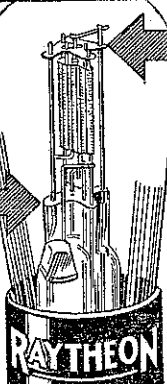


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S-O-S

TRAVEL IN COMFORT BY
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NEW PLYMOUTHEVEREADY
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A.C. VALVES4 Pillar
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Top and BottomSet a
New Standard
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QUALITY
LONGEVITY
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SETS THE PACE!
By every test—
Jensen
DYNAMIC SPEAKERS
ARE SUPERIOR

Questions and Answers

(Continued from page 10.)

wavelengths is rather difficult to explain. It would need a thorough investigation of the set itself, and a certain amount of experimenting.

J. K. (Dunedin): Is it possible to use earphones with my nine-valve superhet. a.c. set?

A.: Yes. An article appeared in the "Radio Record" some time ago explaining how to join up phones instead of the speaker. It is not altogether satisfactory, however, owing to the amount of noise that is present on the phones. It is doubtful if you could bring in stations which you can barely hear now, owing to the increasing noise level.

IGNORANT (Picton): Are there any regulations governing the use of B eliminators on d.c. mains?

A.: Yes, they must be constructed by a licensed wireman, and conform to the standards laid down by the Public Works Department for electrical apparatus to be connected to the mains.

2. Is a person who has a dealer's license, and not a registered wireman, liable, if he connects a home-made B eliminator to the mains?

A.: We believe he is. However, the regulations are being redrafted, and in the meantime it is unlikely that any action would be taken.

53MC (Christchurch): Would it be an advantage to use full-wave rectification with the power-pack I sketch?

A.: We suggest you use full-wave rectification, as you have shown.

2. Please supply the following heater winding for two 227's, and filament winding for the 280, and the size of the wire to use.

A.: Why did you not tell us the size of the core? We have more or less to guess. If the number of wires on the primary is correct, we presume you are using a 50-watt type of transformer, with a lin. core. Under the circumstances the number of turns to put on for the 227's would be 24 with 16-gauge wire. Five-volt winding would require just twice this number of turns with 18-gauge wire. The secondary, if full-wave rectification is used, would give approximately 150 volts rectified. The size of the transformer appears to be correct.

"CONSTANT READER" (Auckland): A shock is experienced if my gramophone is touched while the pick-up is being handled. Incidentally, a boom comes through the speaker at the same time.

A.: If you do not feel competent to do it yourself, ask a radiotician to examine your turntable, for quite obviously there is a short between the wiring and the frame. This is not only dangerous but is causing the boom you speak of. It is, however, quite easily rectified.

"20" (DUNEDIN): Which valves do you suggest as best for my Radiola 20?

A.: The set is designed for 199's, so doubtless you could use 120's merely by reneutralising. This is quite a simple job, done by the dummy valve method.

2. I am operating the set with 3002 eliminator, but it will not oscillate except on about 2NC's wavelength. Why?

A.: Should the Radiola 20 oscillate at all? You can make it oscillate on other wavelengths by increasing the detector voltage. If you took your set to a dealer and it is not satisfactory, then by all means take it back and demand that it be put right. After all, you are the judge as to whether the set is right or wrong, and you should make this point with the dealer. Ask someone outside if the tone seems to him to be right. If not, then you know what to do.

DX10HB (Woodville): How can I connect an additional speaker to my "Nine in Line" receiver?

A.: After the volume control connect a 100,000-ohms potentiometer across the terminals and regulate the volume accordingly. This potentiometer can be connected at the extension speaker or at the set.

"FED-UP" (Greytown): How can I cure threshold howl? I have done everything that is usually recommended.

A.: If the circuit has been rebuilt two or three times then why not change over to another type? Have you shielded the panel or tried mounting the whole set on metal? Probably the chassis type of wiring would permanently overcome your trouble, if you use the chassis such as that used for the "R.C. Two" in the current "Times," mounting some of the components on top and others underneath. Mount the B batteries underneath and keep the grid leads short. By arranging the circuit so that all moving plates of the condensers are earthed, they can be mounted on the panel. We think that would overcome your trouble.

"HISS" (Auckland): How can I eliminate or minimise a loud hiss caused by the power wires outside my house?

A.: Your aerial should be at right angles to the power wires. This would tend to minimise any noise, although it is difficult to eradicate it entirely.

"RADIOTRON" (Auckland): I have difficulty in separating the stations on my five-valve electric set. I tried the wavetrap with little success. Would a band-pass filter as described in the "Guide" be satisfactory?

