IT is regretted that a large number of Questions and Answers have to be held over until next week. This is unavoidable owing to the fact that the technical staff was engaged in exhibition duties during the week.

Sensitivity of the Linen Diaphragm Speaker.

WOULD the linen diaphragm speaker given the same volume as my horn speaker, or does it need more power to work it? asks "G.F." (Dunedin).

A.: While this speaker is very sensitive, it cannot equal the sensitivity of a small horn such as "G.F." is using. Almost invariably a delicately-constructed horn speaker is more sensitive than a cone, but the latter makes up both in tone and in the amount of volume it can handle.

2. How does the speaker described May 3, 1929, compare with the linen diaphragm speaker as regards tone and volume?

A.: There is very little difference. Both can reproduce a very wide frequency range at great volume.

"Pentode's" M.C. Speaker.

I have made this speaker, writes "J.B." (Christchurch), and the results are splendid as regards tone and volume, but the field winding takes 1½ amps. at 6 volts. I have tried running this from a 2-amp. charger, but only a hum can be heard, and an ammeter connected in series shows no movement.

A.: Although the current from the charger is direct, it has a strong ripple owing to the fact that filter devices are not used with battery chargers. This can be regarded as A.C., and the field of the magnet is acting as a choke coil which will not pass A.C. Insert an electrolytic condenser across the field terminals.

Unit For Linen Diaphragm.

IS it possible to use an ordinary speaker unit in conjunction with this type of speaker? asks "N.E.H." (Auckland).

A.: Yes, providing it is of the balanced armature type, that is, the type used for cone and not for horn speakers.

Alternative Construction to L.D. Speaker.

WOULD the alternative construction be as good, or better, than that supplied in detail? writes "A.S." (Martinborough).

A.: It is not as good as the straight-out construction, and for this reason full details were omitted.

2. Would it do to have a spring to balance the pull on both sides of a double diaphragm speaker?

A.: This would be all right, but there is a possibility of resonance effects due to the spring. It would be worth trying.

Attaching the Unit to the L.D. Speaker.

HOW would I attach the driving rod of the balanced armature unit to the coupling bolt? asks "H.G.C." (Seatoun).

A.: Tap the rod and use two washers and two nuts, or stick it with glue or secotine.

2.: Will it operate directly from a crystal set without amplification?

A.: It is most unlikely.

Points Regarding the L.D. Speaker.

"F.R.G." (Tokomaru) asks:—

1. The address of a Wellington firm where the units are procurable.

A.: Smythe and Co., Victoria Street.

2. Will Copal brand varnish be suitable to paint the diaphragm?

A.: No, use the preparation specified.

3.: Is the hole to allow the driving rod to pass through to be the exact size or slightly larger?—Slightly larger.

Adapting the M.C. Speaker.

"W.P." (Dunedin), in stating that "Pentode's" dynamic cone speaker has "exceeded his rosiest expectations," mentions that the drain on the accumulator is rather heavy. He wishes to rewind the field magnet in order to adapt this to A.C.

A.: An A.C. dynamic cone speaker implies the use of alternating current rectified and smoothed to the field windings. The effect of A.C. on these windings has been explained in the reply to "T.B." (Christchurch). To operate the dynamic cone speaker directly from the mains, a rectifier and a filter system must be constructed. This would comprise a transformer to step the voltage down to about 12 volts, a rectifier to pass sufficient current, a choke and condensers to filter the output. This would then be broken down to 6 volts by a resistance and applied to the windings such as described by "Pentode."

2. Would a crystal and three-valve R.C. amplifier give full volume on the M.C. speaker??

A.: It would probably give reasonably good results close to the local station, but the result could not be compared with that of a well-constructed transformer coupled amplifier preferably using power valves in push-pull.

3. If the reaction condenser dial is turned to "0," I can remove the grid leak without affecting results. Is there anything wrong?

A.: It appears that the grid condenser has broken down.

4. I have 22 volts grid bias applied to two 256's in push-pull in the final stage. Is this correct?—Yes.

"J.A." (Auckland) asks the same question, and his question is consequently answered by the above. A 25 to 1 step-down transformer will still be necessary.

Oscillation Trouble.

I HAVE a 3-valve set made from a popular kit, writes "J.S." (Dunedin), and the set seemed to stop oscillating all at once, so I disconnected the lead from the negative side of the "C" battery and connected it to the transformer, thus cutting out the grid bias on the power valve. The set will now oscillate, but I can only get the local station.

A.: Test transformers, chokes and condensers by the 'phones and cell method, though it would seem that the trouble is in one of the valves. A nearby dealer would test these for you. By employing the final valve without bias, the tone of the set is being spoiled. This is a most unsatisfactory compromise.

2. The spindle of my loudspeaker has broken. Where could I purchase another?

A.: Write the technical department, Philips Lamps, N.Z., Ltd., Hope Gibbons Buildings, Wellington.

The Tetrode Amplifier.

"J.C." (Blenheim) has constructed the amplifier described by "Galena," which uses the tetrode valve. He has had very good results, including 1, 2, and 3YA. He asks if it is possible