valve performance, writes "E.T.D." (Petone). If so, will it be equal to an ordinary H.F. valve with 90 volts on the

A.: Use "A441" and results should be found to equal that of the ordinary valve of 90 volts on the plate for a one-valve

amplifier.
2. The set refuses to oscillate.

A.: Put more turns on the reaction

3. I am now using a short aerial. What difference will it make to the coils?-None. Interference from Generator.

"C.R." (Takaka) complains that his same number of stations.

A.: There are a number of factors to be considered. A 5-valve set using the AERIAL MASTS

place, if the connections other than the in push pull, or would I get better results filament are correct. Now reduce the by using semi-power valves in the last number of turns by, say, three, and note the result.

Double Grid Valves.

Double Grid Valves.

WILL a double grid valve be suitable to the crystal and valve with 3- 2. Do two power valves in p.p. take valve performance, writes "E.T.D." exactly twice as much plate current as (Petone). If so will it he could to an or one?

A.: Yes, unless they are double biased, in which case they take the amount of

S.G. Browning-Drake.

"SELECTIVITY" (Kelburn) has constructed a 5-valve screen grid Browning-Drake, but cannot neutralise it correctly. He states that the set is not shielded, and complains that selectivity is poor. He adds that a good number of stations were logged while the valves were new, but now he has noticed a background of noise, and cannot get the same number of stations.

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ass receiver. He asks how this may be screen grid and reaction should be shield-ed, otherwise it is a hopeless task trying

A.: Connect in series with the leads to the lighting system H.F. chokes comprising three or four hundred turns of 22 gauge wire. Try the effect of a little caustic soda on the commutator.

#### Short-Wave Adaptor.

CAN an A.C. short-wave adaptor be applied to a 7-valve all-electric receiver, writes "A.A" (Avondale).

A.: At this stage of radio evolution A.C. short-wave adaptors have not come into general being. For the best results it will be necessary to use D.C. Such a D.C. adaptor could quite well be used with an A.C. set.

#### Shortwave Problems.

"H. W.Y." (Herekino), asks the follow-

1. Is it normal for both rheostats to work only when just open? Past this point a strong howl sets up.

A.: No, there is too much reaction. Remove a little wire from the tickler coil.

2. Why is it necessary, to keep the set oscill, and, to have sometimes to reduce the coupling between the aerial and secondary coils

A.: This is done to reduce the damping of the aerial, ,which varies frequently.

3. I connected a fixed condenser to a choke and incorporated this in the set, but found it would not oscillate.

A.: This was probably in parallel with the existing condenser, so that a very large capacity was introduced rendering regeneration impossible.

4. With both variable condensers all in I can turn the reaction coil full out and the only sound heard is the steady rushing sound.? Is this normal?

A.: It appears as if in this position, the fixed vanes are touching the moving vanes, also try another grid leak.
Your other problems are being dealt with by the technician who designed the

#### Supply of a "B" Eliminator.

WOULD a Phillips "B" and "C" elimicharged while the nator supply enough current to run a screen grid two 201's and two 171A's might be effected.

to make the set selective or neutralise it to make the set selective or neutraise it. Introduce 1 mfd. by-pass condenser between B positive R.F. and earth. The shield grid valve is notoriously unselective, but a wave-trap should rectify this. The valves appear to have lost their emission; have them tested. This would account for the noise. The correspondent asks if the parallel feed B.D. would be more selective than the screen gird. It would if properly constructed. would if properly constructed.

The correspondent has appended a dia-

gram with the following questions:

1: Are the coils standing at right-angles for the B.D.?

A.: Yes, though the diagram shows them arranged the neutrodyne style.

Are the valves in the right relative

positions?

A.: No, it appears that the lay-out is altogether wrong. Follow the lay-out for the 2 R.F. Browning-Drake published in the "Listeners' Guide."

3.: Is the tickler controlled by a con-denser correct? So far as we can see— Yes.

#### Booster for the Browning-Drake.

I HAVE tried loose coupling for the A aerial coil of the Browning-Drake without success, writes "J.S.K." (Ngaio). Signal strength is reduced too much. Would the parallel feed boster be better?

#### Charging an "A" Battery.

CAN a 6-volt 80 to 100 amp-hours battery be charged from a 32 volt storage battery? asks "B.S." (Market (Market

Cross).

A.: A very heavy resistance would be A.: A very neavy resistance would be necessary, involving a very big waste of current. Approximately 26 volts at 5 amps., if this were the charging rate, or 130 watts would have to be dissipated by the resistance. A resistance of these dimensions would be very difficult to obtain. In any case, the arrangement would the 32 volt storage battery were greater than 100 amp-hours. If it were being charged while the "A" battery were being charged a workable compromise

2. Could an eliminator be made to provide 180 volts at 40 to 50 milliamps from the 32 volt battery?

A.: No, for this reason. Voltage can be stepped up only by means of a step up transformer. The principle of this is that if two coils are connected by their induced current momentarily opposes to

# RADIO DIRECTORY

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