

that the reaction winding L3 should be omitted, both on the broadcast coil and on the short-wave coils.

Constructors will have noticed that the aerial coil L1 on the old coils is not used now that the high-frequency stage is in service. This winding may be removed from the coils if desired, although it will do no particular harm if left on. Another point which will doubtless be observed is that it would have been possible to use four-prong coil formers and sockets instead of the five-prong type. It has been thought wise to retain the five-prong coils, however, so as to avoid any possibility of the coils being inserted in the sockets intended for the valves or vice versa.

Doing the Job.

THE addition of the high-frequency stage will take but a short time. The first step is to remove the existing leads from aerial and earth terminals to the coil socket. Do not interfere, however, with the lead from the frame of the tuning condenser to the coil socket.

The metal screen may then be screwed down to the baseboard, a flange being bent at the bottom for this purpose. It is as well to drill a couple of holes through the screen before it is mounted, one low down for the filament lead to the h.f. valve-holder, the other fairly high up so as to come as near as possible to the cap (i.e., the plate connection) on the screen-grid valve. If these holes can be fitted with insulated bushings so much the better; otherwise the leads may be protected by insulating sleeving.

The high-frequency choke may now be mounted in the position shown. One end is connected to the B+ terminal to which other connections are already made; the other end is fitted with two leads, one a piece of flex terminating in a tag or clip for connection to the plate of the screen-grid valve, the other a stiff connection to one terminal of the 0.001 fixed condenser C3, the other terminal of which is connected to the G terminal of the existing coil socket as shown in Fig. 2. This fixed condenser is supported solely by its wiring, which must thus be fairly stiff.

The remaining components must now be mounted and wired up in accordance with fig. 2. The lead from the P terminal of the valveholder (really the connection to the screening-grid now) is passed under the baseboard to the second B+ terminal (i.e., the one which has remained unused up to the present), the voltage to be applied to this terminal should be that recommended by the makers of the S.G.

valve for the screening-grid; usually about 60 volts.

The lead from the A— terminal should make good contact with the shield. From there it continues to the "earth" terminal, from which one lead goes to the new coil socket and tuning condenser, and another lead,

MATERIAL LIST.

- 1 Aluminium or Copper Screen, 6in. x 10in.
- 1 Fixed Condenser, .0001 mfd. (C2).
- 1 Fixed Condenser, .001 mfd. (C3).
- 1 High-frequency Choke.
- 1 Valveholder.
- 1 5-prong Valveholder for Coil Socket.
- 2 5-prong Valve Bases for Winding Coils.
- 1 Valve Pin and 2 Sockets.
- Small piece Resistance Wire.
- 1 .0005 mfd. Tuning Condenser.

consisting of a short piece of resistance wire, makes connection with one of the filament terminals on the valveholder. The other filament terminal on the valveholder is supplied from a convenient terminal on the old coil-socket, a short insulated lead passing through the screen. The two or three remaining connections are so clearly shown in fig. 2 as to render further description unwarranted.

The screen-grid valve must, unless very substantial modifications are made, be of the English type, having the plate terminal at the top. This is important. With this limitation, the valve may be of any good make, bearing in mind the remarks made earlier in this paper about the filament resistance.

Trying Out.

WITH a suitable screen-grid valve and both coils in position, the receiver may now be given a try-out. The improvement on broadcast wavelengths should be very marked indeed, and the distance-getting qualities of the receiver will be appreciated.

On the short waves the increased amplification will not be so apparent, but there should nevertheless be a substantial improvement. Those listeners in close proximity to the local station may find some difficulty in clearing it; to such we recommend the use of a very successful wavetrapp to be described in the 1931 "Guide."

The method of coping with unwanted oscillation in the screen-grid stage in the unlikely event of this occurring has already been dealt with. It will occasionally be found that the removal of the aerial damping from the detector coil renders the reaction control itself less smooth.

It is highly unlikely that this will occur, too, but if it should it is well to remember that the original smoothness can be restored by slightly reducing the number of turns on the reaction coil.

As a final word of caution, see that the high-frequency choke is above reproach. This is perhaps the most important component in the whole receiver and an inferior article will spoil the performance of the set completely.

Transmitting from Napier

2AK's Activities

CONCERNING the activities of the "hams" who went through to Napier following the disaster, the Western Electric Company writes:—

"While we appreciate the excellent work done by Messrs. Green and Dickson and the spirit in which it was performed, nevertheless we think that the majority of the credit lies with Mr. A. M. Cooper, of call-sign

was erected the Post and Telegraph Department took it over officially, giving it the call-sign of ZLN. Actually, according to the above-mentioned department, this station was the first official communicating station in Napier.

"In point of fact, Messrs. Green and Dickson were first on the air on behalf of the Red Cross and working under their amateur call-sign. To avoid confusion they were requested by the Post and Telegraph Department to refrain from transmitting, but on Mr. Cooper's suggestion they transferred their transmitter from the Red Cross depot to the Hastings Street School. In this location they transmitted one or two messages on an official basis, but after that the department again stopped them transmitting, and Mr. Cooper carried on with the call-sign of ZLN, as originally issued to him.

"Mr. Cooper placed himself entirely in the department's hands, and for a period of one week he stood by the transmitter practically without a break. Apparently in the eyes of the department he did sterling work, as they were very loath to let him go and would not under any circumstances hear of him taking the transmitter.

"According to the latest report we have had from Napier, the station is still on the air and is likely to remain until all danger in that district is over."



MRS. R. RATTRAY,
a Scottish soprano, who sings from 1YA.
—Andrew, photo.

"ULTIMATELY"

You will buy an
ADD-A-PHONE
Why not now?

Remember, it's the best
LITTLE SHORT-WAVE SET
on the market, and the price
is reasonable.

Being a complete unit by itself, it works independently of any set. And yet can be instantly attached to any modern set, A.C. or D.C.

IT IS NOT AN ADAPTER,
So
ADD AN ADD-A-PHONE
to your set and make it modern.

Made and Designed by
MACK'S RADIO SERVICE
76 Kent Terrace,
Wellington: Phone 23-448

METRO

MANTEL RADIO

A Quality Radio in small space.
Write for full details.

R. H. Co.,
553
Colombo St.,
Christchurch



Improve Your Reception on D.X.

BUY A PAIR OF GOOD PHONES

We recommend to you as the best phones.

B.T.H.	18/-
Siemens	10/6
Standard	9/6

ALL BRITISH MANUFACTURE.

TRADE ENQUIRIES INVITED.

F. J. W. FEAR & CO.

63 WILLIS STREET, WELLINGTON.

Phone 41-448.



Siemens