THE AUSTRALASIAN

Radio World

1/2 PRICE, 8d.

Registered at the G.P.O., Sydney, for transmission by post as a periodical.

VOL. 5 . . . . . NO. 7 DECEMBER 1940

LATEST D.W. FIVE-VALVE SET

REPRINT OF TIP-TOP CIRCUIT

WAR NEWS GUIDE FULL S.W. SCHEDULE

TONE CORRECTOR FOR PICK-UPS

Build it Yourself! . . . The Xmas Portable

The Australasian

RADIO WORLD

Incorporating the

ALL-WAVE ALL-WORLD DX NEWS

Vol. 5 DECEMBER, 1940 No. 7

CONTENTS:

The "Australasian Radio World" is published monthly by A. G. Hull.

Editorial Offices: 117 Reservoir St., Sydney, N.S.W. Telephone: MA 2455.

Subscription rates: 1/- per copy, 10/6 per year (12 issues), post free to Australia and New Zealand.

PERSONAL

Under the rationing regulations which control the amount of paper we are permitted to use in this production, it appeared most unlikely that we would be able to offer anything in the way of a bumper Christmas issue. Yet we felt that something should be done to produce a special issue which would express the appreciation we feel for the splendid support which readers have given us during the year.

Not to be outdone in this resolve we have therefore cut down on this issue to a minimum, getting in as much technical matter as on hand, but squeezing it into 36 pages.

This saving in paper will allow us to carry out the idea of the special Christmas issue, and it should be on sale about a week before the holidays.

In this special issue we hope to be able to have at least sixty pages (although we'll have to weigh up on our quota to make sure).

In these sixty pages we hope to have some very special articles, including full details of two more championship amplifiers, the rest of the picture diagrams and photos covering the construction of the portable set which is announced in this issue, and also several completely new technical articles.

It may seem a little like robbing Peter to pay Paul, but we can only ask your tolerance. Things aren't what they used to be.

Which thought brings to mind that if we understand the budget proposals correctly there will be quite an incentive to radio set building, as complete sets carry the 15% sales tax, whilst radio component parts are taxed at only 10%.

Why radio sets should be classed as luxuries, and put in the 15% class seems a little hard to understand, as in most homes a radio set is just as much a necessity as the clock on the mantelpiece or the newspaper on the table.

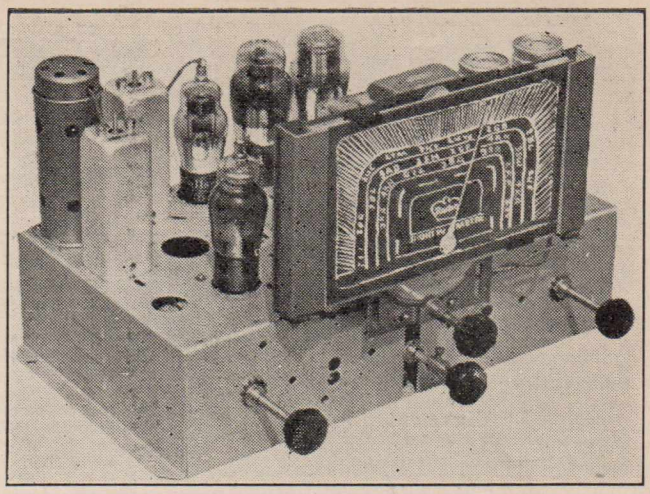
However these things come to us, wrapped up in a story of national effort, so that none of us feel any other sentiment than that we have to endure them as best we can.

The main thing being to "do your bit" and "carry on."

A. G. HULL.

The R.W. 13/42

Although strictly conventional, this reliable circuit embodies all the latest ideas for a popular dual-wave receiver.



A general view of the chassis.

EASILY the most popular type of set on the Australian market is the four-five dual-waver.

Sets of this type can be built cheaply, aligned easily, and they are capable of giving all-round performance of sufficiently high order to fulfil all reasonable requirements.

Here is our version of the very latest circuit of this type, using all the most modern components and ideas and giving ample range, selectivity, tone, freedom from hum, and, in fact, a sound design for a mighty fine proposition.

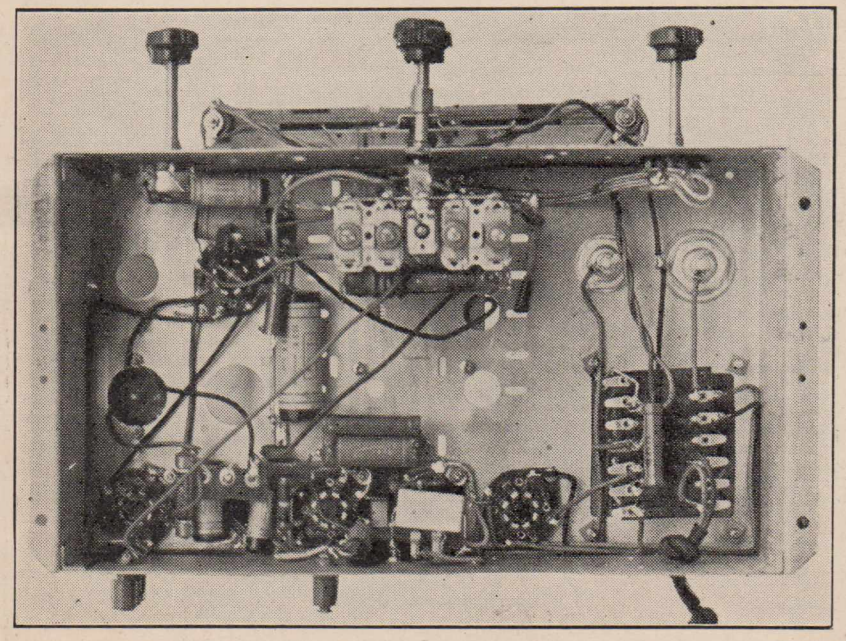
Outstanding Features

The circuit does not bristle with outstanding features, but it does embody every worthwhile refinement. It is specifically designed to make the most of the latest "Crown" radio components, including their dual-wave tuning bracket, which when used with the "H" type Stromberg-Carlson gang condenser gives a coverage of from 13 to 42 metres on the short-wave band.

With the coming summer months, it is probable that the 13 metre band will be one of the most effective for short-wave reception of overseas news, and it should be a decided advantage to have this band covered effectively.

High efficiency in the coil bracket accounts for good short-wave performance and there is ample sensitivity to bring in all those stations which are likely to have any news or entertainment value.

Changes in valve types from the usual specified in our recent circuits are the 6J8G and the 6F6G. In the matter of the converter valve, we have been using the 6K8G in most of our circuits and we have found it quite a good valve in every way. But in the opinion of Mr. Cranch, the new manager of the Crown factory, the 6J8G is a more reliable valve, and all the new Crown coil units are intended primarily to use this valve. Mr. Cranch has had many years of experience in the coil kit business and his recommendation in this matter should carry weight. In the matter of the output valve we usually specify a 6V6G, this beam power valve having amazing sensitivity. With the efficient coils and the high intermediate gain in this set, however, sensitivity is not such a necessity as with some smaller set, and so we use the 6F6G, which allows us to use back-biassing to get excellent tonal quality.



A view of the under side, showing the simplicity of the wiring.

Construction

Glancing at the photos of the chassis, it will be seen that we have used the Crown base, which is universal in its application, having holes drilled to accommodate a variety of styles of coil boxes, and suitable for a five-six set as well as a four-five. When used as we have done, there are several blank holes, but, even if unsightly, these are not actually any drawback. There may come a time when the set is re-built to a more elaborate circuit, in which case the extra holes will prove invaluable.

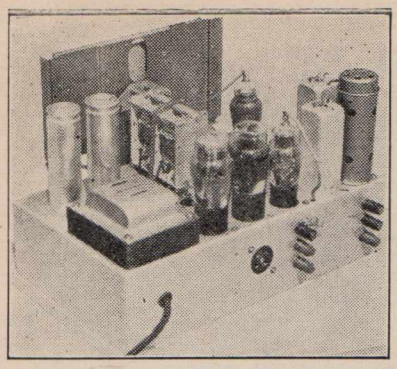
Layout

As will be seen from the photographs, there is ample space under the base for all the minor components, the base having a depth of 3½ inches. This allows all the by-pass and coupling condensers to be mounted directly to the valve sockets and lugs.

Colour-coded leads from the coil bracket make it a simple job to wire it into position. Two separate earthing braids come from the coil bracket, and these should be earthed to chassis at the same point as the gang wipers.

The Wiring

Wiring is straight-forward, the only shielded leads being those running across to the volume control. The shielding of these leads should be effectively earthed at both ends, and also in the middle. The earthed terminal of the volume control can be earthed to the shielding.



Another view of the completed chassis.

Alignment

Alignment is greatly simplified if the dial, coils and gang condenser are properly matched as they should be.

By using the Crown DC2H coil bracket, with a Stromberg-Carlson "H" type gang condenser and a Crown FD3H dial, the set will be correctly aligned when the stations fall on the dial according to the station markings on it.

The trimmers on the coil bracket are readily accessible, and we give a diagram showing the order in which they are located. It should be noticed that they are located differently on Crown coil brackets, compared to Radiokes and R.C.S. brackets, a diagram for which appeared on page 36 of the October issue.

Having made yourself thoroughly acquainted with which trimmer is which, you can proceed with the alignment by tuning in a station down at the 2SM end of the dial and setting the aerial trimmer (broadcast, of course) for best results. Then swing up to 2FC or any station at that end and align the padder for best results, but at the same time rocking the dial to and fro over the station. Then, while at this end of the dial, tune to a station of known call-sign, and loosen the pointer screw and set the dial pointer correctly before re-tightening the set screw.

R.W. 13/42 FOR 1941 — Parts List

1—Base, size 14" x 8" x 3½" (Arcadian).
1—Power transformer, 385 v. at 80 ma.
1—Dual-wave coil bracket (Crown type DC2H).
1—Dial to suit (Crown FD3H).
2—Intermediate transformers (Crown type ISP).

RESISTORS:

2—.5 meg. Potentiometers (I.R.C.).
1—1 meg. 1 watt (I.R.C.).
1—5,000 ohm 1 watt (I.R.C.).
1—15,000 ohm, 2 watt (I.R.C.).
1—50,000 ohm 1 watt (I.R.C.).
1—250,000 ohm 1 watt (I.R.C.).
1—.5 meg. 1 watt (I.R.C.).
1—300 ohm wire wound to carry 100 ma.
1—150 ohm wire wound to carry 100 ma.

CONDENSERS:

1—.00005 mfd. mica (T.C.C.).
2—.00025 mfd. mica (T.C.C.).
1—.0005 mfd. mica (T.C.C.).
2—.01 mfd. mica (T.C.C.).
1—.05 mfd. tubular (T.C.C.).
2—.1 mfd. tubular (T.C.C.).
1—.5 mfd. tubular (T.C.C.).
1—8 mfd. electrolytic 500 v. (T.C.C.).
1—16 mfd. electrolytic 500 v. (T.C.C.).
1—25 mfd. electrolytic 40 v. (T.C.C.).

SPEAKER:

2,500 ohm field coil, 7,000 ohm load, to suit 6F6 valve (Rola, Amplion).

VALVES:

1—6J8G, 1—6U7G, 1—6B6G, 1—6F6G, 1—5Y3G.

SUNDRIES:

1—Valve can, 5 octal sockets, 1 UX socket, 6 terminals, 4 knobs, 4 dial lights, wire. screws, terminals, etc.

Now turn back to the 2SM end of the dial and if the stations do not fall correctly at that end of the dial, you can adjust the oscillator trimmer until they do. Then re-align aerial trimmer.

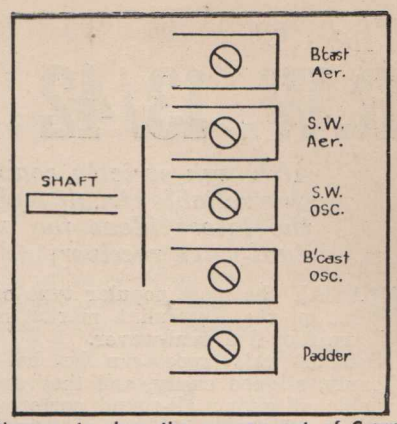


Diagram to show the arrangement of Crown trimmers, which are different to those of R.C.S. and Radiokes coil brackets.

