

QUESTIONS: ANSWERS

FRANK KEE

The Technical Editor will, through these columns, be pleased to help readers experiencing trouble with their sets. Queries are limited to three—for more than this a shilling fee is charged, and a similar fee is payable for queries answered by post. Supplying layouts, circuits and solutions of intricate theoretical problems is beyond the scope of this service.

A coupon must accompany all requests for information. Non-appearance of the coupon in any issue cannot be regarded as a reason for its not being used.

Address all queries, The Technical Editor, Box 1032, Wellington.

A. H.C. (Swanson): We do not think radio science will totter because of your disproofs. Before you can disprove a thing you must know something about it. We would advise you to look up a few text-books and then start all over again.

OMSK (Waikanae): If I connect my earth to the aerial terminal I can obtain good results, but on turning up the volume a loud surging noise is heard. Why?

A.: By taking off the earth you are working your set nearer the oscillation point. By forcing the volume you cause it to break into oscillation or go very near to it. Hence the surging noise. You are in no way harming your set, although your neighbours may bless you.

2. If I remove the two power valves will I get less static and better volume?

A.: No, if you take out the power valve your set will stop unless it is specially fitted to take earphones from the first audio transformer.

3. I am troubled with a crackling noise in the day time only.

A.: This seems to be a nearby interfering electrical apparatus. Probably something that is operated during the day only, e.g., an electric motor.

KENTY (Kopaki): Your dynamo will charge probably at 1.5 amps. The method of calculation is by determining the watts output and having the voltage you can ascertain the charging rate. The two sets of figures, however, do not agree. When charging at 6 volts it appears that it is capable of a 12 watts output, while at 80 volts it appears to be 20 watts. Taking intermediate result of 15 watts and charging at 10 volts you can see that the rate would be 1.5 amps.

2. What may cause the primary of an audio transformer to burn out when connected into the detector plate circuit?

Information Coupon

(To be used with all requests for information.)

Name of set

Number of valves

Name

Address

Nom de plume

To be kept in subsequent inquiries

Date

Please Note:—

- (1) Be specific and brief, tabulating, if possible.
- (2) Write legibly, and on one side of the paper.
- (3) We do not design circuits, but accept suggestions for feature articles.

A.: Excessive plate current taken by a power valve used as a detector or a poor transformer.

3. My "A" battery runs down very fast. When I connect the dynamic speaker to it there is a small flash. Does this indicate trouble in the speaker?

A.: No; it merely indicates that the speaker field takes a fairly large current and this causes a flash.

4. Does the speaker still draw current when the set is shut off and the speaker left connected to the "A" battery?

A.: Certainly; when you have finished cut off the field of the speaker. Perhaps this is why your battery is running down.

HIGH AND LOW (Frankton): Your proposition is not a practicable one, unless you know a fair amount about electric sets.

D. C. (Gore): I have built broadcast coils for my four-valve short-wave receiver, but it is very broad. How can I improve matters?

A.: Tap the coil in the anode circuit of the s.g. valve and try taking the connection from the anode of that valve into one of the tapings instead of to the top as at present. Reduce the number of turns in the aerial coil to 20. By doing this you may lose a certain amount of sensitivity. Bias the radio valve by inserting a 1½-volt grid bias battery between the end of the coil and its connection with A—. Try a midget condenser in the aerial.

OPTICS (Dunedin): The volume control on my set is far from steady. Instead of giving graduated volume it will suddenly jump from very quiet to a roar. If tuned to the local station further rotation of the volume control will cause the signals to become weaker, but on moving the tuning dial off resonance, the signals come back strongly again.

A.: The volume control should not be jumpy. This indicates a defect in the resistance compassing the volume control. The diminishing of the signals on the local station indicates that the set is being overloaded. When you tune off resonance you weaken the applied signal, and consequently the overloading ceases and you again get the maximum amplification from the set.

2. By swinging the small tone control from zero to maximum I cannot detect any difference in tone other than an increase in volume and noise.

A.: Some tone controls are like that. Instead of accentuating the bass they merely by-pass the higher frequencies, which, by the way, are the ones causing the crackling noises. The fact that these disappear indicates that your tone control is operating. The apparent reduction of volume is caused by these high frequencies being cut out.

3. What parts of the valves are affected or controlled by, (a) the volume control, (b) the tone control?

A.: The volume control affects, usually, the voltage on the screening grid of the s.g. valve. In the newest sets it operates

on the cathode. A tone control is a resistance between the grid of one of the audio valves and a condenser connected with some point of low potential.

DX15W (Shannon): How many turns and what gauge and type of wire would be required to be used on the stampings of an old audio transformer in order to make an output choke?

A.: You will require about 10,000 turns of No. 36 gauge enamelled wire. Take out tapings at every thousand turns. If the bobbin is not quite full when you

have finished the 10,000, continue on until it is full.

2. Would the wire have to be wound in regular layers or jumble wound?

A.: You need not worry about insulation, but wind on the wire jumble fashion. Take out the taps by carrying the wire over to one side. There is no need to be exact in the positioning of the taps. A few turns either way will not make any appreciable difference.

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