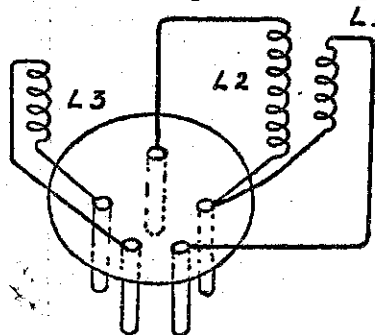


rather too long for shortwave work and a series aerial condenser is the easiest way of reducing this; secondly, "dead spots," which are due to too tight a coupling between the aerial and secondary coil, may often be overcome by varying this midget condenser. The next refinement is a 400 ohms baseboard mounting potentiometer, which is placed across the filament of the detector valve, thus enabling the grid to be made more or less positive with respect

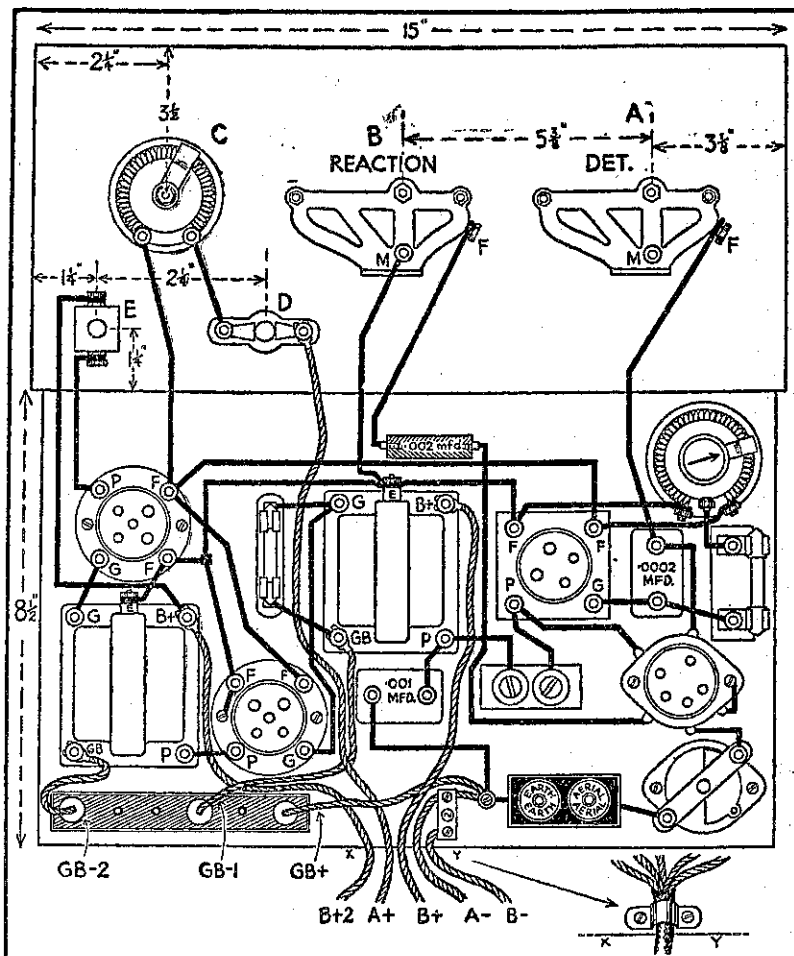


Showing the connections of the three coil windings to the valve base.

to the filament as desired. By correctly adjusting this, very smooth control of reaction is obtained—a very important factor in shortwave listening.

Two further refinements are the .001 mfd. de-coupling fixed condenser placed between the plate terminal of the first audio transformer and earth, and the .25 megs. resistance across the secondary of the same transformer. By their inclusion the objectionable "fringe" or "threshold" howl often encountered in tuning is overcome. The resistance should not be lower than the value stated, or otherwise the volume will be appreciably reduced. Incidentally, it may be found that this resistance is not required.