I.F. Alignment

After this trimmer alignment has been completed and the stations come in on the dial correctly, the alignment of the intermediates can be checked by tuning to a distant station up at the 2FC end of the dial, keeping the output volume at a whisper and then trying a fraction of a turn either way with each intermediate trimmer.

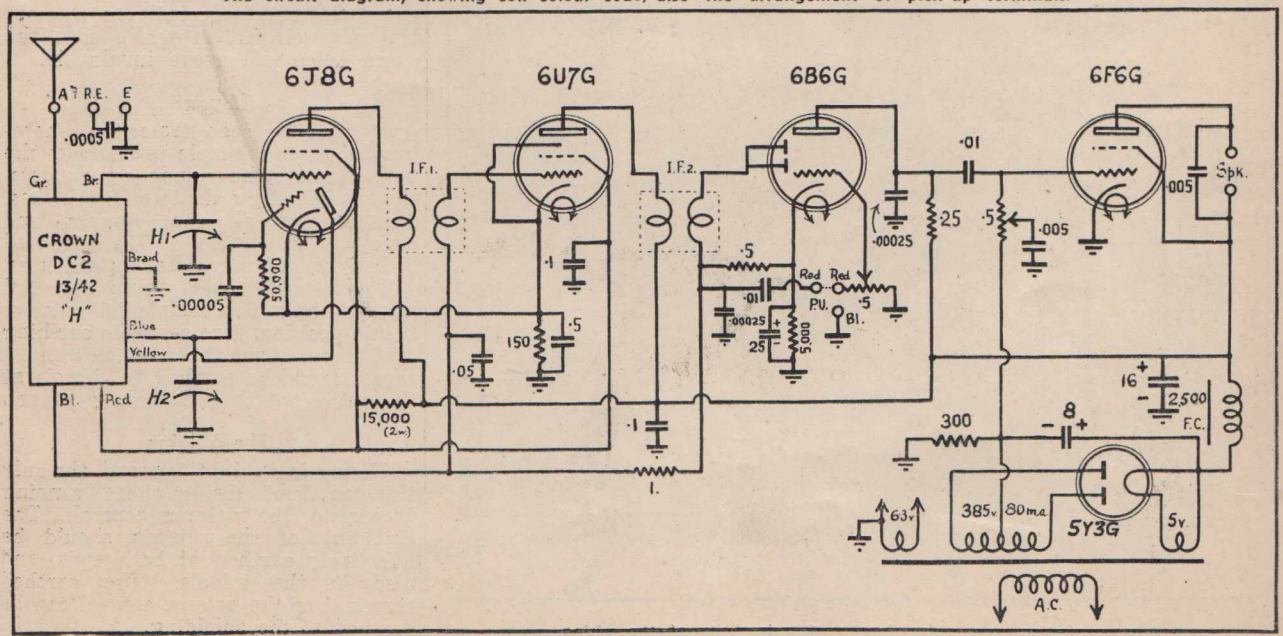
Short-wave Alignment

As there is no padder adjustment, it is a simple matter to set the short-wave trimmers. It is recommended that a station on the 19-metre band should be used during the alignment, setting the short-wave trimmers to get best results on this station.

There may be two points at which

(Continued on page 34)

The circuit diagram, showing coil colour code, also the arrangement of pick-up terminals.



XMAS PORTABLE

Here is the description of a self-contained portable which represents all that is desirable in such a receiver, five valves give maximum tone, range and general performance, yet the finished set is of handy dimensions and reasonable weight.

AT this time of the year there is increased interest in portable receivers.

Everybody wants to hear the news on the radio and quite a big percentage of the listening public are also interested in sports results. But you can't sit around in front of a radio set waiting to listen in to what you want to hear.

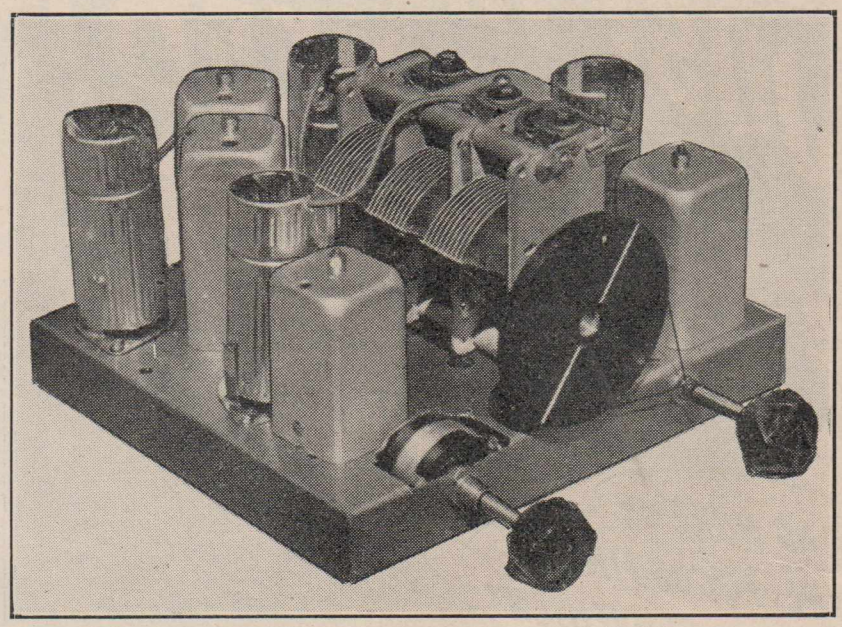
The outdoors calls to you.

There is one certain answer. Take a portable radio with you.

Many Advantages

The modern portable receiver is light and economical, and will give perfect reception without any external aerial or wires. It is completely self-contained, and no matter where you are you have only to throw over a switch and you have your choice of programmes.

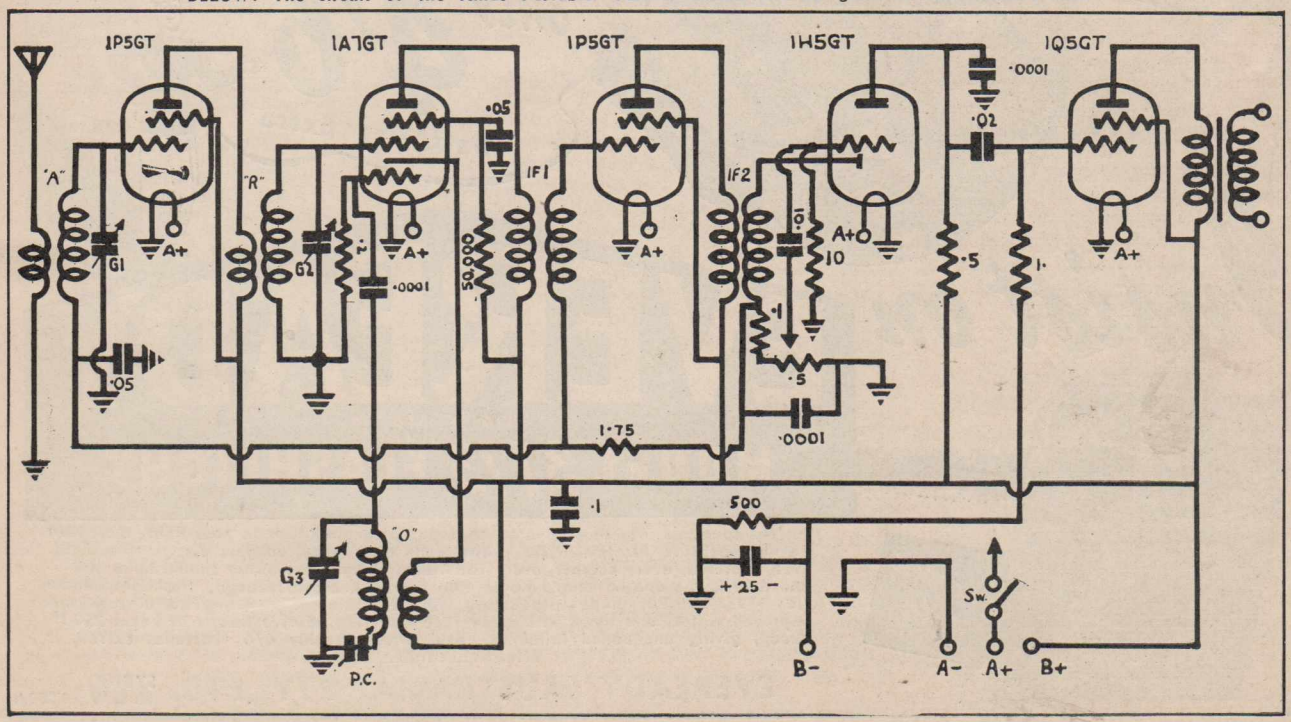
The self-contained portable is far more versatile than the car set when it comes to reception "on the road." The in-built car set has the advantage of requiring no batteries, so that running costs are negligible, but the portable has many advantages. It can be used in the car, but when the car is in the garage the set can be used in the home, at the bedside, in the garden or, in fact, anywhere at all.



This view of the chassis shows the compact layout which has been adopted.

For a camping trip the portable is an absolute blessing, giving you cor-

BELOW: The circuit of the Xmas Portable. Further details will be given in next month's issue.



XMAS PORTABLE

(continued)

rect time, latest news and filling in the evenings after sundown.

Circuit Considerations

When considering the best circuit for a portable receiver there are three main considerations:—(1) Whether to use a tuned-loop aerial; (2) whether to use an r.f. stage; (3) whether to use a dual-purpose detector-output valve or two separate audio valves.

Dealing first with the matter of aerials, we find, as with most arguments, that there are points both for and against, and a lot depends on your particular outlook. Undoubtedly, the tuned loop is the most attractive type of aerial, as no trailing wires are required, just the in-built loop, and all you have to do is to throw the switch to get results.

Problems With Loop

But in practice the loop is not such a simple proposition, as its effective inductance is largely dependent upon how and where it is mounted.

Especially if you want the dial needle to track properly with the dial markings, the loop aerial is a potential source of difficulties.

So, for the benefit of those who may be a little doubtful about the problem of the tuned loop, we describe this set as a straight-forward receiver with an ordinary aerial coil.

THE XMAS PORTABLE

1—Carrying case, size 12" x 9" x 8" (Western).
1—Base to suit, 8" x 7¼" x 1" (Arcadian).
1—Coil kit, with intermediates and padder (R.C.S., Radiokes).
1—Three-gang condenser (Stromberg G).
1—Dial to suit (R.C.S., Radiokes).

CONDENSERS:
3—.0001 mfd. mica (T.C.C.).
1—.01 mfd. mica (T.C.C.).
1—.02 mfd. tubular (T.C.C.).
2—.05 mfd. tubular (T.C.C.).
1—.1 mfd. tubular (T.C.C.).
1—25 mfd. electrolytic 25 v. (T.C.C.).

RESISTORS:
1—.5 meg. potentiometer with switch (I.R.C.).
1—500 ohm 1-watt (I.R.C.).
1—50,000 ohm 1 watt (I.R.C.).
1—100,000 ohm 1 watt (I.R.C.).
1—200,000 ohm 1 watt (I.R.C.).
1—500,000 ohm 1 watt (I.R.C.).
1—1 meg. 1 watt (I.R.C.).
1—1.75 meg. 1 watt (I.R.C.).
1—10 meg. 1 watt (I.R.C.).

VALVES:
2—1P5GT, 1—1A7GT, 1—1H5GT, 1—1Q5GT.

SPEAKER:
5" Permagnetic high-efficiency type to suit 1Q5GT (Rola, Amplion).

BATTERIES:
2—PR45 "B" batteries, 1—PR8 "A" battery (Eveready).

SUNDRIES:
5—Octal sockets, 4 valve cans, 2 knobs, hook-up wire, terminal strips, solder lugs, screws, nuts, etc.