A.: A band-pass filter would certainly sharpen up the selectivity of your set. Improvements have been made to the band-pass described in the 1932 "Guide," although that one is perfectly satisfactory. We hope to have something to say about band-pass filters in a forthcoming issue of the "Times." However, build the one in the "Guide," and if at any time you wish to alter it you can do so without buying any more components.

"ANXIOUS" (—): I have an aerial 80 to 90 feet in length and about 22 feet high, but I cannot separate 2YA from other stations nearby. Is the aerial at fault?

A.: Your aerial is probably not at fault. Try a band-pass filter or at least a wavetrap. See the answer to the previous correspondent.

"SUBSCRIBER" (Ruatoria): We have had no experience of a Beverage aerial on shortwave and do not know of anyone who has. Full details of this particular type of aerial appeared in the 1930 "Radio Guide." The subscription for the "Radio Record" is 12/6 in advance, or 3d a copy.

"NEVA" (Wellington): The output would be about 10 watts.

DXER (Dunedin): How much an hour does it cost to operate a seven-valve a.c. set in the Dunedin city area?

A.: It depends upon the type of set. The average seven-valve set takes about 100 watts, which is a tenth of a unit, and so you can find out how much it takes to operate. We do not happen to know the city rate in Dunedin.

2. When three r.f. stages and the detector are brought into resonance oscillation becomes sloppy.

A.: If you are trying to get oscillation with three stages of r.f. you are an optimist. Why attempt to use it, as it only causes instability and difficulty? If you must do so, then you will have to experiment until you get it smooth as a result

of your own experimenting.

3. How can I utilise 10,000 and 100,000 ohms carbon variable resistances as a tone control?

A.: Use the 100,000 ohms variable resistance with a .05 fixed condenser between the plate of your valve and earth.

"BIFF" (Christchurch): Can an ordinary power transformer be used instead of the power pack for the multi-mu pentode?

A.: Any power device which will supply the output called upon will be quite satisfactory. Yes, the aluminium partition is earthed.

B. S.A. (Wanganui): The resistance at "Y" is 17,500 ohms; the resistance at "X" is 65,000 ohms. Yes, it is better to cut the stallo after the winding is finished and make it fit close to the wire.

3. What is the carrying capacity and the resistance of the enclosed wire?

A.: It is 39 s.w.g. and will carry approximately 50 mills. The resistance is .6 ohms, an inch.

HOOK-UP (Matamata): I get hum with PM6, but not with B603, yet the former is the better valve otherwise.

A.: PM6 is a fairly high magnification and takes a relatively small filament current, where P603 has less amplification and has a heavier filament. It is therefore not so susceptible to the changes in temperature occasioned by the alternating current and consequently there is less hum. P603 will not give as loud signals as PM6, but it would probably be the better one to use.

2. My short-wave adaptor will tune in the carrier waves while the set is oscillating, by tuning with the reaction condenser. Why is this?

A.: For each dial setting there is an optimum position for the reaction condenser, and this must be altered for every change in dial position, and consequently it seems as though you have to tune with an extra dial.

The correspondent adds: Some notes on my "Outspan 6" will no doubt be of interest to you. I have added a third screen-grid stage and have ganged them, using a double drum dial, a second dial controlling the detector coil. Two balancers are used in the second and third r.f. stages, and efficiency does not appear to be impaired by ganging. Sensitivity is still there, and selectivity is improved by the extra s.g. I have experimented with the primaries, but have reverted to the original one.

UNCERTAIN (Christchurch): I wish to construct a 50-watt power transformer for a three-valve a.c. set, using 235, 224, and 247 valves. Could I get all the wire into the window?

A.: Although your window is very small, you will just have room providing you wind the secondary for half-wave rectification—which would be quite satisfactory. You could use the 280 valve by tying the two plates together and use fine soil instead of the usual Empire cloth for insulation. The transformer is very small, and you have to cut everything very fine in order to make it fit. It would pay you to use 36 gauge wire, which would be quite sufficient for your purposes.

2. What are the number of turns and the gauge of wire for the filament of the rectifier and the other valves?

A.: The rectifier, 47 turns of No. 18 gauge wire—this is a rather severe setback to your transformer, as it will take up a great deal of space—and two windings of 18 gauge each 24 turns. This is cutting things fairly fine, but only by doing this can you make your transformer do. Even then it is a gamble. Why not use a metallic rectifier?

3. Would I be able to use electrolytic condensers with a peak voltage of 470V? Yes.

HOPEFUL (Wellington):—My set is unselective. It comprises three radio stages and two audio.

A.: By the pencilling it appears that the band selector in front of the first valve has been cut out. This, in our opinion, is a mistake as, although three stages of