

# QUESTIONS AND ANSWERS

**M. W. (Papakura):** I have a six valve superbet, which is one year old. Soon after the new 1YA came on the air, I found it spread over the dial from 71 to 96 degrees (it usually comes in on 81). This happened for just one day and then the set separated 1, 2 and 3YA quite well. Two days ago, however, the fault cropped up again. The set is working perfectly in every other respect. What is wrong?

**A.** We believe that 1YA is now using appreciably greater power than it was several weeks ago and this would partly account for the spreading, though if your set has an r.f. stage it should be selective enough to confine the station within several degrees of the dial. A shorter aerial should cure the trouble, though if it does not, then evidently your set needs a little more shielding. Any qualified serviceman could attend to this for you.

**F. R. C. (Eltham):** My commercial set has developed a whistle on every station, from the low frequency end of the dial to the high frequency end. The whistle, which is weakest at the high frequency end, disappears when the receiver is accurately tuned to a station.

**A.** Evidently there is an open plate or screen by-pass condenser in your set, or an open screen bleeder resistor. This resistor in your set is one of 70,000 ohms, and is connected between the chassis and the junction between two other resistors in the line that feeds the screen grids of the three r.f. 224's. It may need replacing. The bleeder is shunted with a 1mfd. condenser, which also may be defective. Other condensers in the screen and plate circuits should be tested and replaced if necessary.

**"SKYSCRAPER" (Opunake) and P. M. (Westport):** Full constructional details of a very successful umbrella type aerial, as erected by a reader of the "N.Z. Radio Times," appeared in the issue of that magazine for September 10, 1934. The designer found that this aerial had a far better signal-to-noise ratio than an "L"

type aerial 200ft. long and 40ft. high. Back copies of this magazine can be obtained from Box 1680, Wellington, price 1/1d., posted.

**"ROOKIE" (Marton):** To convert your two-valve set to a short-wave you would need a tuning condenser of much smaller capacity than the one you have on hand. .0001 mfd. would be a suitable value. You could either purchase a new one or take out moving plates from the one you have at present until the capacity is reduced to this value. Your valves, audio transformer and several of the resistors and condensers could all be used for a shortwave set such as the "Tiny Tim," described in the 1934 "Radio Guide." An audio stage could be added quite easily.

**C. H. (Riverton):** Where could I obtain a circuit of a five or six-valve receiver using 201A's and 171A?

**A.:** This is such an old type of set that we think your best chance of obtaining a suitable circuit would be to consult a two or three-year-old Service Manual. Perhaps your best plan would be to use three r.f. stages with the first stage aperiodic, i.e., untuned. A three-gang condenser would be needed. By fitting grid suppressors of 600 or 700 ohms in value, it should not be necessary to use neutralising condensers.

**2. Where could I obtain a copy of the radio regulations?**

**A.** From the Te Aro Book Depot, Courtenay Place, Wellington.

**25 N. (Nelson):** Your only chance to extend the wave-band in your receiver would be to use a converter. We certainly do not advise you to interfere with the all-wave coil assembly in your set.

**J. W. (Gisborne):** The correct place to tap off the "B" supply for the "Air Ace Short-waver" would be from a tap about a quarter way down the bleeder resistor from A, i.e., from the rectifier filament or positive end of the resistor. This will give about 400 volts unsmoothed "B" or 250 volts smoothed. The position of the tap would be about the same if you use a single 523 in place of the pair of 80's you are now using. However, the most accurate way to set the tap would be to measure the "B" voltage on the output side of the filter and adjust the tap until the meter reads 250 volts. A 45 could be used in place of the 2A5, though in this case transformer coupling should be used to give the greatest "lift." If you intend to use a 47, then connect a 20 ohm wirewound resistor across the filament terminals, and from the centre tap connect a 400 ohm wirewound resistor, in parallel with a 2 mfd. or more fixed condenser, to earth. This is the only alteration necessary to make the replacement.

**153 M.C. (South Canterbury):** My set has two r.f. stages, a detector, and two audio stages, all type 30's. It distorts badly on very heavy signals. Would there be any improvement in quality if I fitted a power valve to the

last stage, and if so, would a type 33 be suitable?

**A.** It would not be advisable to use a pentode after two transformer coupled stages. A triode such as the type 31 would be much more suitable, and would give you better quality and volume. With a plate voltage of 135 this valve needs a negative bias of 22.5 volts.

**2. Would there be any advantage in changing over to power detection from grid leak detection?**

**A.** Not in your case, though if the detector is transformer coupled to the first audio stage, you could try power grid detection by substituting the present grid leak and condenser with much lower values, say .5 megohms and .0001 mfd. The maximum voltage should be applied to the plate of the detector valve in this case.

When winding your own coils from printed instructions, be careful to note the direction of winding, as if this is not indicated you may fail to get reaction.

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