As such, the set will bring in all the local stations with an aerial consisting of a three-foot length of wire, good range can be obtained with about twenty feet of wire wrapped around inside the cabinet, and stations from every part of the Commonwealth simply roar in with an external aerial consisting of fifteen feet of wire strung around a picture rail.

Those who are prepared to see the matter through can use the tuned-loop aerial, it being simply a matter of ordering a coil kit of this type.

The R.F. Stage

Problem number two is about the r.f. stage. As everybody knows, or should know, an r.f. stage ahead of the converter valve gives greater sensitivity to any set. Not only does it give greater sensitivity, but also greater effective selectivity and also a lower ratio of noise to signal. With a portable receiver operating from a comparatively inefficient aerial, we feel that this increased sensitivity and lowered noise level is well worth the extra cost incurred. This extra cost amounts to the difference in price between a three-gang and a two-gang tuning condenser, the cost of the aerial coil and the valve itself, as well as a few minor components. The total of the extra initial cost is probably between a pound and thirty shillings. Then there is also a slightly increased running cost, as the drain on both batteries will be higher with the extra valve. The increased drain is not large, however, and may mean a difference of ten or twenty hours in the life of each set of batteries.

In our opinion, the added cost and running expense is well worth while, and we strongly recommend an r.f. stage in preference to the alternatives — a simpler set or a set with two i.f. stages.

The Output Valve

When we come to the third consideration, we get on to rather dangerous ground, and if we really said what we thought of the 1D8GT or even repeated some of the remarks made in letters received recently from our readers, we might be very sorry for them later.

The 1D8GT is a remarkable valve and when working properly it gives two-valve results from a single valve, making a four-valve portable do the same work as a five-valve job.

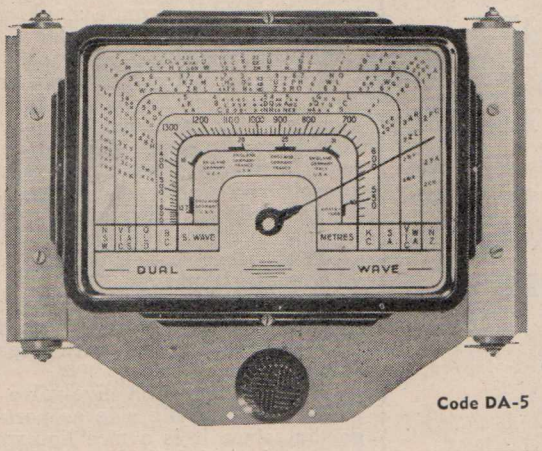
When you really get down to tin tacks, it is doubtful whether this is such a wonderful advantage. The 1D8GT costs nearly as much as two separate valves, takes nearly as much filament and high tension current, and has the undoubted disadvantage of requiring complete replacement in the event of either section proving faulty or becoming damaged.

There is not much to it, but since our previous portables have used the 1D8GT here is one with separate audio valves.

It makes up as a five-valve job, which is on the big side as portables go, but since it is a nice lightweight in actual avoirdupois, and small in inches, it is really a nuggetty job, with exceptional performance.

It carries a strong recommendation as the last word in self-contained battery portables.

The SET-BUILDER'S SUCCESS lies in R.C.S. TROLITUL COILS and R.C.S. DIALS



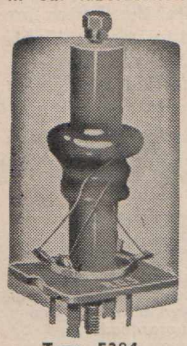
Code DA-5

R.C.S. Dials, Types DA-1 and DA-2, are single glass dual-wave, the type DA-2 having been designed for use with our Five-Band Communications Receiver coil kit, and the "H" type Condenser. Code DA-1 is a standard dual-wave dial for use with R.C.S. Coils and the "F" type condenser. The DA-5 Dial is for 1600 to 550 k.c., and 13.7 to 40 metre bands and the "H" type Condenser. All of this series are edge-lit and wedge-driven. The aperture for the escutcheon is approximately 7" x 4-7/8."

DA-1 Standard D.W. Dial, "F" Condenser ..... Price 22/6
DA-2 Communications Dial. Price 22/6
DA-5 13.7 to 40 metres D.W. Dial, "H" Condenser ..... Price 22/6

R.C.S. Trolitul Broadcast Coils

These coils are available in both Air Core and Permeability tuned types. The latter are adjusted to ensure maximum efficiency in our laboratories.



Type E284

AIR CORE
"H" Gang

Code		Price
E342.	Aerial	6/6
E343.	R.F.	6/6
E344.	Osc.	6/6

PERMEABILITY
"F" Gang

E279.	Aerial	8/6
E280.	R.F.	8/6
E281.	Osc.	8/6

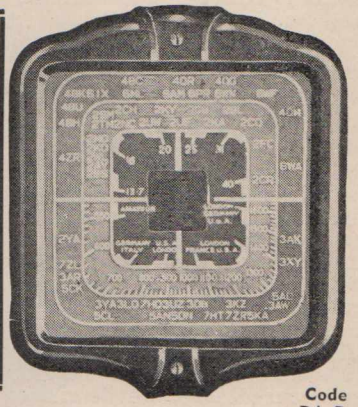
FOR THE "R.W. XMAS PORTABLE"

You'll be assured of the highest gain combined with micro-accurate tuning if you use this newest R.C.S. Coil Kit for the "Xmas Portable," featured in this issue. Trolitul insulation throughout is your assurance of high fidelity reception — designed for easy mounting — the last word for sensitivity and selectivity. This Kit comprises air-cored aerial, r.f. and oscillator coils, and two i.f. transformers, complete with 465 k.c. padder. For "H" gang. Ask for R.C.S. Coil Kit Code K164. Price £1/16/9
R.C.S. Dial DA-7 ..... Price 9/-

FOR THE "TIP-TOP"

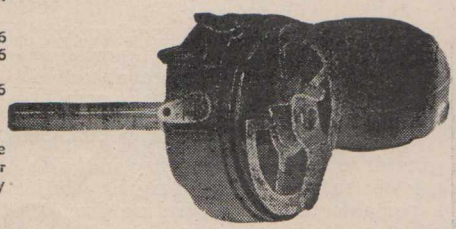
R.C.S. Trolitul coils and I.F.'s, because of their extremely good sensitivity, combined with small size, are the outstanding coil kits for midgets, mantels and portables. For best results with the "Tip-Top" specify Coil Kit Code K151. Price, £1/10/3.

For use with "H" gang. Dial to track DA-7. Price, 9/-.



Code DA-7

R.C.S. POTENTIOMETERS AND RHEOSTATS



The R.C.S. Volume Controls are the result of improved and new methods of manufacture, together with alterations in design and final testing. Noiseless, they are constructed so as to cut off all volume.

		Code	Price
6 ohms	Rheostat	.25 Amp. PT40	5/-
10 "	"	.25 Amp. PT38	5/-
20 "	"	.25 Amp. PT39	5/-
30 "	"	.25 Amp. PT34	5/-
400 "	Potentiom.	50 M/A PT46	5/-
1000 "	"	35 M/A PT47	5/-
2500 "	"	30 M/A PT49	5/-
5000 "	"	30 M/A PT51	5/-
10000 "	"	20 M/A PT52	5/-
15000 "	"	20 M/A PT53	6/6
20000 "	"	15 M/A PT54	6/9

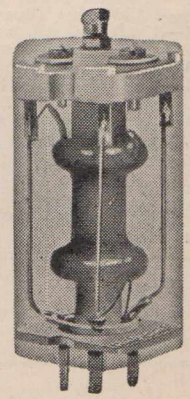
R.C.S. PORTABLE KIT DIAL DA-7

The new D.W. Portable Kit Dial, Code DA-7, has all parts supplied ready to assemble, and it has a glass scale with both B.C. and S.W. Bands clearly marked, finished in white with green background. The special walnut escutcheon is easy to fit and requires an aperture of 3" x 3." It is the only portable dial which can be edge-lit. Available for use with "H" type Gang Condenser on 1600 and 550 k.c. and 13.7 to 40 metres S.W. Bands.
Code DA-7 ..... Price 9/-

R.C.S. TROLITUL INTERMEDIATE TRANSFORMERS

The new R.C.S. Trolitul I.F.'s are extremely stable, due to new methods of construction made possible by the use of Trolitul formers and base. No loose wires to shift and alter frequency. Positively the best I.F.'s yet produced.

Code		Price
	Air Core, 465 k.c.	
IF107.	1st I.F.	7/6
IF108.	2nd I.F.	7/6
	Iron Core, 465 k.c.	
IF109.	1st I.F.	11/-
IF110.	2nd I.F.	11/-
	Air Core, 175 k.c.	
IE68.	1st I.F.	7/6
IE69.	2nd I.F.	7/6



Code IF107

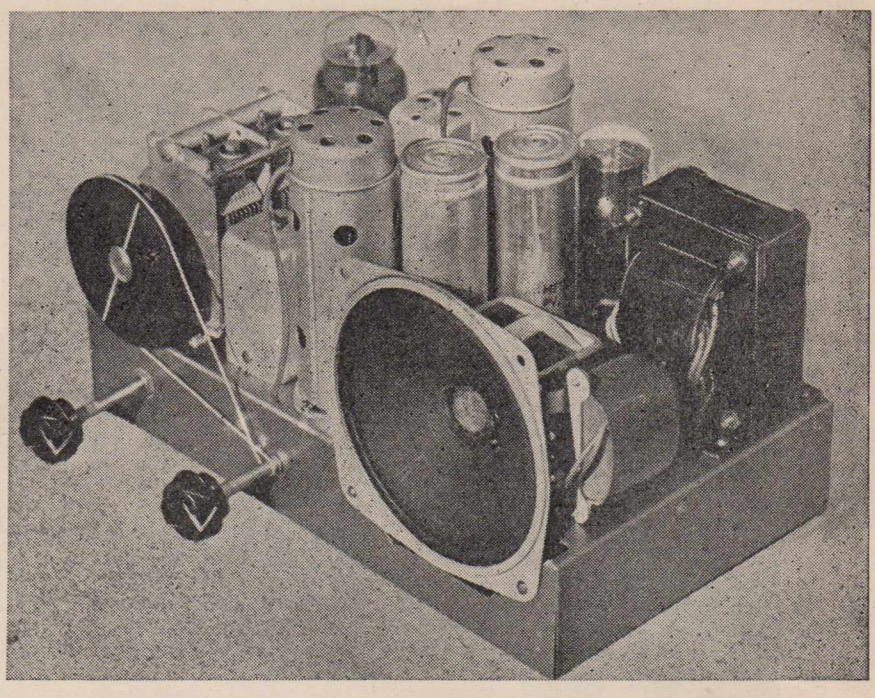
RCS RADIO

OBTAINABLE FROM YOUR LOCAL DEALER

50 GLEBE STREET, GLEBE. Phone: MW 2405

TIP-TOP 3/4 SUPERHET

In response to hundreds of requests from readers who have been unable to secure a copy of the July issue, here is a reprint of the important parts of the original article on this wonderful little receiver, one of the most popular and successful circuits of recent times.



A front view of the finished receiver. Special midget power transformer is behind the speaker.

Here is the result — Tip-top, a straight broadcast mantel model using as few components as any superhet ever described, costing an absolute minimum and definitely guaranteed to give better performance than any 3/4 set described in Australia for some time past.

Nothing has been skimped or omitted, and there are the full four stages of amplification of the conventional 4/5 set, yet only four valves are used in all.

Intermediate Amplification

There is the usual intermediate amplification, also the usual audio amplification, with ample drive for full power output and tone from the output valve, yet no difficulty with hum.

