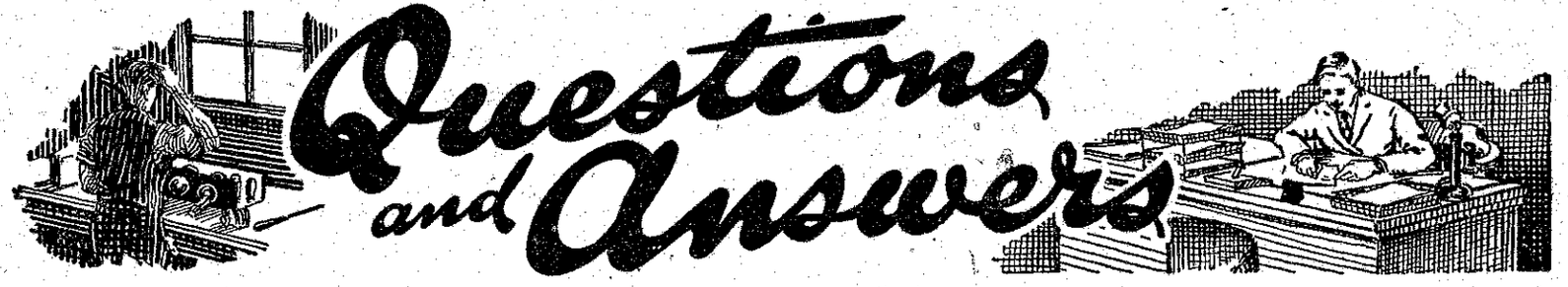

Condenser Control Reaction.

COULD you publish a circuit of "Pentode's" crystal and valve, using condenser control reaction? "R.J.H. (Christchurch).

A.: Construct the Tetrode crystal and amplifier described in our issue August 9, 1929, but if you prefer to do so, use the three-electrode valve in place of the tetrode.

Logging the Japs.

WHY cannot we get the Japs. and the Americans? asks "K.J.S." (Blenheim).

A.: We cannot say! You have given no particulars of the number of valves you are using, the voltage applied to the valves, the state of your batteries, or the condition of your aerial and earth.

Crystal Set Problem.

COULD a crystal set be constructed to receive short-wave? asks 'C.W.V." (Wellington).—No.

2. On what band do the commercial and ship Morse stations operate?

A.: Below 500 kilocycles, or above 600 metres.

List of Stations Required.

WOULD you give a list of some high-powered American stations? asks "Listener" (Southland).

A.: Such a list was published in our issue of January 4, 1929.

Artificial Static.

"SATISFIED" (Westport) asks the following questions:

1. Will old valves make a receiver howl when tuning in?

A.: Very rarely. Only occasionally do old valves develop unusual symptoms. The general sign is all-round weakening.

2. My set is reproducing artificial static but my "B" and "C" batteries are new.

A.: See our article on interference.

3. My "A" battery positive plates are scratched. Would this cause the static?

A.: It will probably denote that the battery is worn out, and this could account for the static.

4. How may I test my transformers?

A.: Connect a pair of telephones (or a loudspeaker) to a battery, so that one terminal of each is free. Touch these two terminals, and a loud click will result. Place these on the terminals of the transformer to be tested, and a click should result when the two primaries or two secondaries are touched. The two primaries are denoted usually by "B plus" and "P." If a click does not result, or if a click results by connecting one primary to one secondary, the transformer is defective.

The Browning-Drake.

WHICH is the better set to construct, asks "K.D.R." (Kaiwarra). The S.G. Browning-Drake, or the 5-valve shielded Neutrodyne?

A.: For tone the Neutrodyne will probably will be better, but for best all-round qualities the two R.F. Browning-Drake, for simplicity, the A.C. Browning Drake, which is best.

An Output Filter.

"A.J.J." Auckland) sends a sketch of an output filter. He asks which of the leads is plus and which is minus.

