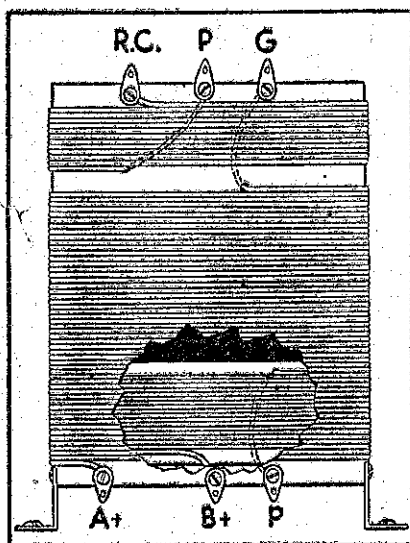


Theoretical Diagram.

"Outspan Five"

(Continued from page 17.)

need to drill right through, just pierce the aluminium and screw them to the underlying timber. The positions of the condensers, the choke, switch and the jack can be seen from the photograph depicting the underneath wiring. Place these in position and screw them to the threeply with 4in. screws. Everything should now be in position



Regeneration Coil.

R.C.—Regeneration condenser and choke.
P.—Detector plate and regeneration condenser.

ready for wiring. At the points indicated by numbers in photograph 4, drill right through the sub-panel and bottom to allow the wiring to pass through without touching.

Wiring the Set.

A POINT to point wiring description will not be given because it would be more confusing than helpful. Photograph 4 and the table that accompanies it will give a clear indication where every wire is to go, while photograph number 3 shows where the wires on top of the set go. Remember, if English valves are used, the description as we have given holds. If American valves are used, the bottom end of the primary connects with P of the first and second valve respectively, G of the valve sockets is the auxiliary grid and the point on top connects with the fixed plates of the first and secondary condensers respectively.

Operation.

THE operation of this set is really very simple. There is no neutralisation, and it should be found to oscillate without any difficulty. Do not keep it in the oscillating stage, as there is a possibility of causing interference. Apart from this, it quite spoils the programme being received. The plate voltages should be as high as possible. The power valve it will be seen is connected with the plates of all valves except the detector. This is in accordance with modern practice, and it will be found to give good results. The voltage on the detector valve will depend upon the capacity of the differential condenser and upon the number of turns on the reaction coil. The screen voltage should be half that of the plate—usually 60-75. Our coil has been designed for a .002 differential condenser. If a smaller one is used more turns must be added to the coil. If however, there is difficulty with oscillation a .0001 condenser shunted across the differential condenser should make the set oscillate readily. If the set is unstable, small shields about 5in. x 5in. should be erected between the three condensers. That means, of course, that there will

be two shields. A fairly large can shield should be used over the coils, and if oscillation is very bad the valves can be shielded by cocoa tins. This was not found necessary in our experimental model, although we had to resort to the shields between the condensers.

We were more than pleased with the results that this set gave us. In its initial try-out we were able to bring in without any difficulty all the main New Zealand and Australian stations. We had to reduce volume considerably on the main Australian stations after about 9 p.m., whilst in the early hours of one morning we had three Japanese at really tremendous strength and an American at very good strength. We have not had time yet to fully explore the possibilities of the circuit.

We believe that if it is carefully constructed it will be by far the most powerful battery set that has been described.

Its simplicity is one of the strongest features in its favour. A glance at the photographs will assure the reader that there is really nothing that will give him any anxiety. Above the baseboard there is very little wiring, while underneath the wires are direct and not in any way confusing. Our system of numbering the holes and providing a key should meet with the approval of constructors.

We strongly advise that only the best parts be used in this receiver. By the best we do not mean elaborate, expensive components. Our set was built of almost entirely English parts and was perfectly satisfactory.

Converting Old Brownings-Drakes.

IN converting old Brownings-Drakes it will generally be necessary to redesign the set and lay it out as we have indicated. Slight adaptations will have to be made in order to use the swinging coil method of regeneration. The detector coil will have to be shifted slightly to the left in order to accommodate the tickler knob. Smaller dials than are shown in the diagram will

have to be used and the knob placed between the second and third. Apart from this adaptation the parts used in the old Browning-Drake will be quite satisfactory.

If selectivity is not quite what is desired, try a .0003 fixed condenser in series with the aerial. By using this we were able to separate 2BL and 4YA from the local station. On 4QG and 2FO there was a fairly strong background.

We hope at a later date to bring out the A.C. version of this set.

Australian Programmes

Thursday, February 19.

STATION 2FC: 10 p.m., "King for a Day," a three-act radio play. 11.7 p.m. and 11.41 p.m. Jack Lamadine, the Radio Rascal. 11.27 and 11.57 p.m., Queenie and David Kalli, Hawaiian entertainers.

2BL: 10 p.m., concert programme arranged by the Musical Association of New South Wales.

Friday, February 20.

STATION 2FC: 10 p.m., a special musical production has been arranged.

2BL: 10.14 p.m. and 11.15 p.m., the French brothers, entertainers. 10.42 p.m., Vincent Aspey, violinist.

Saturday, February 21.

STATION 2FC: 10 p.m., relay of entertainment by Hospital Concert Party at the Bodington Red Cross Home, Wentworth Falls.

2BL: 10.7 p.m. and 11.43 p.m., Myra O'Neill, soprano. 11.30 p.m. and 12.7 p.m., the French brothers, entertainers. 10.30 p.m., description of boxing contest at Sydney Stadium.

3FO: 10 p.m., orchestral concert by the A.B.C. Wireless Symphony Orchestra and assisting artists.

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List of Components for the "Outspan Five"

Ebonite Panel, 21in. x 7in.
Aluminium Base, 20in. x 10in.
3 .00035 Variable Condensers.
1 Differential Condenser (up to .0002).
5 UX Valve Bases.
1 30-ohms Rheostat.
1 .00025 Grid Condenser.
2-megohms Grid-leak.
2 Inter-valve Transformers, 3:1 ratio.
3 Special Coils or a foot of 2in. tubing and 6in. of 1 1/2in. tubing.
3 Shield Cans.
1 lb. of 24 d.s.c. Wire.
1 dozen Terminals.
8 Dials.

Switch.
2 1-mfd. Blocking Condenser, rated at 500 volts.
1 .001 Blocking Condenser, rated at 500 volts.
1 2mfd. Blocking Condenser, rated at 500 volts.
1 Radio Frequency Choke.
One Single Jack.
Two Angle Brackets.
1 lb. 32 or 34 d.s.c. Wire.
Sheet of Three-ply the same size as the base, and enough three-ply to form a base for the set, as the diagram.
1 dozen Solder Lugs; 1 dozen Nuts and Bolts; Wood Screws, etc.