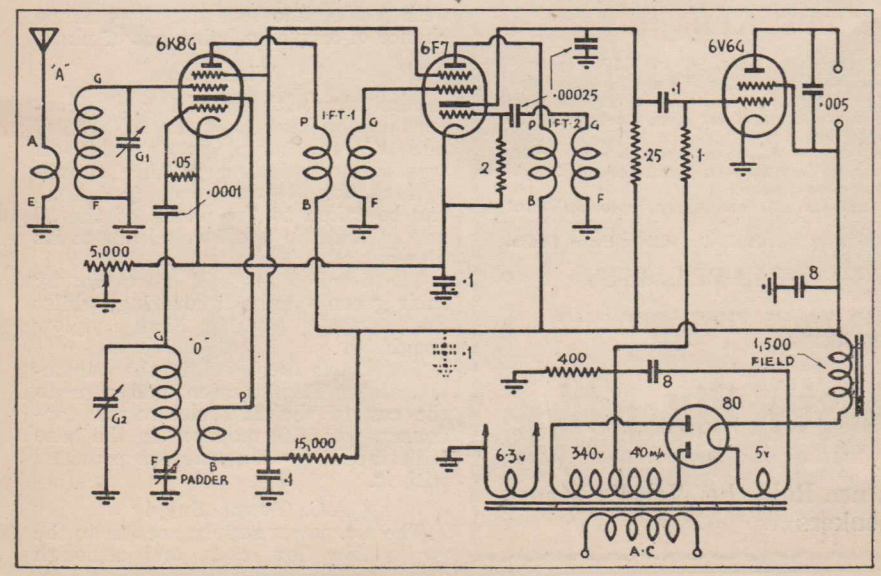
The high tension current drain has been cut back to a minimum, so that one of the small power transformers can be used without any sign of overloading or overheating.

In a nutshell, it is a set which can be built for well under a tenner, and yet be depended upon to give complete satisfaction in every way.

The Circuit

The centre of focus in the circuit design is the use of the 6F7 pentode-triode as an intermediate amplifier and leaky grid detector.

Circuit schematic of Tip-Top in its simplest form.



Dual-purpose Valve

This valve serves these purposes to perfection and is in no way experimental or freakish. It has been featured for years in many prominent brands of receivers such as Airzone and Kriesler, and has always given good service. It is quite reasonably priced, too, which is a point to watch when considering multi-purpose valves, as some of them cost about as much as the two ordinary valves replaced.

Converter Valve

The converter valve is a 6K8G, which has been found by us to be easily the most satisfactory converter valve for all-round use, being a particularly easy oscillator and not at all critical to various types and styles of coils, layouts, etc.

6V6G As Output Valve

The output valve is the 6V6G beam power valve, which is deservedly popular. In this particular set we bias it back a little to keep the current drain low, but it is still capable of fully driving the small speaker used with a set of this type.

The Layout

The layout allows simple point-to-point wiring, with adequate space for the components to be fitted within the

(Continued on page 12)

TIP-TOP

(continued)

base. Every soldered joint is accessible with an ordinary soldering iron, and each and every component can be fitted or removed individually, thereby greatly facilitating the proper adjusting and testing of the finished chassis. The value of the provision of ample room for the layout is revealed when we mention that we assembled and wired the original set and had it in operation within three hours of unpacking the components. Such speedy wiring would be impossible with one of the "Jugglers' Specials."

Assembly

With a ready-drilled base the actual assembly is just as simple as playing with a Meccano set, and there is no chance of anything being out of place.

PARTS LIST — "Tip-top"

1—Base, 11½" x 6½" x 2" (Acorn, Arcadian)
1—Power transformer (40 m.a.)
1—Coil kit with I.F.'s and padder (R.C.S., Radiokes)
1—2-gang "G" type (Stromberg-Carlson)
1—Portable type dial (R.C.S.)
1—2 meg. resistor, 1 watt (I.R.C.)
1—1 meg. resistor, 1 watt (I.R.C.)
1—50,000 ohm resistor, 1 watt (I.R.C.)
1—15,000 ohm resistor, 3 watt (I.R.C.)
1—400 ohm resistor, 3 watt (I.R.C.)
2—8 mfd. electrolytic condensers, 500v. (E.T.C., T.C.C.)
3—.1 mfd. tubular condensers (E.T.C., T.C.C.)
1—.005 mfd. tubular condenser (E.T.C., T.C.C.)
2—.00025 mfd. mica condensers (E.T.C., T.C.C.)
1—.0001 mfd. mica condenser (T.C.C., E.T.C.)
1—5,000 ohm volume control (R.C.S., Radiokes)
2—Octal sockets
1—4-pin socket
1—Small 7-pin socket
VALVES:
1—6K8G, 1—6F7, 1—6V6G, 1—80 (Ken-Rad, Radiotron, Mullard, Philips, Brimar)
SPEAKER: 5" dynamic 1500 field coil, 7000 load (Amplion, Rola)
SUNDRIES: 2 knobs, hook-up wire, solder, screws, etc.
CABINET: Special cabinet (Western)

Wiring

First step with the wiring is to connect up the heaters of the 6K8G, 6F7 and 6V6G, and then apply the 6.3-volt transformer winding to this circuit.

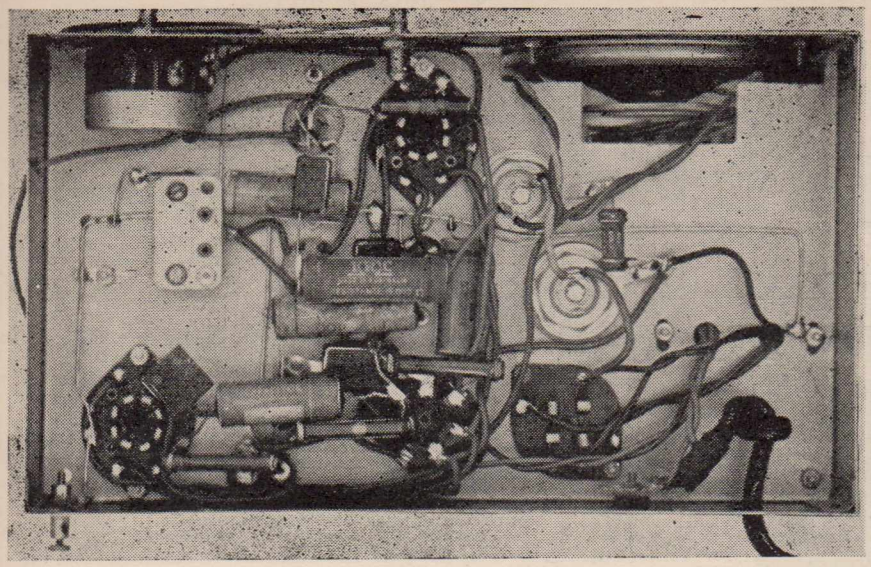
Next, the 340-volt leads (red flex) can be taken to the plates of the 80 socket, and the two 5-volt leads to its filament.

The 5-volt leads will be known by their green spaghetti covering, whilst the 6-volt winding has yellow spaghetti.

The black flex lead is the centre-tap of the high tension, and runs to the can of the first electrolytic condenser, which is mounted in the base with the insulation washers provided with it.

A.C. Power Supply

The a.c. power supply goes in to the two yellow flex leads, and although



Swinging the dial should bring in a few stations and, selecting 2SM or some station at the bottom of the dial, the trimmer on the aerial section of the gang can be set for best results. Then swing the dial to the other end, say on to 2FC, and set the padder for best results, at the same time rocking the dial to and fro to make sure that the station is being tuned in properly.

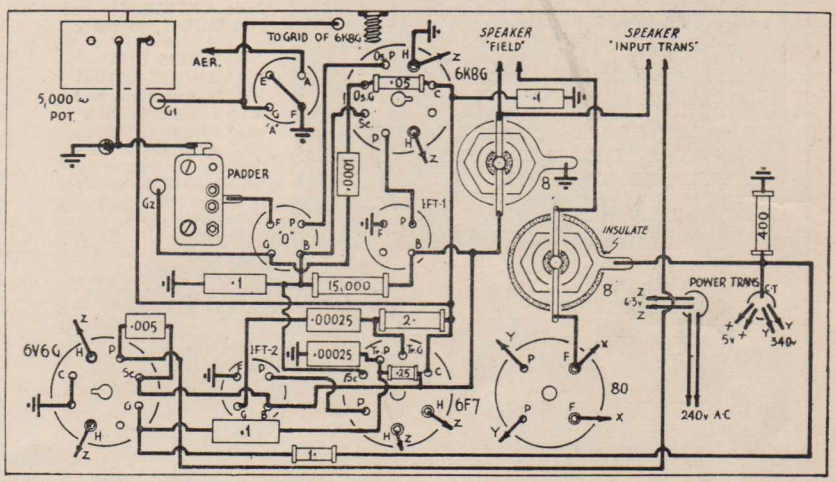
LEFT: Photograph from underneath the set showing the simple layout and wiring which can be completed in just three hours.

BELOW: This picture diagram, together with the photograph on left, will simplify the wiring. You can't go wrong!

it is possible to join the main power flex to these leads and then cover up each joint with insulation tape and then wrap the two lots of tape together, it is neater to mount a little two-point terminal strip, and solder the power leads to the transformer leads at these terminals. In either case it is well to remember that these two wires are the most dangerous in the set, and they are capable of delivering a serious shock if grasped by mistake. A knot should be tied in the power flex so that it is not possible for a pull on the flex to put a strain on the terminals or joints.

Testing

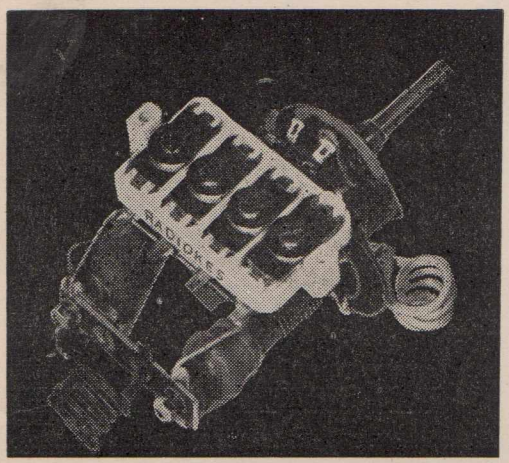
With the valves in position and the speaker connected, the power can be switched on and the set tested with a short aerial.



Radiokes

"The Name to Know in Radio"

Specialise in Component and Coil Kits for PORTABLES and SMALL SETS!



"RADIO WORLD XMAS PORTABLE"

Once again Radiokes steps to the fore with a perfectly-matched Kit for the set featured in this issue. For best results you can't do better than specify Radiokes Kit, Code CK1022, comprising air-core aerial, r.f. and oscillator coils, and two i.f. transformers, complete with 465 k.c. padder. For use with "H" gang. Price £1/16/9
Dial DWD-7, to track 9/-

"RADIO WORLD TIP-TOP"

For best results with the "Tip-Top" specify Radiokes Kit Code CK1023. For outstanding sensitivity in compact size Radiokes Trolitul coils and I.F.'s are supreme.
Code CK1023, for use with "H" gang ..... Price £1/10/3
Dial DWD-7, to track ..... Price 9/-

●

RADIOKES DUAL-WAVE UNIT DWU-1
Highly selective unit with exceptionally wide range. To match "H" type gang condenser. Incorporating 4-in-1 padder. Solidly mounted with coils.
Type DWU-1 —
Price 27/6

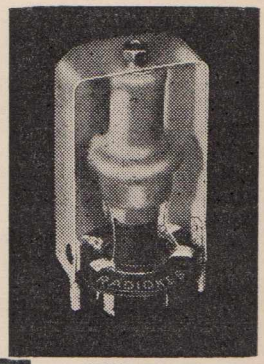
●

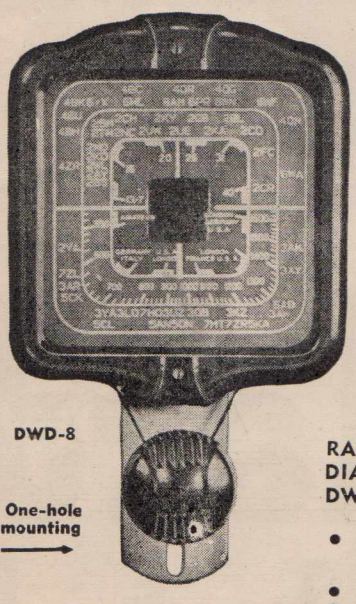
NEW RADIOKES BROADCAST COIL

Trolitul rigid construction, available in air-core and permeability types.

