



# Questions and Answers



## Double Grid Valves.

**"BEGINNER"** (Napier) asks if a double grid valve can be used in the audio stage of a two-valve Browning-Drake.

A.: It is not suitable for anything other than a single-valve receiver. This valve, although operating on very low plate voltage, and giving remarkable amplification, cannot handle loud signals.

2. Where can I get a circuit of the set?

A.: It has been published in the "Radio Listeners' Guide" as the 4-valve B-D. Omit the last two stages.

3. Would this set work an exponential horn with any satisfaction on the local station?

A.: It is very doubtful. In all probability you would need an audio stage. A double-grid valve of course could not be used. It would overload too readily.

4. Is the double-grid valve equal in volume, tone, etc., to an ordinary valve with 90 volts on the plate, and is its life as long?

A.: The volume would be approximately the same, but the tone would be thinned in the lower registers. The life is equal to that of any other valve.

## Can Phones be Used?

**QUITE** a few stations come in, not quite strongly enough for me to get the call-sign. Can I use head phones? The set is a 3-valve screen grid factory-built,—"T.T." (Dalefield).

A.: If it is an A.C. set, the ripple would probably be too strong for use with phones. It is doubtful to give any definite decision. Your best plan would be to borrow a pair of phones and try it out for yourself. You could not do any harm, providing the positive terminal of the phones is connected to the positive terminal of the set.

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## Remote Control.

**I USE** my loudspeaker 30 feet away from my set, and wish to switch off my set from this point. How can this be done? asks "H.M.D." (Palmerston North).

A.: Get a filament break jack and connect the A+ by means of a 30ft. wire to one of the filament springs, and take the other spring to the positive terminal of your set. Break all other connections between A+ and the set. Upon pulling out the plug the set will be cut off automatically. Keep the two wires close together and use the coarsest wire possible; 18 D.C.C. would be excellent; twin lightning flex would also be good.

## Round-the-World Two.

**I AM** building the Round-the-World Two and wish to know the following, asks "S.P." (Wellington).

1. Would a .00025 variable condenser do for a .0002?

A.: Yes, but it will alter your tuning slightly. It will be better if you can put a .001 condenser in series.

2. Which is the primary and which is the secondary coil?

A.: There is no primary; the set is one of the tapped secondary class.

3. Is the ampere necessary?

A.: If using five-volt valves.

4. Is the neutralisation condenser necessary?

A.: It would hardly have been put in if it were not. Its function is to sharpen tuning.

5. Would two-volt valves be suitable? —Yes, but 4, 5, and 6 are better.

## Reception Weakening.

**"L.H.S. (Kaikohe)."**—I have found that I can get no other station except Wellington, but that at very good strength. The agent has inspected the set and says that if we can get Wellington we must be able to get other stations, and that their weakness is due probably to atmospheric conditions.

A.: It is most difficult to advise you differently from a professional man who has seen your set. As you state the problem, it appears as if there is something wrong, probably the valves are weakening. We should advise you to have them tested. If they are in order, we should recommend that your set be overhauled by a competent service man. It is possible that a by-pass condenser has broken down.

## Shorting Valves.

**IS** there any danger of burning out valves should a short-circuit occur between the two flexible leads in the speaker? asks "Aerial" (Temuka).

A.: No.

2. Would a shield of thin zinc be sufficient to screen a frame aerial from the induction from a nearby power line?—No.

## Volt-Meter Reading from an Eliminator.

**P.J.W. (Dunedin)** asks if he should get a voltmeter reading between the negative and any of the positiveappings in the B eliminator.—Yes, providing the meter has a high enough resistance.

2. How can I get the correct voltage on the plate of the detector valve when using a B eliminator?

A.: You will have to use a very sensitive meter with a higher resistance (1000 ohms per volt). The negative terminal of the meter is connected with B— and the positive terminal to the plate of the detector socket.

3. How can I test the winding of an ordinary transformer.

A.: Connect B+ of the transformer to a + positive tapping of the eliminator and the negative of the meter to the negative of the eliminator. Touch the positive terminal of the meter to the "P" terminal of the transformer, and you should get a reading slightly smaller than that given from the positive to negative of the eliminator. To test the secondary, turn the transformer round and make the connections in the same way. The voltage drop under these conditions will be slightly greater than for the primary.

I have made up a 4-valve screen-grid receiver and can get nothing on the first three valves, and only a local station on the fourth.

A.: You need far more turns on the secondary coils, and it seems that there are other faults in your receiver which could only be checked up by an examination. Get an experienced man to go over your circuit with you.

## Short-wave Receiver.

**YOU** will find enclosed the circuit diagram of a short-wave set. Is it suitable, and can you give me all details for construction? writes "A.W." (Port Chalmers).

A.: This is a tall order and would take some time. We cannot undertake to give layouts. Build up "Round the World" Two, if necessary leaving off the audio valve. The problem of winding coils on valve base formers was dealt with in last year's "Radio Listeners' Guide."

## Overloading.

**HOW** can I prevent overloading? writes "J.K." (Upper Hutt).

A.: There are very many methods, other than removing the aerial. The best, no doubt, is to build a local station single-valve receiver, of the anode-bend type described by "Megohm" some time ago and connect this with the audio amplifier of the receiver. Crystal detector, likewise, can be coupled up with your amplifier, for the aerial terminal can be taken in to the grid terminal of any of the radio valves or detector. For those who dabble in construction, we should advise biasing the radio valves.

## Circuit Wanted.

**"ANXIOUS"** (Rongomai) asks for details of a 4-valve all-electric screen-grid short-wave receiver using valve base plug in coils.

A.: In the 1930 Listeners' Guide we are bringing out a set of this description using only three valves, which we think is quite adequate for all purposes. An extra audio stage could of course be added. The guide should be out in about three months, and until then we cannot give any details.

## Accumulator Problem.

**WHEN** my accumulator gets below 1200 it ceases to function. I charge it to 1250 or 1300, but it soon runs down. The plates are well covered with the liquid, states "R.E.H." (Kohu Kohu).

1. What would be the correct rate to charge the battery?

A.: Charge at about 3 amps. to 1250 or 1300 S.G. Do not let the battery get as low as 1200.

2. What would be the effect of a too high rate of charging?

A.: The plates will suffer, and shorten the life of the accumulator.

3. What would be the effect of charging after the reading is 1300?

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