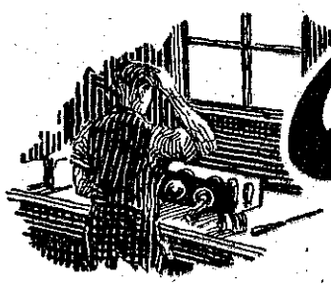

Questions and Answers

Full-wave Crystal Set.

CAN this circuit be used without the primaries? I am having trouble with the second crystal.

A.: No, the secondary would be short-circuited. See answers to correspondents last week.

Various Points.

"S. E.H." (Christchurch) writes asking:—

1. Which is the best method of marking a panel?

A.: There are principally two methods which might be employed to advantage: pasting a piece of paper over the face of the panel and marking it out from that and scoring out on the back and rubbing with chalk to bring the marks up clearly. If lettering is to be done, it should be placed in the hands of a manufacturing firm who have the equipment necessary for this work.

2. Can a "B" battery trickle charger be used as an eliminator?

A.: It is most unlikely that such an eliminator would be of the full-wave type, and consequently would not be able to deliver a very substantial current. By the time this was filtered the voltage would be too low to be of service. However, if a small set is to be fed the addition of a choke in the positive lead and 4 mfd. condensers on either side connecting with the negative, would allow sufficient current to pass to work the set. If a filter system is not employed the hum would be too great.

3. Can an extra R.F. stage be added to a three-valve reflex set as a separate unit?

A.: It would be far better to rebuild using the parts for a four-valve set. The R.F. booster described by a correspondent would probably be effective in this case, but not so effective as a rebuilt set.

4. What is adaptor harness, and could it be used on this circuit?

A.: An adaptor harness comprises a transformer and a series of adaptors connected so that on plugging these into the valve-holders A.C. valves can be fitted without any alteration to the wiring. Although this harness has been found to work successfully on a neutrodyne and on a regenerative set, it cannot be said authoritatively that it would work on a reflex though we can see no reason why it should not.

5. I have heard it said that a battery charger can be employed as an eliminator merely by floating a B battery across its terminals and connecting these to the set. The B battery need not be new. Is this feasible?

A.: Cases where an A battery can be fitted up in this manner are quite common, though we have never heard of a B battery being used in this manner. It has been suggested that the A battery accumulator shunted across the terminals to the chargers acts as a condenser, but the precise explanation is not available. In the case of the B troubles caused through a high resistance battery would no doubt disturb the smooth operation of the set. If the charger could be borrowed, the experiment would be well worth while.

The Value of Inductances.

"F.N.S." (Wellington) wishes to use a .000125 condenser where his specifications are for a .0003 variable condenser. He asks the following questions:—

1. With a 2½ inch coil former, how many turns should be placed on the aerial coil to tune from 15 to 30 metres, and secondly, from 30 to 80 metres? How many would the secondary require?

A.: To tune from 15 to 30 metres three turns on the aerial coil and four on the secondary coil. A .000125 condenser will not tune between 30 and 80 metres. Two coils will be necessary.

2. How many turns will be necessary for the tuned anode stage?—Four on the secondary and five on the tickler if close wound.

3. What size of former do you recommend?—Three inches.

4. I have on hand a reaction condenser, .0002, and a quantity of 20 gauge D.S.C. and 20 gauge enamelled wire. What other sizes of wire would be more efficient?—These will be O.K.

5. Will I have to make any other changes in the circuit to change the condenser values?—No, other than changes in the coils.

6. For the high-frequency choke, and 30 gauge enamelled wire on a 5-inch former, how many turns are required?—175.

7. Will the "Radio Record" choke do for the detector stage?—Yes.

8. I have a 625 screen grid valve. Will this be as good as any other?

A.: In this circuit it will be better probably than the vertical type of S.G. valve.

Browning-Drake Problems.

CAN I use a 22½-volt battery for the detector stage only and run the eliminator for the two stages of audio in my four-valve transformer coupled Browning-Drake?

A.: Yes, if it will oscillate, always use the lowest voltage possible.

2. I get good results, but since under baseboard wiring has been put in I have been unable to put more than 4 "A" voltage on the filaments of the audio valves, when tuning low wavelengths.

A.: Reverse the primary connections of one of the transformers. If this does not stop the trouble, introduce a little damping by means of a low value grid leak in series with the grid of the last valve.

3. I used to put a .0001 condenser in the aerial to balance the dials, but when I do so now the set howls, whenever the tickler is up or down, and I can cut it off only with the R.F. rheostat turned down two-thirds.

A.: The set appears to be not neutralised. Try re-neutralising, or, if this will not stop the trouble, use a higher impedance valve in the radio stage.—Hammer Chewer (Bluff).

A Wave Meter.

CAN you tell me how I can make a wave meter?—"A.J.M." (Wellington). I do not know the wavelengths of my coils.

A.: The description of a wave-meter would be beyond the scope of "Questions and Answers." It has been fully described in Handy's Handbook, the journal of the United States amateur transmitters. It can be obtained from several booksellers, but probably an amateur transmitter would be able to lend you one. Its construction is anything but simple. The easiest way to calibrate coils approximately is to make a graph for each, plotting the wavelength against the dial reading, and a curve will thus be obtained which will show quite clearly the limit of the coil in particular.

Accumulator Runs Down.

"DEAD Battery" (Eketahuna) complains that when his set is turned on every night for more than 2½ hours the battery runs down, and the trickle charger has to be on for 24 hours to make up the deficiency.

A.: Either in the battery itself or in the set there is a short circuit. Charge the battery as full as possible and leave it stand, to note whether it is discharging. If this is the case, the battery should be taken to a service station for repair. It is possible that some of the plates have become dislodged or that a sediment has form-