Type B.A.C. Aer. R.F. or Osc. —

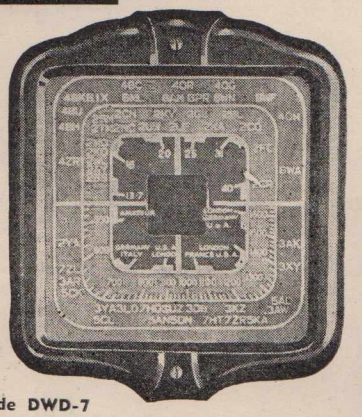
Price 6/6





DWD-8

One-hole mounting →



Code DWD-7

RADIOKES DIAL DWD-8

The specifications of this dial are exactly the same as the DWD-7 except that the components are mounted on a bracket which requires only one screw to fit it to the chassis.

Type DWD-8 ..... Price 13/6

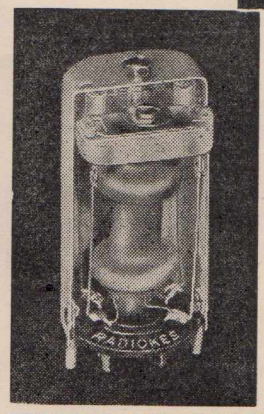
RADIOKES DIAL DWD-7

- Dial shows Dual-wave and Broadcast stations clearly marked in white on green.
- This dial can be edge-lit.
- Neatly finished walnut escutcheon of attractive design.
- The aperture required for the dial is 3" x 3."
- For "H" gang, B.C. 1600 to 550 k.c. and S.W. 13.7 to 40 metres.

Radiokes Dial, Type DWD-7 ..... 9/-

ALSO AVAILABLE —

DWD-1 Standard D.W. Dial 22/6
DWD-2 Communications Dial 22/6
DWD-5 13.7 to 40 metres D.W. Dial 22/6



NEW RADIOKES INTERMEDIATE TRANSFORMER

One-piece mechanically-sound Trolitul formers and base — the highest standard I.F.'s available. A special feature is the round base suitable for round or square cans.
Type —
A.I.F. (Air Core) 7/6
I.I.F. (Iron Core) 11/-
P.I.F. (Perm.) .. 13/9

RADIOKES "H" TYPE COILS WILL TRACK ONLY WITH RADIOKES "H" TYPE DIALS

Radio Suppliers Pty. Ltd.,
Sole Agents for Radiokes Products,
Wingello House,
Angel Place, Sydney.
Phone: B 4586.

If unable to obtain supplies, please put a cross in the square above.
Please send me prices and details of the following lines :.....

NAME .....

ADDRESS .....

What you should know about —

SPEAKER TRANSFORMERS

When you order a speaker it is not sufficient to give the load impedance in ohms, as is more fully explained in this little chat about input transformers.

IT'S the little things that count in radio, and it's surprising how much there is to be known about that little transformer which is screwed on to the framework of the loud-speaker

The average radio man doesn't realise that there are quite a few things about input transformers which are not generally known.

Of course everybody knows that the input transformer has a load rating stamped on it, 7,000 ohms for an average pentode, and so on, and you have only to turn up a valve data chart to find the load you want and specify this load when you order the speaker — and there you are.

But in actual practice you might be wrong, as it is possible to have two input transformers, each rated at 8,000 ohms, and yet one might be right and the other wrong.

A true life story will illustrate this point more clearly.

When Ordering

When we were obtaining the parts for the portable receiver described in this issue, we bought a speaker for it over the counter in the ordinary way, and obtained a speaker which appeared to be according to correct specification, yet results were not as anticipated, especially as regards volume. So we took the speaker to the makers' Sydney office for testing, and they immediately pointed out that the input transformer was of the gapped type, suited to carry the heavy high tension current of an a.c. set.

They suggested that one of the close-cored input transformers would be more efficient and would be quite O.K. when carrying the seven or eight milliamps high tension of a little battery valve like the 1Q5GT.

And so it worked out, with a definite improvement in efficiency.

With a big a.c. set with a single output valve, there may be anything up to 50 milliamps of high tension flowing through the primary of the input transformer in the one direction and having a considerable effect on the flux of the core. A little gap in the laminations may mean a slight loss in efficiency, but is a great help in maintaining the effective impedance, and thus indirectly the resultant tonal quality of the set. Yet, for a small battery set the gap is unnecessary and the loss of efficiency resulting from its use may be a definite drawback.

Both Brands

This matter of the gapping of the core is common to both of the popular brands of speakers available on the Australian market, and so no matter whether you prefer Amplion or Rola speakers, be sure to specify an input transformer for a.c. or battery set, as well as the rated load. To be on the safe side, in fact, specify the actual type of valve being used. If you make this quite plain on your order the speaker distributors will make sure that you get the right type.

Class of Operation

It is also quite a wise precaution to specify more fully the actual operating conditions under which the output valve or valves will be operating.

Some types of valves, especially the newer beam power valves like the 6V6G and the 6L6G, have a number of alternative operating conditions. They can run as straight class A pentodes or they can run in Class AB, Class B and so on.

There is also quite an amount of difference in ratings for screen and plate voltages. Normally the plate operates at full high tension voltage less the drop in the input transformer (a matter of only ten or twenty volts), whilst the screen operates at full high tension. Under such circumstances the required load is entirely different from that required when the valves operate with a screen voltage taken through a dropping resistor or a voltage divider and anything up to a hundred volts or so lower than on the plate.

The correct load for a 6L6G can be anything from 3,000 ohms to 20,000, so make sure that the speaker people know what you are doing when they fit the input transformer to your speaker.

For Push-pull

Another little point about input transformers, likely to trick the average enthusiast, is in the matter of using half a push-pull input transformer with a set having a single output valve.

At first glance it appears to be quite in order to use one half of a push-pull transformer for a single valve in this way, but actually it is quite wrong. As the plate current flow in the two halves of a push-pull transformer is in opposite directions, the effect of the current on the core can be disregarded, and the close-cored transformer is used for maximum efficiency. Putting high tension current through one half in one direction and leaving the other half open-circuited, is going to tend to cause saturation of the core, lowered effective impedance and results are sure to suffer.

It is also unsafe to assume that half a load of 14,000 ohms is 7,000 ohms.

As mentioned in the article on impedance matching, elsewhere in this issue, the ratio of turns is according to the square root of the ratio of impedances to be matched (voice coil to valve load), and as Archimedes said (perhaps), the square root of two is not one.

As a concrete example, let us imagine that the push-pull plate to plate load is rated at 16,000 ohms and the voice coil impedance is 10 ohms. The ratio is 1600 to 1, and working on the square root we find the turns ratio is 40 to 1. Taking one half of this transformer, the turns ratio will be 20 to 1, which squared, equals 400 to 1, and means a load of 4,000 ohms, only one quarter of the original instead of half!

What you should know about —
DIAL TRACKING

Dials with station calibrations can be either a great help or a tough problem, according to whether you have matched components.

A FEW years ago the dials were numbered from 0 to 100, and nobody cared whether 2FC came in on 10, 20 or 80.

But time marches on!

Nowadays the dials must indicate the call-signs of the stations being tuned, and with considerable accuracy at that. Radio sets are operated by all sorts and types and for complete satisfaction the dial needle needs to be an accurate indicator, as often enough the set is tuned in by the needle, not by the tonal quality of the output. If there is much difference between these two, the conclusion reached, only too often, is that the set is no good, should be returned to the builder for attention, and so on.

So the radio men build up headaches for themselves by giving the public everything they can wish for.

Generally speaking, the tracking of dials is not really a problem if you tackle it in a thoroughly efficient way, but every now and then you run into a special problem.

Proper Procedure

The correct way to go about building a set is to get matched components. If you specify an "H" type gang condenser, coils to suit an "H" gang, and then a dial, not only manufactured by the coil maker, but marked as suitable for "H" type coils, then you have the whole shooting works, and there can't be any mistake. You can even go so far as to use the dial markings as a guide for correct alignment and padder adjustment. The stations will drop into place according to the dial needle, and there is nothing left to worry about.

Some Problems

Unfortunately, however, it is now assumed by the powers-that-be that any modern set must be a dual-waver and that it must use an "H" type condenser. Accordingly, the only modern dials available in such famous brands as Radiokes and R.C.S. are suited only for "H" gangs, and they are all of dual-wave type.

So long as you are building a dual-waver there is no problem, as naturally the "H" gang will be selected on account of its high efficiency and simply by using the correct coils and dial you get correct station settings. But if you want to build a compact portable you will want to use a "G" type gang, as it is much smaller and lighter. You will also make it a straight broadcast set, as short-wave reception is not likely to be too hot with a small aerial or loop used with a portable type of set. What will you do for a dial?

Getting Rid of Short-wave

To get rid of the short-wave station markings is fairly easy. On the cheap dials these markings are painted on to the inside of the escutcheon "glass" (celluloid) and they can be readily scraped off with an old razor blade.

If one of the edge-lit dials is being used, however, the problem becomes a little more difficult. The only way out is to dismantle the glasses, and then scrape away the unwanted markings.

We know of no way of solving the problem of the station markings, however, and the needle can be set to best advantage so that most of the stations are nearly right, and a certain amount of tolerance on the part of the operator of the set is all that is required to have peace.

Gang Design

The way in which the stations fall on the dial is largely dependent on the shape of the plates in the gang condenser.

The "F" and "G" type plates are much the same, and dials and coils suitable for one are O.K. with the other. But the "H" gang has an entirely different shape of plate, and this results in stations being more evenly spaced over the dial.

Loop Aerials

So much for gangs, coils and dials, but whilst on the subject there are a few words which might be said about loop aerials. There are two main types of loops, tuned and un-tuned. If you use an ordinary aerial coil unit, and then use an aerial consisting of a number of turns of wire wound around pegs on the inside of the lid of a portable set you have an un-tuned loop. This is fairly satisfactory, and if at any time greater range is required it is simply a matter of using an external aerial of a short length of wire and coupling in place of the loop.

NEXT ISSUE . .

Full details of two more championship amplifiers, as entered by H. J. Lilley and L. S. Dobson. The first is a dual-channel job and the second a cascaded direct-coupled circuit.

Much greater efficiency and also simpler construction and cheaper cost is obtained by using a tuned loop. In this case the actual inductance of the wire is tuned by the capacity of the first section of the gang condenser, and this resonated circuit completely replaces the normal tuned aerial circuit consisting of the aerial coil tuned by the gang.

The tuning of the inductance of the loop with the capacity of the gang would be simple enough if it were not for the fact that the inductance can be varied by the presence of a mass of iron. For example, the effective inductance of the loop when mounted in free air, well clear of the chassis, is entirely different from its effective inductance when mounted along the metal base of a chassis. Even if mounted in a swinging lid, the inductance may be varied according to the position of the lid.

What you should know about —

LOUD SPEAKER IMPEDANCES

By the Technical Department, Mullard-Australia Pty. Ltd.

IMPEDANCE is the property of opposing or impeding the flow of changing or alternating current.

The voice-coil of a loudspeaker, like everything else, has impedance, but not very much of it — only a few ohms. Passage of pulsating or alternating current through this impedance causes electrical power to be converted to sound power.

If we were to connect the voice-coil directly in the plate circuit of the output valve, we would get very little electrical power converted to sound, because the fluctuations of current are very small.

Greater Impedance

We need a much greater impedance in order to convert efficiently the electrical power to sound. We therefore use a transformer — called the output transformer — which "steps up" the low impedance of the voice coil connected to the secondary, making the primary behave as if it were actually a voice coil of much higher impedance.

The effective impedance of the primary depends of course on the impedance connected to its secondary, and on the square-root of the turns-ratio of the transformer.

The transformer acts in the electrical circuit just as a gear-box does in a mechanical device.

A certain type of power output valve is capable of delivering the maximum power output to a "load" — the loudspeaker — when the load has a particular value of impedance, provided that the output valve is supplied with enough input from the preceding valves. But at full power output the distortion would be excessive, and to keep the distortion within reasonable limits we would have to be satisfied with considerably less than the maximum power output, by reducing the input to the valve. Fortunately, we can choose another value of load impedance which, while enabling almost the maximum output to be obtained, gives the best compromise between power output and distortion; this is the "Optimum load impedance" specified by the valve manufacturer.