If you have a couple of spare leads in your battery cable, do not be tempted to place the grid-bias battery with the others, outside the set. Instability will almost undoubtedly result. Always keep the grid-leads short by placing the battery within the set. Another point which may appear inexplicable is the inclusion of a .002 fixed condenser in series with the reaction condenser. This is purely a safety measure, for otherwise, if the vanes of the reaction condenser are accidentally shorted, a new set of wires will be needed. While on the subject of reaction condensers, we might men-



The layout diagram of the "Night-owl Three."

tion that if the constructor so desires, a differential reaction condenser may be incorporated in this receiver. The two sets of fixed vanes are connected one to each side of the reaction coil and the moving vanes are earthed.

A point to notice in the layout sketch is that while the moving vanes of the reaction condenser are earthed, those of the tuning condenser apparently are not. This is not so, however, for these vanes are earthed via the aluminium sheet backing the front panel, which is itself earthed through the moving vanes of the reaction condenser.

Wiring the Receiver.

WHEN all the baseboard components are mounted, the wiring may be

commenced. No difficulty whatsoever should be experienced with this, as both layout and theoretical diagrams are given. Constructors are advised to wire always from the theoretical diagram rather than from the layout, for the latter is given more to show the disposition of components than the actual wiring, and mistakes are liable to creep in. At first the theoretical diagram may seem hard to follow, but

dentally, if you ever come across a discrepancy between the theoretical and layout diagram, always follow the theoretical.

The Coils.

FOR the convenience of those who constructed our "Differential" series of receivers and who might desire to build the "Night-owl Three," we have provided for the use in the latter receiver of the "Differential" short-wave type coils. These are wound

Coil Specifications

Designed to work with the specified values of reaction and tuning condensers. Wire, secondary, 26-28 d.s.c.; reaction and primary, 30-32 d.s.c.

	L1	L2	L3
	(primary)	(secondary)	(reaction)
Metres			
60-100	6	25	10
30-60	3	12	8
15-30	2	5	5
8-15	1	3	4

if you stick to it and puzzle things out for yourself you will be surprised to see how easy it really is. Incidentally, on a five-pin American type 224 valve base.

The following is the procedure in making up one of these coils: First of all work the socket loose from the glass bulb of the valve by twisting it backward and forward until it comes out. Then apply a soldering iron to each of the five pins to open the ends. Next identify the five pins by comparison with the valve holder or with the diagram reproduced on this page, and with a sharp steel point scratch on the valve base opposite each pin F+, F-, P, G, and C, as the case may be.

Now commence with the reaction winding at the bottom of the base. The wire should be threaded through the correct pin and taken to a hole drilled in a suitable place in the side of the valve base. The correct number of turns is then wound on and the

(Concluded on page 30.)

THE "NIGHT OWL THREE"

Use British Parts

Panel, ebonite, 16 x 7.....	5/-	Allwave R.F. Choke, Telsen	3/-
Panel Shield, 16 x 8, aluminium	2/6	2 Audio Transformers, Telsen 3-1	8/- each
Baseboard, 16 x 6	1/-	1 X UY Socket, W.B.	1/3
Base Shield, aluminium, 16 x 8	2/9	3 X UX Sockets, W.B.	1/3 ea.
Formo, double spaced .00015 ..	6/-	Our special Plug-in Coils....	3/- ea.
Reaction Condenser Formo, .00025	6/-	1 X Ormond Push Pull Switch	2/-
Aerial Series Condenser, Igranite	5/-	1 X Igranite Insulated Jack	2/-
Grid Condenser, .0001 T.O.C....	1/6	1 X Grid Leak, Mount Wearite. 8d.	
Grid Leak, 8meg.	1/6	2 Ormond Large Dials	6/6 ea.
Reaction Safety Condenser, .001		1 X Wearite 500hm Rheostat	2/6
Standard	1/-	1 X 1meg. Leak and Holder ..	2/2
		Glazite, Screws, etc.	2/-

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