

Questions and Answers



Single versus Parallel Wire Aerials.

"W.H.C." (Wellington) asks regarding aerials: Do you consider an aerial of two parallel wires 25ft. long more efficient than a single wire aerial of the same length?

A.: They are if separated by about 6ft., otherwise the difference does not make worth while putting up the extra wire.

Valve Combination.

I HAVE an American set, and wish to know the best combination of valves, asks "F.H.G."

A.: Use 201A Radiotron or Cunningham with each of the first five stages, and in the last use a power valve of the 171A type. It is not necessary to use an American valve in this socket. Any of the medium power valves will do.

Distortion.

I HAVE a six-valve set, but reception has been distorted. I am using two DEP610 valves in the last two stages, states "L.T.H." (Bay of Islands).

A.: You are probably using a power valve that is too small. Try the 171 type (P625A Marconi) with about 40 volts bias, if you are using the full 180 volts, 27 if you are using 135 volts, and 15 if you are using 90 volts. You may have a defective valve, which can be tested by an expert. The speaker may not be able to carry the load, or the "C" battery may be run down.

Short-wave Problem.

"R.A.M." (Auckland) asks concerning a short-wave receiver:—

1. Why is my circuit legal when the short antenna is connected directly into the grid circuit?

A.: In effect, it is loose coupled, for it has a variable condenser in the aerial.

2. When working certain stations reception is spoiled by a loud shriek which can be eliminated only by loosening the reaction, but in a moment it is back again. Can it be that these stations are hetrodyned by nearby morse stations?

A.: That is probably the trouble. These stations may possibly be amateurs working in the neighbourhood. We advise you to contact with the secretary of the Amateur Radio Transmitters' Association, Auckland, and enlist their co-operation. If you could identify the morse stations it would help you.

3. I frequently hear stations KGO and WGY on short waves. What are the designations of the stations broadcasting these on short wave?

A.: KGO is broadcast on short wave by W6XN and W6AF, WGY by 2XAF and 2XAD.

"Round-the-World" Two.

WHAT is the correct number of turns on the coils? asks "R.R." (Christchurch).

A.: There are five coils to tune between 10 and 70 metres; 4, 5, 6, 8, and 12 turns.

"L.H." (Mercer) asks: Could he use an "A" and "C" eliminator with the "Round-the-World" Three?

A.: If the "A" current were sufficiently smooth, yes.

2. In making tappings for the short wave and broadcast coils, would a twist tinned suffice?—Yes.

3. What type of neutralising condenser would you advise? Would a Lissen be all right?

A.: Any of the well-known makes. The one you mention is O.K.

Legal Points.

MUST I have a separate primary on a 1-valve anode-bend set, or can I connect it directly to the grid.

A.: You can connect it directly to the grid coil, providing you have a neutralising condenser in the aerial. Be careful in operating the set to prevent annoyance.

2. Is auto-coupling considered direct coupling as far as the regulations are concerned?

A.: Auto-coupling is usually approved only when there is a series condenser in the aerial. The P. and T. Department in approving a set usually take into account the liability of the set to oscillate, hence they look with disfavour on such as employ a large number of reaction turns, and have a high voltage on the plate.

3. By using two general purpose valves in parallel in the last stage, could I bias back and so get greater swing?

A.: It is not advisable. The system of paralleling output valves has long since passed out of date. Far better to use one single power valve.

4. Would the impedance of the valves in parallel be doubled or halved?—Halved.

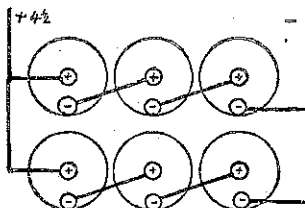
5. Can you tell me the make of a transformer to match a medium high impedance detector?

A.: One with a very low ratio and made by a reputable firm should suit your requirements.

Cost of Upkeep.

I AM perhaps one of your very rare readers, states "M.S." (Otago), for I have no radio. We are hoping to get a small set, say, three valves, but have been told that the upkeep is about £10 a year. Is this so?

A.: No. It is about half this, if care is taken in the choice of batteries. Use 90 volts "B" and employ the large size batteries. Use four "A" batteries in-



stead of two, and connect them by the series parallel method shown in the accompanying diagram. Omit the two last cells.

Push-Pull Transformers.

WOULD you give me the details of push-pull transformers suitable for the 245 valve? asks "A.B."

A.: We do not advise you to make these, as they are not expensive, but involve a great deal of intricate work if home-constructed.

2. What should be used in the amplifier preceding these?

A.: Two 227's R.O.C. coupled. Use $\frac{1}{2}$ megohm grid leak in the grid circuit, a .01 coupling condenser, and a choke coil of about 100 henries in the plate circuit.

A Crystal Set Amplifier.

YOU may be interested to hear from a successful constructor of the A.C. amplifier in the All-electric Handbook. There is no trace of hum up to 201A valves for rectifier and amplifier. The volume from a crystal set is ample. Would you clear up the following points:—

1. There was not much room in the window of a transformer for three filament windings, so can I take current for two 5 amp. valves off one 5-6-volt winding?

A.: Yes, providing the gauge is not less than 22 s.w.g. two valves in cascade will not operate successfully unless a special A.C. valve is used in the first stage.

2. There is bad backlash with a circuit using separate valves to detect and amplify in a short-wave circuit.

A.: This is probably inherent in the circuit which attempts to utilise HF amplification. This is not unusual.

Capacity of Variable Condensers.

I HAVE a variable condenser with 11 fixed plates and 12 moving. Could I use this in making up the All-wave "Round-the-World" Two as illustrated in the "Record."

A.: It will be a .0005, which is too large for short-wave work. It will be necessary for you to obtain a .0082 condenser.

2. How is the capacity of a variable condenser calculated?

A.: It can be done only with elaborate instruments.

Short-wave Kit Set Problem.

I HAVE a combination broadcast and short-wave kit set which has been working well on the broadcast band, but I cannot get the set to oscillate on the

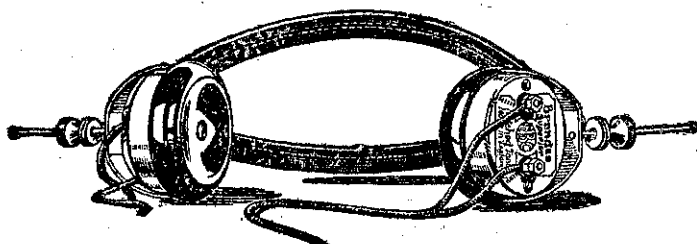
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