The determination of this load impedance is beyond the scope of the amateur experimenter, but he should know what will be the effect of slight departures from the published figure, and what modifications can be made for improved performance under special conditions.

Ideal Conditions

It must be borne in mind that the specified load impedance is a compromise giving the most acceptable result under ideal conditions.

The ideal conditions assume that the load impedance is purely resistive and remains constant for all frequencies.

Actually, neither is ever true in practice; the impedance of a loudspeaker contains reactance as well as resistance, and varies widely over the range of audio frequencies.

The impedance of a speaker is measured at some particular frequency, usually 400 cycles per second. At most other frequencies, higher or lower, the impedance is in general greater.

There is thus no point in attempting

LOUD SPEAKER IMPEDANCES *(continued)*

to be precise in specifying the exact nominal speaker impedance.

Another point to be remembered is that a particular load impedance is specified for the maximum power output consistent with moderate distortion.

Reproducing Musical Programme

In reproducing a musical programme it is only rarely that a large power is required for the volume peaks, and it is surprising how little power is required to give loud volume over the bulk of a programme. It is therefore only at occasional loud passages that it is possible to notice by ear even large departures from the theoretically ideal load impedance.

The effect of different load impedances depends on the class of valve and its method of operation, and the commonest examples of class "A" operation are treated separately:—

Single triode, no feedback.—Increased load impedance will reduce the maximum available output, but will reduce the distortion also. Lower impedance will enable very slightly greater output, with increased distortion.

If the nominal speaker impedance is equal to the recommended load, high and low frequencies will be slightly weakened, with low distortion — a desirable condition.

Push-pull triodes, no feedback.—As the distortion of triodes is largely cancelled in a balanced push-pull circuit, it is possible to reduce the load below the usual figure (which is twice the impedance of a single valve), and thus get slightly greater maximum output without increased distortion.

To allow for some unbalance in the circuit it is advisable to keep the impedance nearly twice that for a single valve.

Output Transformers

In the case of push-pull output transformers and valves we always speak of the total impedance, plate to plate, except in the case of true class "B" operation.

Single pentode or beam valve, no feedback.—Pentodes and beam tetrodes are much more critical than triodes in their load impedance. At full power output the distortion increases rather rapidly as the load is either increased or decreased from the recommended figure, but the distortion with higher impedance is of a more objectionable type than that with lower impedance. Especially as the impedance of most speakers rises above the nominal value at both high and low frequencies, it is better to err on the low side than the high side.

In any case, a variation of 10% from the ideal is unlikely to be noticed on a programme by even the most critical listener.

Push-pull pentodes or beam valves, no feedback.—The type of distortion caused by low load impedance with a pentode is eliminated by perfectly-balanced push-pull, although allowance must be made for some lack of balance.

It is therefore permissible and usually desirable to operate with a load less than twice the load recommended for a single valve.

All types, with feedback.—The use of inverse feedback modifies the properties of output valves so much that it is impossible to lay down any hard and fast rules which would hold for the various degrees of feedback used in practice, especially when the feedback circuit is used also for tone-compensation purposes.

Use Same Load Impedance

In general, the same load impedance should be used as without feedback, but, except at full maximum output, quite large variations of load impedance have very little effect.

Inasmuch as most forms of feedback make the output stage comparatively insensitive to changes of load, the variation of speaker impedance with pentodes is not nearly as serious as without feedback.

Shortwave Review

CONDUCTED BY
L. J. KEAST

★ Latest Advice from Japan ★ Hawaiian Frequency Changed ★ New Announcer at Radio Saigon

After 8 a.m., at my location anyway, it's a gamble if anything of value is to be heard till about 11.

However, those who sacrifice their surf, and possibly dumpers, for a plunge into the short waves will be rewarded by tuning in to the 41-metre band. From 5 a.m. for a couple of hours you can stick to this band and hear at least 10 or 11 stations at anything from very fair to excellent strength and clarity.

Here they are:—

CR6RC, Loanda, 7315kc, 41.01m (M., W. and S.), 5 to 7 a.m.
DJI, Berlin, 7290kc, 41.15m, 6.30 a.m.
JLG, Tokyo, 7285kc, 41.18m, 5 to 7 a.m., or
JVW, Tokyo, 7257kc, 41.38m, 5 to 7 a.m.
DXJ, Berlin, 7240kc, 41.44m.
GSW, London, 7230kc, 41.49m; closes at 8.30 a.m.
2RO-11, Rome, 7220kc, 41.55m, 6.30 to 8.30 a.m.
EJA-9, Malaga, 7220kc, 41.55m.
Radio Espana, San Sebastian, 7210 kc, 41.60m.
Radio Malaga, Malaga, 7120kc, 5 a.m. to 6 a.m.

Latest Advice from Japan

I have shown **2RO-11** and **EJA-9** as the same frequency, but there is a slight difference, just as **YDA**, 7250kc, 41.38m., and **ZHP-3** can be separated.

I have also mentioned **JLG**, 7285kc, but have not heard them yet. The latest advice from The Broadcasting Corporation of Japan lists **JVW**, 7257.5kc, 41.38m, or **JLG**, 7285kc, 41.18m, for Europe from 5 to 7 a.m. It is **JVW** that I am hearing every morning, and a little Japanese girl gives news in French till just on 6 o'clock. Then a male announcer gives station particulars, and refers to **JVW** on 41.34 metres, but I am calling it 41.38 as printed on programme list. He announces "The Radio Voice of Japan" and will tell you the same programme is on **JLG-2**, 9505kc, 31.57m, but this does not seem correct to me, as they are found on **JZI**, 9535kc, 31.46m.

Hawaiian Frequency Changed

This reminds me, I have not heard **JZK**, 15,160kc, 19.79m., since October 27; the 5 to 6 p.m. Hawaiian programme is now taken care of by **JZI**.

With the early fade out of morning stations, with the exception of **WLWO** and **WRUL** on the 25-metre band, Rome hangs out longer than anyone else, that is for good signals, and at 7.15 you have a choice of six wavelengths: 16.84, 19.61, 19.70, 25.40, 31.15, and 41.55 metres, all of which are more or less good, 19.61 and 41.55 being particularly good.

CSW-7, Lisbon, 9740kc, 30.8m, can be relied upon for a good talk in English on Sundays at 6.45 a.m.

New Announcer at Radio Saigon

The little lady at **Radio Saigon** (a new announcer to me), conducting the Listeners' Arranged Session on Saturday, October 26, introduced herself, and I figure her name sounded like Dorothy Vivien. Amongst the records played was one, "Danny Boy." This, she explained, was for her little brother in South Africa.

Maybe there is a very good reason for it, but the changes in frequency adopted by our friends in Chungking make it hard to keep an up-to-date list. Only a few days ago they could be heard, giving news in English at midnight on 9680kc, but now I am told they are operating on 9620kc at this hour, changing there from 11,900 kc just before midnight.

A friend of mine said he heard a Canadian on the 16-metre band at 2 a.m. the other morning, but I suspect a relay of one of the Canadian stations was coming over **WCBX**. Nevertheless, **CKFX**, Vancouver, can be heard at midnight on 6080kc, 49.34m, at very good strength.

Listeners will find the 60-metre band provides a little diversion, and signals from 10 p.m. are excellent. Apart from the Indian stations, good practice in tuning may be had in sorting out the South Americans. The YV's (Venezuelans) talk that quickly I guess my amanuensis would have a fit if she had to take them down in shorthand.

Another corner that is getting all jammed up is round about poor old KGEI, 9670kc, 31.02m. I used to look forward to the news session at 10.30

ALL-WAVE ALL-WORLD DX CLUB

Application for Membership

The Secretary,
All-Wave All-World DX Club,
117 Reservoir Street,
Sydney, N.S.W.
Dear Sir,

I am very interested in dxing, and am keen to join your Club. The details you require are given below:

Name.....

Address.....

[Please print both plainly.].....

.....

My set is a.....

(Give make or type, number of valves, and state whether battery or mains operated)......

.....

.....

I enclose herewith the Life Membership fee of 3/6 [Postal Notes or Money Order], for which I will receive, post free, a Club badge and a Membership Certificate showing my Official Club Number.

(Signed).....

(Note: Readers who do not want to mutilate their copies of the "Radio World" by cutting out this form can write out the details required).

p.m., not that I approved of all their remarks, but I find it impossible at my little shack to copy them now. They are drowned by **VLQ-5**, 9.68mc, 30.99m, who with a terrific signal, and very broad by the way, spread over the popular Frisco transmitter.

Of one thing I am certain, **KGEI** has not yet installed the necessary gear for 50,000 watts, as even in the afternoon the news at 4 from Hollywood is hard enough to hear. No, I am sorry, Mr. Buck Harris, but you will have to do something about it.

IRW, Rome, mentioned last month on approximately 19.37mc, has now moved to 19.50mc, 15.37m.

Advice from the Consul

Receiving advice from the Consulate General of Switzerland that **HBH**, Geneva, 18,480kc, 25.63m, would be in future, on their Friday night broadcasts, conducting their programme in English, I listened-in on Friday, November 8. Tuning in just before the customary hour of the commencement of the special broadcast for the East, viz., 11.43 p.m., I had to wait till 12.15 a.m. (Saturday 9th) for the session to open. An apology was made for the technical hitch which necessitated the delay. Signal, as usual, was very good and every word could be followed with ease. Station details were given in English, slowly and clearly, followed by French. A talk in English on the international situation, commencing with the U.S.A. Presidential elections, was in progress when I switched off at 12.30.

I am sure the innovation will be appreciated, especially by our friends in the West, where, coming through at a much more convenient hour, it can be listened to for its full 80 minutes.

Listeners will by now have noted the D.E.I. stations, **PLP**, 11,000kc, 27.27m, and **PMN**, 10,260kc, 29.24m, are both on the air at 5 a.m., and **PMN** can be heard at 6 a.m., but very weakly.

I have been listening for the last two weeks to try and identify a laddie on approximately 7.31mc, 41m. Just at what time he opens I do not know, but he definitely closes at 6 a.m. with "God Save the King." He says, "This brings us to the end of our programme for to-day. It is now 11 p.m. This is the —— Broadcasting ——." Static and general noise seem to make it impossible for me to catch the call-sign, if given, and the name of the broadcasting station. It is all the more aggravating, when the numbers of the records played can be heard, delivered in the very best English. The time mentioned suggests an African station, but I have no record of anybody in that territory on this wavelength. They are not on the air of a Monday morning, and, strangely enough, I have not heard them for a few days; so it may have been someone testing. Any suggestions?

Don Bell, who will be remembered for his splendid news service from **KZIB** is now with **KZRH** and is heard at different times nightly. By the way **KZRH** close on 9640kc, 31.12m, at 2 a.m., and open straight away on 11,890kc, 25.23m, and remain on the air till 3 a.m.

Morning Stations

For the benefit of those who can hear morning stations later than I can, I am giving hereunder the news times of the Americans:—

WRUL, 11,790kc, 25.45m,: 6.30 and
WRUL, 11,790kc, 25.45m, 6.30 and 7.30 a.m.
WCAB, 15,270kc, 19.65m, 6.55.
WCBX, 9650kc, 31.09m, 6.55.
WLWO, 11,710kc, 25.62m, 8.15..
WGEA, 15,330kc, 19.57m, 7.55.
WGEO, 9530kc, 31.48m, 7.55.
WPIT, 11,870kc, 25.27m, 9 a.m., or may be on 15,210kc, 19.72m.

Listening to **WLWO**, 11.71mc, 25.62m, at 6 a.m. on November 8, the announcer said, ". . . with a power of 75,000 watts." I don't know whether this is a mistake or not, but the excellence of the signal would suggest it was possible, as goodness knows **WRUL**, on 25.45m, at this hour is exceptionally good, and **WLWO** is a trifle better.

Speaking of **WRUL** reminds me that in their news sessions at 6.30 it is also coming over on 19.67 metres, but at my location it is only just audible.

