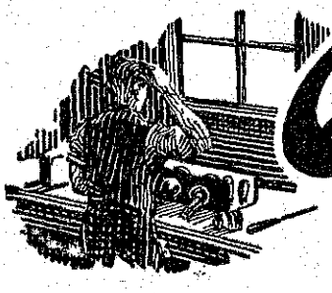

Questions and Answers

"BOB" (Otago): Would a water pipe 12ft. away from my set make a good earth? If not, what would?

A.: It depends how soon the water pipe itself goes to earth. If it does so almost immediately it would be quite efficient, otherwise why not try the Pierce earth system?

G. S. (Westport): When I switch on my set there is a sound in my loudspeaker which resembles a clock chiming. This fades out after about one minute.

A.: This is probably due to the spring mounting of your detector valve, which vibrates when a slight jar, such as that occasioned when the set is switched on, is communicated to it. There is nothing wrong.

J. A. (Christchurch): I have a five-valve American set, but find there is no provision for grid bias. Where do I connect this? The g.b. terminal on the transformer is connected to "A —".

A.: Break this connection and take it to "C—," connecting "C+" to "A—."

2. What alterations are necessary to use a power valve taking 135 volts "B" in the last stage? At present I am using 90 volts on both audios.

A.: Do not wire your audio stages separately as 135 volts is quite suitable for both. See, however, that you apply the correct grid bias to each stage.

"EXPERIMENTAL" (Oamaru): I have a variable condensed with 15 plates. What is its capacity and how many turns do I need on a valve base coil to match it, I wish to make the "Night Hawk Two."

A.: .00025 mfd. See the coil table published in a recent issue.

JOSEPH (Dunedin): I intend to construct the 1-valve shortwave receiver and would like to know if I could use a power valve?

A.: No, this would not be suitable. You require a valve of the A415 type.

2. Would an aerial 40 feet high at the far end, 20 feet high at the lead-in end and 60 feet long be suitable for shortwave reception?—Yes, but it would be better higher.

3. How should I construct the coil?

A.: You give no details whatever of the type of former you desire to use. See the "Radio Guide" for instructions on coil formation.

M. A. CRAVEN (Wellington): Would an L210 valve deliver as much volume as an H210 when used in the Differential One?

A.: No, the latter is more suitable.

KAYGEE (Wellington): Are the shortwave adapters I have seen advertised really efficient, and which one would be the best for my set? Is any technical knowledge necessary to fit one of these?

A.: The only commercial shortwave adapter we have tested is the "Addiphone," made by Mack's Radio, Kent Terrace, Wellington. It gives excellent results on shortwave, and technical knowledge is not necessary to operate it.

2. Can it be operated from the a.c. mains?

A.: Not satisfactorily. It is more usual to have batteries supplying the current to the two valves used by the adapter.

OSCAR (Marton Junction): I have two 171 valves of different makes in push-pull. When I turn the volume on fully a blue haze spreads over the interior of one of them. Is the valve defective?

A.: It seems that the valve is defective, though without saying how the volume is controlled we cannot offer much explanation. If it is controlled by varying any of the constants of the valve in question it can be interpretated in terms of electron emission and the gas in the valve. Quite probably it has not been thoroughly exhausted, but so long as it works there is nothing to worry about. Possibly the life may be shorter than another valve.

2. Why can I hear music when the speaker has been disconnected?

A.: That is due to one of the laminations in the transformer being loose. The signal in the winding of the transformer pulsates backwards and forwards as it does in the speaker winding, but whereas in the latter a diaphragm or armature is moved, in the former the loose lamination responds.

TYPO (Blenheim): Is my valve combination economical for both filament and plate voltages?—Yes.

2. My set will not oscillate on the 27 to 53 metres coil.

A.: This is probably a dead spot. Try the effect of a midget variable condenser in series with the aerial.

TERMINAL (Dunedin): I have built the detector of R. the W. Two, but I cannot get it to oscillate except when using the largest tuning coil.

A.: Apart from increasing the grid leak to 10 megs., trying another valve and increasing the battery voltage to 67½ we can suggest little, as R. the W. Two has given perfect satisfaction to hundreds of constructors. We do not think it necessary to add more turns to the tickler.

