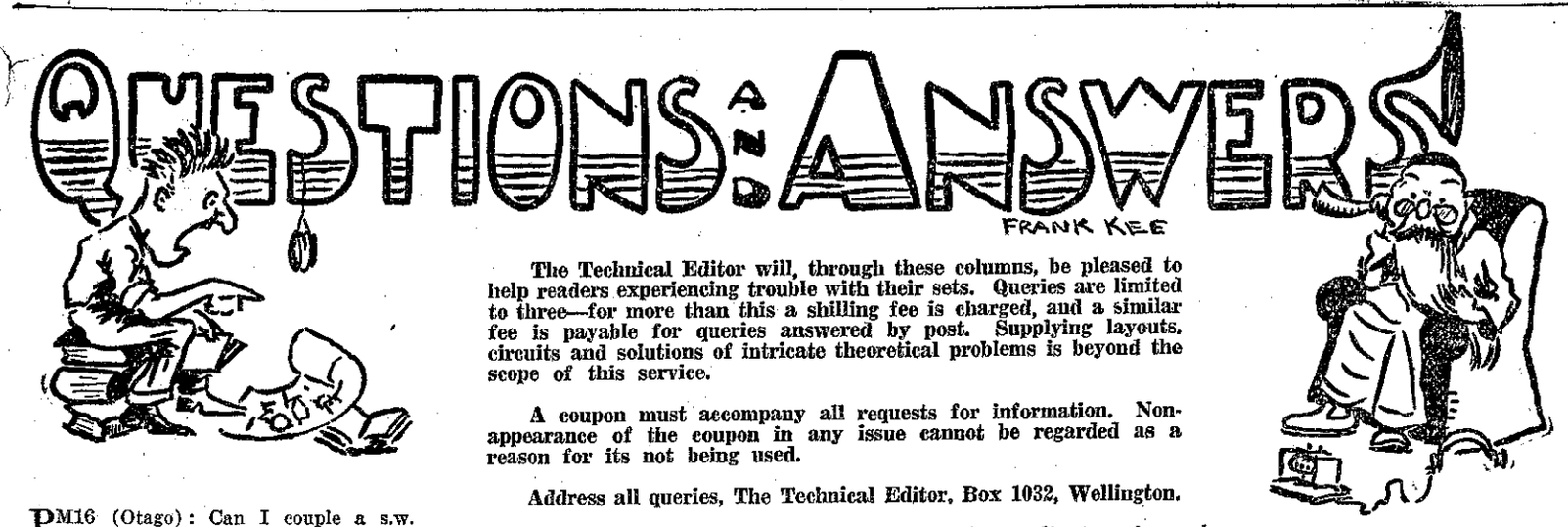

The Technical Editor will, through these columns, be pleased to help readers experiencing trouble with their sets. Queries are limited to three—for more than this a shilling fee is charged, and a similar fee is payable for queries answered by post. Supplying layouts, circuits and solutions of intricate theoretical problems is beyond the scope of this service.

A coupon must accompany all requests for information. Non-appearance of the coupon in any issue cannot be regarded as a reason for its not being used.

Address all queries, The Technical Editor, Box 1032, Wellington.

PM16 (Otago): Can I couple a s.w. oscillator direct to the screen-grid of the first detector in a super het.? It works best this way.

A.: It is quite satisfactory to make this connection, although it is somewhat unusual. Generally a super het. will work best when coupled with the grid and grid return of the intermediate stages.

2. Which is the best coupling? I have tried out a dozen different methods.

A.: Generally the inductive method.

3. Why have some oscillators condensers and leaks in the grid circuit?

A.: Almost any kind of oscillator circuit may be used for the super heterodyne. Some employ a tuned plate having a tuning condenser across the plate coil instead of across the grid coil. Most have tuning condensers across both coils. In all oscillator circuits it is necessary to use either the tuning condenser or separate fixed condensers as blocking condensers so that the direct high voltage for the plate circuit cannot reach the grid circuit which is connected to the filament of the value. Some super heterodyne receivers do away with the separate oscillator entirely making the first detector do the frequency changing.

4. Is not 30 k.c. too low a frequency for a shortwave super-het.?

A.: 30 k.c. is considered to be the lowest frequency at which super-hets. will work satisfactorily.

5. Could you publish an article on oscillator design?

A.: We find it advisable to give super-hets. a fairly wide berth as when they are made by amateur constructors the sets almost invariably fall foul of the Post and Telegraph Department. We have already been brought to book on this account.

6. Are there many modulated c.w. stations on the air?—Yes.

Information Coupon

(To be used with all requests for information.)

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.

7. Would a super-het. pick up c.w.?—Yes.

HOOK-UP (Matamata): In which positions in a super het. are the variable-mu valves most suitable—the r.f. or the i.f. stages?—The r.f. stages.

2. The set I purpose building calls for a variable resistance to control the s.g. voltage on the detector. If I use a multi-mu valve would I be able to eliminate this control?

A.: It would be better to use a 224 as detector, and control the voltage as shown in your diagram.

3. Would a 500,000 ohms. tone control be suitable for controlling the variable bias of the multi-mu valves?—Yes.

4. Is 14/36 twin flex suitable for wiring a.c. filament?—Yes.

5. Which end of an "L" type aerial should point to the station desired?

A.: The directional properties of the ordinary aerial are not strong. Generally it is considered that the lead-in should be at the set end and the free end pointing toward the station.

6. Can you give me the specifications for a power transformer developing 330 volts on each side of a centre tap at 130 mamps with heater voltages of 2.5 at 16 amps and 2.5 volts at 3.5 amps, and 5 volts at 2 amps?

A.: 100 watts transformer will just serve the purpose. You will need a primary of 1140 turns of 24 gauge enamelled wire, a secondary with 1930 turns on either side of the centre tap, using 32 gauge wire. You will require five separate 2.5 windings consisting of number 16 gauge d.c.c. wire, and, for the 5-volt winding, you will require 30 turns of number 18 gauge. You will find more particulars about this transformer in the 1931 "Radio Guide."

DX (Dunedin): Is there any method of adding a third audio stage to my present set without causing instability?

A.: Three transformer stages are impracticable. If you must use three stages we would recommend r.c.c. method of coupling, but then the three valves will do no more than the work of two valves used in transformer coupling. You could add another valve by turning the last stage into push-pull. It is impracticable to try to work the three audio stages by employing more by-pass condensers, etc.

2. Does increasing the air gap in an a.f. choke increase efficiency?

A.: There is an optimum gap for every choke, and if you do not happen to have it right, increasing or decreasing it, as the case may be, may enable you to stumble across the optimum dimension. We were interested to hear about your aerial and your letter has been passed on to the DX editor.

POWER PACK (Oamaru): Where could I obtain a circuit and specifications of a good powerful a.c. set using pentode valves?

A.: You do not state if you want t.r.f. or superhet. In the near future we shall