Radio Bucharest, 9.24mc, 32.45m, can just be heard at 6.30 a.m. and news may be given any time between 6.45 and 7 o'clock, the completion of the operatic record apparently being of more importance than the news.

If you should happen to miss the news from London at 8.45 a.m., tune to **VLW-3**, 11.83mc, 25.36, at 9.30 a.m., and you will hear a recorded version.

Somebody was telling me the same programme as **VQ7LO**, on 49.31m, can be heard on 10.73mc, 27.95m, but not at anything like the same strength. They still close at 5.15 or thereabouts, which is just a wee bit too early for me.

STATION PARTICULARS

Under this heading, as space permits, we will give brief details of stations.

AFRICA

Algeria —

TPZ, Algiers (12,120kc, 24.75m), 6.30 to 7.30 a.m.: Irregular.

TPZ-2, Algiers (8960kc, 33.48m), Wednesday and Sunday, 3.30 to 4.30 a.m.

For the purpose of alphabetical record, the above is shown, but I understand that mail is not accepted at present for French Provinces.

Angola —

CR6AA, Lobita (7614kc, 39.39m), Tuesday, Thursday and Sunday, 5.30 to 7.30 a.m. (also on 7177kc, 41.75m): Opens with Portuguese Anthem. Interval signal on 7614 is gong struck three times, while on 7717kc three piano notes are given. Owners: Alvero de Carvalho, P.O. Box 103.

CR6RC, Loanda (11,740kc, 25.55m), Wednesday, Friday and Sunday, 5 to 6.30 a.m. (also on 7315kc, 41.01m), Monday, Wednesday and Saturday, 5 to 7 a.m. Address: Radio Clube de Angola, Caixa Postal 229, Loanda, Angola.

CR6RY, Benguela (10,869kc, 27.60m), 5 to 7 a.m. Irregular. Male announcer in Portuguese. Closes with Portuguese Anthem. Owners: Radio Clube de Benguela.

Egypt —

SUX, Cairo (7865kc, 38.15m), 4.30 to 6.30 a.m., sometimes till 7. Occasionally is heard on SUR (6784kc, 44.24m) at the same time. Arabic used chiefly, but English sometimes on Tuesdays from 6.15 to 6.40. Opens with clock striking. Closes with Anthem. Address: General Secretary, Egyptian State Broadcasting, Radio House, Cairo, Egypt.

French Equatorial Africa —

Radio Brazzaville, Brazzaville (11,950kc, 25.10m): Heard daily from 6.30 to 7 a.m. Just prior to opening most peculiar signal is used. It is something like a metronome. All announcements in French. "Ice Radio Brazzaville" repeated three times. Speaks very slowly. Signal is very loud and clear. Says he broadcasts at 6 G.M.T., 13 G.M.T., and 20.30 G.M.T. (4 p.m., 11 p.m. and 6.30 a.m. Sydney). First heard on October 26 at 6.30 a.m. and since heard at 4 p.m., but signal then is not so strong. Closes with reference to Government General of French Equatorial Africa, and "Bon soir, Mesdames, etc. Vive la France libre, Vive De Gaulle."

WLWO

For weeks I have been moaning that I could not hear **WLWO** of a night. An announcement that I picked up this morning (November 10) does not suggest that we are likely to hear them of a night for some time at any rate. I had tuned in to 25.62 metres, and after being told the progress scores in a football match, the following was heard immediately after the usual station announcement: **"WLWO** will observe the following schedule as and from Monday, November 11 (times to follow are Australian Eastern Standard):—

3 a.m. to 8 a.m., 15.25mc, 19.67m (note slight change in frequency).
8.15 a.m. to 10.45 a.m., 11.71mc, 25.62m.
11.00 a.m. to 4 p.m., 9.59mc, 31.28m.

Well, changing schedules seems to be the prerogative of short-wave stations, but just a little solidity, such as that shown by the splendid transmitter at Lisbon, would cheer me up a bit. Of one thing I am pleased, and that is that they are sticking to the 25-metre band for the breakfast time session. This morning I kept one set on them, and I could hear them till 10 o'clock, so if they work in a news session between 8.15 and, say, 9.30, all will be forgiven. I am also mindful of the fact that they are using 75,000 watts.

KGEI

Most listeners will have found that this popular station, although reception has been erratic of late, is now giving its 3 to 6 p.m. (Sydney time) session on the old frequency of 9530kc, 31.48m. The reason advanced by Mr. Cushen, of N.Z., is that the change was necessary as **WRCA** keep on the air till 4 p.m. Whether this is his idea or the station's explanation he does not say, but the change should suit most localities. The 10 p.m. to 3.10 a.m. session is still going over — 9670kc, 31.02m.

WAR NEWS AROUND THE CLOCK

A Handy Guide for the Shortwave Listener

This revised list has been compiled and brought up to date by L. J. Keast, Short-wave Editor, "The Australasian Radio World," on an Ultimate All-wave Eight.

All of the stations listed have actually been heard in Sydney giving news sessions in English on the wave-lengths given at the times mentioned.

Conditions vary from day to day and time to time, and it is not possible to guarantee that all of the stations listed can be heard every day, but the list should be a valuable guide to those possessors of powerful dual-wave receivers who want to know when and where to listen for best results.

All times are Australian Eastern Standard and were correct at time of going to press.

THE NEW B.B.C. SCHEDULE

AS FROM NOVEMBER 3, 1940

3.30 p.m. to 8.00 p.m.	GRX 30.96, GSA 49.59
4.10 p.m. to 6.00 p.m.	GSC 31.32
4.10 p.m. to 6.45 p.m.	GSB 31.55
4.10 p.m. to 8.15 p.m.	GSI 19.66, GSE 25.29, GSD 25.53
5.45 p.m. to 8.15 p.m.	GSP 19.6
6.15 p.m. to 8.15 p.m.	GSV 16.84
7.00 p.m. to 8.15 p.m.	GSF 19.82
8.40 p.m. to 2.30 a.m.	GSE 25.29
8.55 p.m. to 10.00 p.m.	GSP 19.6
8.55 p.m. to 12.45 p.m.	GSG 16.86
8.55 p.m. to 2.45 a.m.	GSV 16.84
8.55 p.m. to 11.45 p.m.	GSN 25.38
10.15 p.m. to 11.30 p.m.	GSO 19.76
Midnight to 2.30 a.m.	GSF 19.82, GSD 25.53, GSB 31.55 GSA 49.59
Midnight to 8.30 a.m.	GRW 48.82
2.55 a.m. to 5.15 a.m.	GSF 19.82
2.55 a.m. to 8.30 a.m.	GRX 30.96
2.55 a.m. to 8.25 a.m.	GSI 19.66, GSD 25.53
5.00 a.m. to 8.25 a.m.	GSC 31.32
5.30 a.m. to 8.25 a.m.	GRY 31.25
7.00 a.m. to 8.25 a.m.	GSF 19.82
8.42 a.m. to 12.15 p.m.	GSF 19.82
8.42 a.m. to 12.30 p.m.	GSE 25.29
8.42 a.m. to 2.35 p.m.	GSD 25.53
8.42 a.m. to 2.35 p.m.	GSC 31.32
9.25 a.m. to 2.35 p.m.	GSB 31.55

MIDNIGHT

M/N.	Manila	48.46
	Chungking	31.19
	Berlin	19.63
12.05	Formosa	30.95
12.15	Shanghai	25.15
	Berlin (Lord Haw Haw)	19.63
12.30	'Frisco	31.48 or 31.02
	Rangoon	49.94
12.45	Manila	31.35
1.25	Tokyo	19.79
1.30	'Frisco	31.48 or 31.02
1.40	Rome	16.83, 25.40
1.45	Saigon	25.47
1.50	Delhi	25.36, 31.28
2.00	London	19.82, 25.53, 31.55
	Delhi (Relays B.B.C.)	31.28
2.30	Nairobi	49.32
2.45	Rome	19.7, 25.51, 31.15

EARLY MORNING

3.30	Delhi	25.36, 31.28
	Berlin (Lord Haw-Haw)	19.85, 25.49, 31.01
4.00	London	19.66, 19.82, 25.53
	Nairobi (Relays B.B.C.)	49.32
4.30	Berlin (Lord Haw-Haw)	31.38
	Moscow	19.76, 31.51, 49.75
4.50	Rome	16.83, 19.7, 25.40, 31.15
5.00	Berlin (Lord Haw-Haw)	31.38
5.00	Vatican City (Talks Wed. and Sat.)	48.47
5.15	Berlin	25.49, 49.83
	Ankara	31.7
5.55	Lourenco Marques	30.9
6.00	London	48.82
	Lisbon (Talks Wed., Fri. and Suns.)	30.8
	Belgrade (Talks)	49.18
	Moscow	19.76. 25.61, 31.51, 49.75
6.05	Tokyo	25.42, 31.46
6.30	Rome	19.61, 25.4, 31.15, 41.55
6.30	Boston	19.67, 25.45
6.45	Bucharest	32.45
	Berlin (Lord Haw-Haw)	19.85, 31.01
	London	19.66, 25.53, 31.25, 31.32
6.50	Ankara (Talks, Sundays only)	31.7
6.55	New York	31.09
7.00	London (Talk)	19.66, 25.53, 31.25, 31.32
7.15	Berlin	25.49, 31.01, 49.83
7.25	Motala	49.46
7.30	Moscow	19.76, 25.00, 31.51
7.30	Boston	19.67, 25.45
	Cincinnati	19.67
7.55	New York	19.57, 31.48

MORNING

8.30	Rome	16.83, 25.4, 31.15, 41.55
8.45	London	19.82, 25.29, 25.38, 25.53, 31.32
11.00	London	19.82, 25.38, 31.55

AFTERNOON

12.50	Rome	19.7, 25.4, 31.15
1.30	Berlin	19.68, 25.49, 31.22
	London (Radio News Reel)	25.38, 25.53, 31.55 31.32

2.15	London (Talks)	25.53, 31.32 31.55
2.30	London	25.38, 25.53, 31.32, 31.55
3.00	Cincinnati	31.28
	Berlin	19.68, 25.49, 31.22
4.00	'Frisco	31.48 or 31.02
4.15	London (Talks)	19.66, 25.29, 25.53, 31.55
4.15	London	30.96, 49.59
4.30	Rome	19.61, 31.15
	Moscow	19.76, 25.00
4.55	New York	49.02, 49.5
5.00	Berlin	19.56, 25.31, 31.09
	Belgrade	19.69
5.35	Tokyo	19.79
5.45	Berlin (Talks)	19.56, 25.31, 31.09

EARLY EVENING

6.00	London	30.96, 49.59
6.30	London	19.66, 25.53, 31.55
7.00	London	19.66, 19.82, 25.29, 25.53
7.05	Moscow	19.76
7.30	Berlin	16.89
7.45	London (Radio Newsreel)	19.66, 19.82, 25.29, 25.53
7.55	Tokyo	25.6
8.15	Chungking	25.21
8.30	Shanghai	25.15
	Manila	31.35, 49.18
*8.45	Saigon	25.47
9.00	London	16.84, 16.86, 19.60
9.45	London	25.38

NIGHT

10.00	Shanghai	24.83
	Berlin	16.81, 19.56, 19.63
10.15	Ankara	19.74
10.30	'Frisco	31.48 or 31.02
	Chungking	25.21
	Delhi	25.36, 31.28
	Tokyo	25.42, 31.46
10.45	Amsterdam	16.6, 19.71
	Manila	31.35
	Batavia	15.48
11.00	London	16.84, 16.86
	Singapore	30.92
	Penang	49.34
	Hongkong	31.49
11.15	London	19.76, 25.38
11.35	Rome	16.83, 25.4
11.45	Manila	31.12, 31.35
	Bangkok	25.61
	Geneva (Fridays only)	16.23

* Sometimes given at 9 p.m.

The MONTH'S LOGGINGS

ALL TIMES ARE AUSTRALIAN EASTERN STANDARD

AUSTRALIA AND OCEANIA

VLQ-8, Sydney (17,800kc, 16.85m): Good at 4 p.m. (Cushen, Beattie, Knewstubb, Taylor, Rogers).

VLQ-3, Sydney (15,315kc, 19.59m): Understand now discontinued.—Ed.

