

# QUESTIONS AND ANSWERS

**"DUO"** (Belmont): I have had a "det" and one audio" set which is not very efficient; would it be possible to convert the "Duodyne One" to an r.f., detector receiver, so as to use the audio end of my present set as audio amplifier?

**A.** Your suggestion is not practicable. It would be far better to add an extra audio stage to the "Duodyne One" as it stands at present. A high efficiency pentode such as the PM22A would be the most suitable valve to use. It should be resistance coupled to the second section of the 19.

**A. M.K.** (Wellington): I am planning to build the "Elfin Four" as described in the 1934 "Radio Guide," but I would like to substitute a 2A6 for the 55. On reading up the characteristics of the 2A6 I find that diode biasing of the triode unit is not suitable because of cut-off. Now I cannot determine whether the 55 in the circuit is diode biased. If it is, of course I cannot use the 2A6.

**A.** In diode biasing, the cathode of the duo-diode valve is connected directly to earth. The bias voltage for the audio section of the valve is actually provided by the signal, being greatest when the signal is strongest. Diode biasing can be used with the 2A6, in fact one of the most popular kit-sets marketed in Australia during the past year uses a diode-biased 2A6. However, in the "Elfin Four" the 55 is self-biased by the 2,500 ohm resistor in the cathode lead. If you are planning to use the 2A6 no changes are necessary, though the value of the self-biased resistor could be increased to 5,000 ohms.

**"TRIG"** (Auckland): I am planning to build the "Viking Shortwaver" described in the November, 1933 "Radio Times." I will be obtaining the power from the '47 output socket of my broadcasting set. Could I use this valve in the "Viking" in place of the 56?

**A.** Yes, quite easily.

**2.** What alterations would be necessary, particularly in regard to providing bias for the '47?

**A.** The only alteration would be to provide the correct bias for the '47. To do this connect a 20ohm wire-wound centre-tapped resistor across the filament terminals of the '47 socket. Between the centre-tap and earth connect a 450ohm wire-wound resistor, by-passed by a dry electrolytic condenser of 10 to 25mfd. capacity. Be sure to connect the red end of the dry electrolytic to the centre-tap of the 20ohm resistor, and not to earth.

**3.** What type of output transformer would I need?

**A.** The multi-ratio output transformer specified would be quite suitable.

**DX220A.** (North Auckland): I have a "Conqueror Superhet" (described in the 1934 "Radio Guide") and it has a peculiarity I would like you to explain. As the "A" battery becomes flat the stations at the low frequency end of the dial (2YA and 2CO) disappear, followed by stations of higher frequency until even 3YA cannot be brought in. The stations above the "cut-out" points come in splendidly.

**A.** The explanation is quite simple. As the "A" battery voltage becomes low, the filament voltage of the 1A6 is reduced, and the oscillator ceases to function—at the low frequency end of the dial first of all.

**Note.**—The Australian and New Zealand stations are very jammed over certain portions of the lower wave-band—often to such an extent that bad heterodyning interference is created. There is no satisfactory way of obtaining effective separation of stations such as these. The only solution to the trouble would be a re-allocation of wave-lengths.

**G. R.R.** (Masterton): I have a seven-valve a.c. superhet. I am contemplating moving to another street, where I

understand, the power lines cause a fair amount of interference to reception. How could I eliminate this noise?

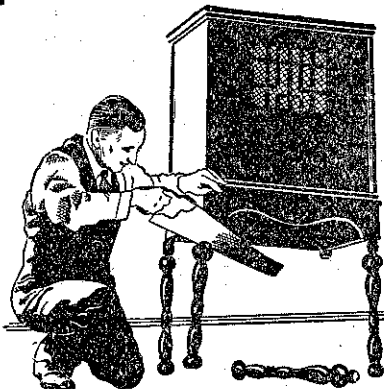
**A.** Only by erecting a special type of noise-reducing aerial such as that described in the November "Radio Times."

**R.F.C.** (Oamaru): I have built the "Tiny Tim" all-waver described in the 1934 "Radio Guide," and have decided to add two audio frequency stages to it. Is the enclosed circuit diagram correct?

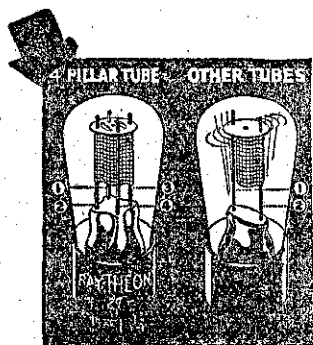
(Continued on page 45).

## YOU WOULDN'T SAW TWO LEGS OFF

You wouldn't saw two legs off your radio cabinet. It must have four supports to remain perfectly upright. But what about your radio valves . . . have they four supports to keep them steady—as in Raytheon 4-pillar tubes?



Raytheons are the only tubes with FOUR solid pillars to support their vital elements. And these four supports mean as much to their perfect balance as four legs to your radio cabinet. The rugged 4-pillar construction of Raytheons makes them impervious to the jolts and jars of transit and vibration from dynamic speakers . . . gives them longer life, and consistently surer, sweeter tone.



You can see the difference between Raytheons and other tubes in the diagram. But to appreciate the difference, try Raytheon 4-pillar tubes in your radio, and hear and enjoy their finer performance. They cost no more than other tubes.

# RAYTHEON

## 4-PILLAR RADIO TUBES

# S Tandard T elephones & C ables

Advertisement of Standard Telephones and Cables (A/sia.), Ltd. Inc. in N.S.W.

Head Office: Wellington G.P.O. Box 638. Auckland Box 1897.  
Christchurch Box 983.