"MAXFLI" (Invercargill) asks what stations other than New Zealand and Australian can be expected with a powerful all-electric set?

A.: Japanese, after about 9 p.m., and the Americans in the early evening between 5 and 8.

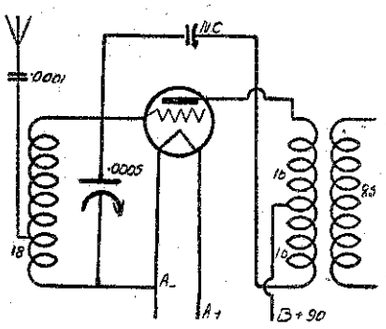
"NEUTRON" (Christchurch) asks the date of the crystal and valve to work from the A.C. mains.—November 16, 1928.

2: Would you give me the address of "Keen" (Eastbourne)?

A.: We could not undertake to do this, but if "Keen" likes to write us and express his willingness we shall forward it to you.

"K. T." (Hawke's Bay) asks if the Loftin White can be made with a "B" eliminator and an "A" accumulator?

A.: No, the Loftin White has been designed for the 245 or 250 valve and




**The split-primary method of neutralisation referred to on previous page.**

the A.C. screen-grid. If you like to experiment, you might possibly evolve a circuit.

"B. L.M." (Hawera) has a well-known kit set and wishes to add two more valves.

A.: They would have to be radio frequency screen-grid valves, and this would involve a wide knowledge of radio construction. We do not advise any amateur to undertake a task such as this.

"W. E.B." (Auckland) asks the following questions concerning power-pack construction:—

1: Do more turns have to be put on the secondary than on the primary if high voltage is required?

A.: Yes, the voltage is developed by the secondary if directly proportional to the number of turns.

2: I require only 180 volts, but I wish to provide for 500. Will I be using any more current than if I wound for 180 only?

A.: No. The remainder of the secondary, unless connected with a load or short-circuited, would not draw any current.

3: When the power-pack is made I shall have to get new valves. Can you recommend better ones than A415, A409, and B403?

A.: No, these valves will take the maximum 150. You could, of course, use a 245 in the last stage with a 250 volts on the plate, but this would not be warranted with a three-valve set. Unless you propose to use a power amplifier there is no point in providing for 500 volts.

4. Why cannot the current from the winding of the filament transformer be rectified and used on ordinary battery valves?

A.: It can, but extra turns must be wound on to allow for the drop in the rectifier. For the number of turns see the details of the "A" battery charger described in the 1930 Radio Listeners' Guide. You would, of course, have to provide a large capacity smoothing condenser and a choke.

5. Will an electrolytic rectifier work instead of a valve rectifier?

A.: Yes, it is satisfactory, but messy.

6. Will there be need for a separate rectifier for each voltage taken from the transformer?

A.: If you intend to take filament current there will be need for two rectifiers, one for the high voltage and one for the low, on the high voltage side only. After rectification the voltage can be broken down by means of resistances.

7. Is a commercial filter necessary or can a circuit of chokes and condensers be used?

A.: A circuit of chokes and condensers is a filter.

"J. C." (Hastings) has made up the amplifier described in "All About the All-electric, and is meeting with the following difficulties:—

1. A lack of volume, even when used with a pick-up. Signals distorted as though choked.

A.: It seems as though some mistake has been made or the valves are unbalanced. It is essential in making an amplifier such as this that the emission of the valves be exactly the same. You should have them tested and matched. There may possibly be a defect in the grid circuit: a short circuit or a wire in the wrong place. The resistors may not be able to carry the current.

2. Music and volume is equal to an ordinary amplifier when using only one valve in push-pull.

A.: This indicated that the valves are not balanced, or are wrongly biased.

3. I tried 100,000 ohms resistance in series with the grid leaks and this cleared up the music slightly.

A.: This is really only a compromise for instability and not a cure.

4. Is the 409 output transformer suitable for both speakers mentioned?

A.: Yes, but there must be a further matching transformer in the speakers themselves.

5. Is a 230-volt lamp in series with the field of a D.C. speaker necessary?

A.: Most of this type of speaker is designed to work on 100 to 200 volts D.C., so if you are using D.C. mains of 230 volts a variable resistance of 1000 ohms will be needed.

6. Can the new Loftin White amplifier be used with 230 volts D.C.?

A.: No, but the principle can be applied. Experiment would be necessary.

## Loftin White Performance

THOSE who are contemplating the construction of the Loftin White amplifier will be interested to learn that the laboratory model tuned with a condenser and an inductance coil covered the whole range of frequencies broadcast during the test from 2YA. A Dynamic speaker, that described by "Pentode," was used.



## Broadcstiang News

THE complete front page of an American newspaper was recently radioed across the Atlantic. The transmission, which was picked up by the steamer Stem near Plymouth, England, was accomplished by means of the American Radio Corporation's new photoradio apparatus. Both pictures and type were almost indistinguishable from the original.

THE growth of radio in America has been phenomenal. In 1920 there were only 60,000 listeners, whereas at present there are more than 50,000,000.

TEN "noiseproof" doors are a feature of the new studios recently completed for station WLW, Cincinnati, America. They weigh more than 800 lb. each, and were installed at a total cost of £9000!

THE youngest radio announcer in the United States, and probably in the world, is Paul Keough, of station WJSV, Virginia. He is only 19 years old.

A PARIS dentist advertises: "Painless extraction of teeth by an expert. Comfortable waiting-room equipped with an up-to-date radio receiver."

THE date of the formal opening of the new Vatican City shortwave wireless station has been tentatively fixed for June 29. It is stated that in the course of the ceremony the Pope will broadcast a message to the world

## Slightly Confusing

IN a last issue a reply to a correspondent stated that the positive of Daniel's cell charger should be connected to the negative of the accumulator. A diagram showed + to + and — to —. The diagram was correct, the words in the text accidentally being misplaced.