R.R." some time ago. Would it be suitable for my set using a 201A in the last stage of the amplifier?

A.: By not having a proper amplifier you will get no better results than if you

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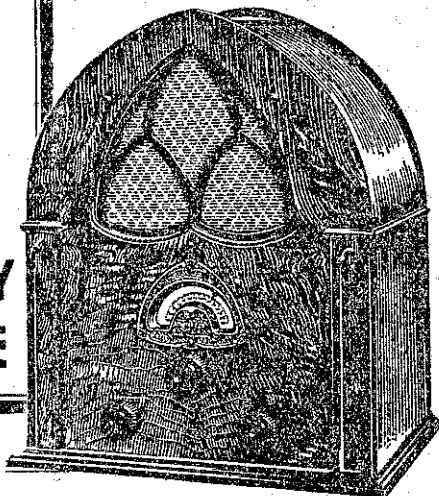
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