2. How many turns should be on a coil designed to bring in the 80 metres band?

A.: Using a .00015 condenser with a coil 3in. in diameter, the number of turns should be 20.

RAY DIO (Manawatu): Approximately what would be the range of a coil of 2¼ turns of 22 enamelled wire on a UX valve base?

A.: Probably 15/25 metres.

2. What would be the approximate range of a coil with 3¾ turns?

A.: About 20 to 35 metres.

SIMPLE (Petone): I have constructed the Daniells Cell "A" battery, but cannot get results.

A.: You should connect the set up to the charger and take a reading when it is on load. A set using such little "A" current as yours does, the battery should work quite well. We found it would deliver between a ½ and ¾ amp. without difficulty, and your set requires only ¼ amp. Are you sure you connected it round the right way—that is, the copper to the positive terminal? And we presume you connected your "B—" to "A—" as is usual with "A" batteries?

D. H.A. (Dunedin): I have a three-valve commercial receiver, but my reception on distant stations is not as good as it was a short time ago. Can you explain?

A.: If your batteries are quite in order it would seem that your aerial and earth require attention. The earth particularly becomes corroded and the lead wire makes a very poor contact. Examine your aerial insulators and be quite sure there is not a short circuit across them. It pays to let the aerial down occasionally and examine it.

2. On looking over the set I find the reaction control has two fixed terminals and one moving. Should the extra terminal be connected anywhere?

A.: No. It is on the same plate as the other fixed condenser. Two are provided merely for convenience.

3. The set breaks into oscillation when the volume control is turned down. Can this be avoided?

A.: If by the volume control you mean the filament rheostat it is impossible to control the oscillation unless you use the detector voltage. Each valve has an optimum filament temperature at which it works best. This may be even a volt less than the rated filament voltage, consequently your set will oscillate easier when the filament is at this temperature.

4. Will a pentode valve work more successfully than on ordinary valve that is only 90 volts?

A.: Yes, a pentode can be quite effective on 90 volts. but for general purposes we are inclined to favour the high-gain power valve.

5. Will a heavy aluminium screen be more substantial than the one provided?

A.: Yes, but it is not worth changing over.

6. What speaker would you advise for sensitivity tone?

A.: A well-known make of light cone.

7. I have some sal ammoniac. Can I use this for my accumulator?

A.: Most certainly not; if you put it anywhere near your accumulator it would ruin them.

R. D. (Pukekohe).—I have constructed a Daniel charger, but it is quite dead. I poured the acid solution into the porous pot, and put in a handful of bluestone.

A.: That is where you made the mistake. The bluestone does not go into the sulphuric acid, but with rain water and is used upon the outside of the porous pot with the copper. Only the sulphuric acid solution and the zinc are inside the porous pots.

M. A.X. (Waikato).—How is the circuit appearing on page 143 of the 1929-30 "Radio Listeners' Guide" neutralised?

A.: By the R7, which act as grid suppressors. Do not, however, contemplate building this receiver, as it is quite out of date.

2. I have a battery set which is very much the same. There is a fixed condenser between the detector plate and A—. Should this be connected between the plate and A—, which is earthed.

A.: Not necessarily. The function of the by-pass condenser is to convey audio current to earth, and the high-frequency resistance of the "A" battery can be ignored. As far as these currents are concerned, it is a dead short to earth.

3. Is the circuit I enclose correct, and could it be neutralised?

A.: It is correct as far as it goes, but it is fairly old-fashioned. Reflex circuits are quite out of date, and you would be better to use a modern three-valve receiver. It could be neutralised by the split primary method illustrated elsewhere or by a grid suppressor of 500 ohms.

4. What is the best type of crystal for reflex work?

A.: A carborundum would prove the best in the long run.

5. Is the advice regarding rejuvenating valves in the "Listeners' Guide" correct?

CORRESPONDENTS must attach this coupon to all queries sent to the Technical Editor (Box 1032, Wellington). Questions arriving without it are likely to go astray or be delayed.

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.

Solving trouble, as different from advice, is difficult by correspondence and while letters are given every consideration, answers are not necessarily correct—they are only our opinion based on the matter supplied, which may be quite inadequate. Intricate and involved specifications cannot be supplied without a specialist's fee.