A.: Once having passed through the output filter it is immaterial which side is connected to the speaker.

Valves for Testing.

HAVING ruined three valves, states "N.D.C." (Auckland), I wish to use the base of one in conjunction with an electric flash-lamp as a safeguard.

A.: As you suggest, cut away the glass of the detector valve and solder the filament leads to a 1.5 volt torch battery. This would blow out when more than about 2.5 volts were on the filament.

Distortion with Fading.

I HAVE a good log, writes "J.B." (Murchison), and wish to strengthen the reception of weak stations with little cost. I have a good aerial and earth.

A.: There is little you can do without adding another radio stage, which would cost you probably £1 10s.

2. When the station fades, distortion occurs. Is this usual?

A.: A certain amount of distortion is always caused when a station fades, but it is rarely perceptible to any more than the trained ear. However, it appears that you do not appear to have enough grid bias on the last valve. Increase this to about 12 volts.

3. Can you give me any information regarding the Air Line 6? I would like a circuit diagram.

A.: We are sorry, but we do not have details of this set. Probably it is a six-valve neutrodyne.

A Request.

AS you are going to publish an all-electric edition, would you kindly give an article on the construction of an "A" eliminator for a two-valve amplifier? writes "G.H." (Wellington).

A.: With the greatest of pleasure.

Burnt-out Rectifier.

"G.H.J." (Mangaweka) has found that his new gaseous rectifier has burnt out in six weeks, whereas the one previous to this lasted for ten months. He states that he discovered that his "C" battery had been disconnected.

A.: Unless the rectifier was built to rectify less than 50 milliamps. per hour, the fact of the "C" battery burning out would have no effect. The defective "C" battery means that the power valve was drawing its full rating of current, which may, in some power valves, go up to 50 milliamps. However, the usual filamentless rectifiers would deliver over 100 milliamps. It appears rather that the valve was defective.

Volume Control.

"S.O." (Ngaio) wishes to know how he might control volume without spoiling the quality of his two-valve amplifier.

A.: Secure a variable resistance of 0 to 10,000 ohms and place this between the aerial and the earth.

Battery Charger Problem.

HOW can I use a vibrator charger delivering 6 volts to charge a 4-volt or a 2-volt accumulator, when only one tapping is provided, asks "R.H.P." (Southbridge).

A.: A very heavy resistance of ½ ohm. in the case of the 2-volt accumulator, and a ¼ ohm. in the case of the 4-volt accumulator, must be placed in series with one of the leads to the accumulator. The carrying capacity of this must be at least 8 amps. The charging rate would also be reduced.

Linen Diaphragm Speaker.

"T.S.E." (Blenheim), asks if window blind material will be suitable for the linen diaphragm loudspeaker, but it is rather too heavy. Suitable linen material can be obtained from George and Doughty, Victoria Street, Wellington.

2. Where can I obtain a suitable unit?—Try Smyth and Co., Victoria Street, Wellington.

3. Is the enclosed circuit correct?—Yes, from what we can see of it.

The Two R.F. Browning-Drake.

WILL the Two R.F. Browning-Drake work from an electric B eliminator? requests "Newcomer" (Cambridge).

A.: Yes, very well, because high voltage can be obtained for the last valve. If filament winding are provided the power for this valve can be drawn from this source.

2. Is it possible to construct the radio stages and detector, and pick up the main stations with 'phones. I wish to get this part of the set working before adding the audio stages.

A.: A good idea. It will work quite well.

3. Where can I obtain an illustration of the Two R.F. transformers showing the method of mounting?

A.: Tuning coils were fully discussed by "Megohm" in our issue of July 5, 1929. A diagram is given on page 30 showing precisely how this is accomplished.

4. Which of Philips valves are suitable for the R.F. stages, and what is the number of turns required in the primaries, and what is the value of the rheostat to control them?

A.: 600's with twelve turns on the primaries, that is providing the tuning condensers are .0005, and the secondary