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WELLINGTON

Day and Night Service



sity until the end of the dial is reached. The local agents have been unable to remedy the fault.

A.: There is undoubtedly a fault in your set which only a systematic search with suitable test instruments could reveal. However, it could be suppressed by inserting a 500-1000 ohms resistance in series with the grid of one of the r.f. valves. This resistance could very easily be put in without pulling your receiver about in any way. The dissipating qualities of the resistance need be very small indeed, as it is not called upon to pass any current. Maybe there is a short-circuit in one of the chokes, and this would not be easily detected. It may help you to bring the aerial in successively to the grids of the three screen-grid valves and to make the test for oscillation. It would then be possible to discover in which stage the trouble lay. We are picking it to be the second valve, possibly because L4 has short-circuited. If the trouble has always been the same it may be necessary to further de-couple the stages, but this is quite beyond the capabilities of the average amateur.

"SUPER SIX" (New Plymouth): I have built the "Super Six," but the stations can be received on two places on the oscillator, and the set will not get 2FC at night on the loop.

A.: It is quite in order for the oscillator to bring in the stations in two positions, one at the sum of the frequencies, two, at their difference. Your locality is possibly against 2FC being brought in at night.

We are sorry your previous queries were mislaid.

L.S. (Sydenham): Would ice made from tap water, when melted in an earthenware vessel, be suitable for use in an Edison B battery and in jars of B chargers?

A.: It wouldn't be safe to do so. It would be better to collect rain water in the earthenware vessels and use that.

H.E.L. (Miramar): I intend to construct a transformer for an eliminator, but am not clear as to how to calculate the number of turns for the filament voltage on different-sized cores. I could not find any table in your "Radio Guide."

A.: A suitable table appears on page 146, giving the number of turns per volt as 9. It is not easy to calculate the number of turns per volt. However, the figures given will be near enough for most practical purposes.

"LOCO." (Wanganui E.): I have an umbrella aerial of approximately 100-130 feet in length on 65 feet masts. My reception of short-wave stations is only fair. Can I improve my short-wave reception by making any alteration to the aerial?

A.: Yes; it is far too long. Erect a much shorter aerial for short-wave, and do not exceed 100 feet, including the lead-in. You are using about 165 feet in all. Try first of all reducing the effective capacity of the aerial by the usual .0001 condenser in series.

2. What type of aerial is best for the operation of an all-wave set?

A.: An aerial of no greater length than 100 feet, while a single wire of from 30-40 feet would be more effective for short-wave reception.

A.W.L. (Petone): What are the requirements of the radio serviceman's examination? Is Morse included?

A.: A syllabus of the examination can be obtained from the registrar. It entails only a knowledge of simple service procedure, together with the basic principles underlying radio. Morse is unnecessary.

N.E.X. (Auckland): Would a C battery improve my set when used on the broadcast band, and not spoil the short-wave reception?

A.: We are sending your diagram marked showing where to include the C battery.

"SATANAS" (Auckland): Reception from 1ZQ and 1ZS appears to be harsh compared with other stations. If

the dial is moved slightly off these reception is distorted. The same to a lesser degree applies to 1ZB.

A.: In modern superheterodyne circuits the slightest variation of the tuning dial from the exact resonant point, that is, the loudest point on the tuning dial, causes distortion. However, it should be quite clear from the two local "B" stations, providing they are tuned in accurately. Turn the volume control down very low, and tune for maximum signal with the centre dial, and then adjust the volume. If it is still harsh and not so on other stations, the trouble is probably in the stations themselves, but if the same symptoms are noticed over a wide number of stations, the trouble then can be blamed to the set.

2. Should the set oscillate? If so, at what point?

A.: No.

3. Would bad weather conditions result in the trouble explained above?

A.: It is most unlikely.

A.F. (Pahiatua): How can I tune in to American stations? I am using a five-valve set with three 45 volt blocks.

A.: The ability to pick up the Americans depends very much upon your locality and on the condition of your aerial and earth. Your set is not a particularly powerful one, and you may have difficulty in logging them.

W.K. (Christchurch): What is the effect of insulators in the stays supporting the aerial mast?

A.: The use of insulators prevent leakage, mainly through capacity effects, from the aerial to the stay wires and where a steel mast is used it is preferable to have them, but not absolutely essential. After all, they do not make a very great difference.

"UBIQUE" (Wellington): I have a shortwave converter attached to my superheterodyne set. I do not require to use the 65-200 metres on the shortwave and would like to use two valves for the shortwave converter on the broadcast band, and still retain the 20-65 metres band. Is this practicable?

A.: No; the valves in a shortwave adapter rarely amplify. Their function is merely to transform the high frequency impulses picked up by shortwave to frequencies that can be amplified by your broadcast set. If the frequencies already can be amplified by the set, the double version would serve no useful purpose. Certainly it would not amplify.

2. The volume on the 25-60 metre band is poor, whereas the broadcast set is good. Would it improve matters if I connected the aerial lead from the converter to some point other than the aerial terminal of the broadcast set?

A.: The aerial should be connected to the aerial terminal on the converter and the output terminal of the converter to the aerial of the set. Have you it connected in this way? We would advise you to get in touch with the dealer who sold you the converter. The volume should be quite good on the 20-65 metre band.

G5 (Nelson): My battery set has developed a persistent crackling, which sounds like weak static. It disappears completely when I push the jack plug into the four-valve point.

A.: There is a bad connection in the last stage of your set. Is the volume all that it used to be? Possibly the primary of the inter-valve transformer has broken down. Look over the last stage for loose connections; tug at the wires to make certain that all joints are sound. Go over the fifth valve jack, clean it from dust, and make certain that the contacts are good. Trace the wires from the speaker terminals to their destinations and see if they are good also.

A.B.C. (Wellington).—With a transformer 1½ x 1½ should the primary be 850 turns of 22 enamel, and the secondary 30-gauge enamel, 870 turns

A.: The primary is right, but the secondary will give approximately 200 volts. You should use a 280 rectifier, which will require a winding of 18-gauge d.c.c.