VLQ-7, Sydney (11,880kc, 25.25m): R8 on all programmes (Knewstubb, Bowser, Nelson, Taylor, Bantow).

VLQ-2, Sydney (11,870kc, 25.27m): R6 in the morning (Rogers, Knewstubb, Gandy, Nelson).

VLR-3, Melbourne (11,850kc, 25.32m): Good all day (Beattie, Knewstubb, Bowser, Nelson, Cushen, Smith, Taylor, Bantow).

VLR-7, Melbourne (11,840kc, 25.33m): Heard well at Mosman (Taylor). Also New Lambton (Beattie) and Enfield (Hallett) (This new transmitter, which opened on Sunday, November 3, is heard at great strength. Schedule is: 6.30 a.m. to 10.15 a.m.; 12 noon to 7.45 p.m. Closes for 15 minutes and opens up as **VLR,** 9580kc, 31.32m, from 8 p.m. till midnight.—Ed.)

VLR-6, Melbourne (11,830kc, 25.36m): Fair (Taylor).

VLW-3, Wanneroo (11,830kc, 25.36m): Good (Beattie, Fitzgerald, Callander, Nelson Gandy, Taylor, Smith). Strong 8.30 p.m. Bad fading at times (Bantow).

VLQ-5, Sydney (9680kc, 30.99m): Strong at 9 a.m. (Beattie). R8 at 10.30 p.m. (Nelson, Bantow, Smith, Taylor, Knewstubb).

VLW-4, Wanneroo (9665kc, 31.04m): Good late at night (Taylor).

VLW-2, Wanneroo (9650kc, 31.09m): Very good at night (Beattie, Nelson, Taylor, Bantow).

VLQ, Sydney (9615kc, 31.2m): Strong at 5 p.m. in programme to A.I.F. in Britain (Schodel, Beattie, Knewstubb, Nelson, Taylor, Smith).

VLR, Melbourne (9580kc, 31.32m): Very good at night (Beattie, Schodel, Knewstubb, Smith, Taylor, Gandy, Rogers, Bowser, Bantow, Nelson, Cushen).

Fiji:

VPD-4, Suva (14,425kc, 20.80m): Good when operating (Taylor).

VPD-2, Suva (9535kc, 31.46m): R7 when closing at 8 p.m. (Knewstubb, Schodel, Keats, Beattie, Rogers, Taylor, Smith, Cushen, Nelson, Bantow). At 7 p.m. failed a lot lately (Gaden).

New Caledonia:

"Radio Pacifique," Noumea: Heard testing on 77 metres at 7 p.m. (Cushen).

AUSTRALIAN OVERSEAS PROGRAMMES

Although schedule has not been made available to me, I understand that as and from Sunday, November 24, quite a number of alterations are to be made in the overseas transmitters.

AFRICA

Mozambique:

CR7BE, Liurenco Marques (9710kc, 30.9m): Very strong between 5.30 and 7 a.m. News in English at 5.55 a.m. (Nelson).

Algeria:

TPZ, Algiers (12,120kc, 24.75m): Can be heard most mornings from 4 till 7 a.m., fair signal (Muller). Can just hear carrier (Gaden).

Belgian Congo:

OPM, Leopoldville (10,140kc, 29.59m): Excellent at 5.30 a.m. (Nelson, Keats, Gaden, Muller). (Still a great signal at Randwick, and must remark on fine type of records played. Schedule is 4.55 to 5.45 a.m.—Ed.)

French Equatorial Africa:

Radio Brazzaville, Brazzaville (11,950kc, 25.10m): Still a fine signal at 6.30 and can be heard also at 4 p.m. (Muller, Nelson, Gaden).

Morocco:

Radio Maroc III., Rabat (11,940kc, 25.13 m): Heard fairly well about 6 a.m. (Muller). I heard them at much better strength from 4 to 4.30 p.m. on Sunday, November 17. (But no sign of Brazzaville to-day).—Ed.

CENTRAL AMERICA

Chile:

San Jose (9600kc, 31.19m): Still going at 10 p.m. (Gaden). Strong signal after **VLQ** closes down (Nelson).

Guatemala:

TGWA, Guatemala (15,170kc, 19.78m): Very good signal on Monday mornings at 8 a.m. (Nelson). (Excellent at Randwick also.—Ed.)

TGWA, Guatemala (9658kc, 30.98m): Still hear till 5 p.m., but signal getting weaker. (Gandy).

TGWB, Guatemala (6460kc, 46.45m): Excellent at 2.30 p.m. **(Cushen).**

TGQA, Quezaltenango (6400kc, 46.88m): Fair at 3 p.m. (Cushen).

Panama:

HP5G, Panama City (11,780kc, 25.47m): Good signal, closes at 1 p.m. (Cushen, Gaden).

HP5A, Panama City (11,700kc, 25.64m): Always good until closing at 2 p.m. (Cushen. Gaden). Weak at 10 p.m. (Gaden).

HP5J, Panama City (9607kc, 31.22m): Heard closing recently with fair signals at 1.40 p.m. (Cushen). Good after 10 p.m. (Gaden, Nelson).

NORTH AMERICA

WCBX, New York (17,830kc, 16.82m): Heard weakly at 11 p.m. (Gaden).

WNBI, Boundbrook (17,780kc, 16.87m): Fair between 9 and 10.30 a.m. (Beattie, Cushen, Gaden). Weak at midnight (Gaden).

WGEA, Schenectady (15,330kc, 19.56m): Good early mornings, poor after 7 (Knewstubb, Keats, Beattie, Bantow, Nelson).

KGEI, 'Frisco (15,330kc, 19.56m): Can be heard in Queensland till after 2 p.m. at varying strength. Best about 1.30 (Gaden, Cushen). Weak in afternoons (Smith).

WLWO, Cincinnati (15,270kc, 19.64m): The star for entertainment till 1 p.m. Mostly R8. News at 9.25 a.m. (Gaden, Nelson). Good at 10 a.m. (Beattie. Cushen). Good in late afternoon (Keats), Since receiving above notes, **WLWO** have been on 11,710kc from 5 a.m. till 4 p.m., and now (10/11/40) I have just heard another schedule. See special article.—Ed.

WCBX, New York (15,270kc, 19.65m): Fair till closing at 9 a.m. (Beattie, Bantow). (**WCBX** is now on 31.09m between 5 and 9 a.m. **WCAB** is on 19.65m from 5 to 9 a.m.—Ed.)

WRUW, Boston (15,250kc, 19.67m): Heard closing at 7.30 a.m. (Keats). Good at 6.30 a.m. (Nelson, Cushen). (I can only hear **WLWO** at this hour; think **WRUW** must have closed this channel.—Ed.)

WPIT, Pittsburg (15,210kc. 19.72m): Good from 11.30 p.m. (Keats, Smith). (Schedule, as far as I know, is: 11 p.m. to 7.55 a.m., with news at 11.55. Have heard them well at 7 a.m.; they change to 25.2m later.—Ed.)

KKZ, Bolinas (13,690kc, 21.90m): Sunday afternoons, good (Keats, Bowser, Taylor).

WNBI, Boundbrook (11,890kc, 25.23m): R5 at 4 p.m. when closing (Knewstubb, Beattie). Good around 2.30 p.m. **(Cushen).**

WPIT, Pittsburg (11,870kc, 25.27m): Excellent at 7 a.m., good at 1 p.m. (Keats, Beattie, Gandy, Knewstubb, Taylor, Smith, Cushen, Gaden). (On 19.72m until 7.55 a.m., and open on 25.27m at 8 a.m.—Ed.)

WLWO, Cincinnati (11,870kc, 25.27m): Very strong at 4 p.m.; not heard on this wavelength at night now (Gandy, N.Z., Cushen, Gaden). (According to schedule printed elsewhere, not listed on this wave-length.—Ed.)

WRUL, Boston (11,790kc, 25.45m): Probably as much a favourite in the mornings as **Saigon** at night. Schedule of this station has changed also since reports came in. As far as I know, it is: 5.30 a.m. to 8.30 a.m., with news at 6.30 and 7.30. Probably also on 6040 kc, 49.65m.—Ed.

WRUW, Boston (11,730kc, 25.58m): Excellent at 4 p.m. (Keats, Beattie). (Not heard at my location at this hour now.—Ed.)

WLWO, Cincinnati (11,710kc, 25.62m): 8.15 to 10.45 a.m. (Hallett, Gaden, Nelson).

KGEI, 'Frisco (9670kc, 31.02m): Reports this month are somewhat confusing, because there is a disparity in the dates, and at this time of the year a week means a lot in daytime reception. However, I think I will be echoing listeners' thoughts when I say how very disappointing this station has been of late. Chased away from here in the afternoon, apparently by **WRCA,** they moved to their old frequency of 9.53mc for the 3 to 6 p.m. session and, lo and behold, **JZI** decide to use this channel for their Hawaiian hour from 5 to 6 p.m. Of a night 9670 is unfortunate, for reasons mentioned elsewhere.—Ed.

WRCA, Boundbrook (9670kc, 31.02m): Not as loud as a month ago (Gandy, Taylor, Gaden, Cushen).

WCBX, New York (9650kc, 31.09m): Fairly strong at 7.30 a.m. (Bantow).

WLWO, Cincinnati (9590kc, 31.28m): R7 when on the air (Knewstubb, Beattie, Gandy, Gaden, Taylor). (As mentioned elsewhere, they will be using this channel from 11 a.m. till 4 p.m., and with their 75,000 watts should be audible part of the time, anyway.—Ed.)

WCAB, Philadelphia (9590kc, 31.28m): Fair at 3.30 p.m. on Sunday (Cushen, Gandy, Beattie). Heard weakly at 9 a.m. (Gaden).

WBOS, Boston (9570kc, 31.35m): Good in afternoon (Smith, Cushen, Fitzgerald).

WGEA, Schenectady (9550kc, 31.41m): Fair in morning (Smith, Fitzgerald).

WGEO, Schenectady (9530kc, 31.48m): R5 at 5.45 a.m. (Knewstubb). Strong at 8.15 a.m. (Bantow, Cushen, Gaden).

KGEI, 'Frisco (9530kc, 31.48m): Now using this channel from 3 to 6 p.m. Mr. Cushen, of Invercargill, says change was made because **WRCA** stays on till 4 p.m. (Hallett, Beattie, Nelson, Gaden).

WCBX, New York (6120kc, 49.02m): R6 at 4 p.m. (Knewstubb).

WCAB, Philadelphia (6060kc, 49.5m): R7 at 4 p.m. (Knewstubb). (Closes at 5 p.m. with news at 4.55 p.m.—Ed.)

WRUL, Boston (6040kc, 49.65m.): Good at 6 p.m. in test with **WRUW** (Cushen). States is on in morning, but not heard (Gaden).

Mexico:

XEQQ, Mexico City (9680kc, 30.99m): Weak on Sunday afternoon (Keats, Gandy, Beattie, Cushen, Nelson).

XEWW, Mexico City (9503kc, 31.57m): R6 at 3 p.m. (Gandy, Knewstubb, Nelson, Cushen, Beattie).

RADIO SAIGON

It is said that a confession is good for the soul. Well, I must admit I have been beautifully had. For one or two nights I was hearing a station on approximately 48.54 metres, which, on account of the volume and strange language, to be followed by French, I had considered for the time being "just another Russian." Imagine my surprise when I discovered the next night it was Radio Saigon. A pal of mine had told me they were on this wave-length, but I was a doubting Thomas, as every week I receive an air-mail programme from Saigon and even for the week November 11 to 17 it distinctly says: 49.05 metres, 6116kc, and 25.46 metres, 11,780kc. Both transmitters carry same programme. Well, that's that, and I feel a wee bit better.

XEXA, Mexico City (6180kc, 48.54m): Opens weakly at 11 p.m. (Rogers).

XEBT, Mexico City (6005kc, 49.96m): Fair at 3.30 p.m. (Cushen).

Chile: **SOUTH AMERICA**

CB1180, Santiago (11,945kc, 25.12m): Excellent in afternoons (Cushen).

CB1170, Santiago (11,700kc, 25.64m): Closes at 3 p.m. (Knewstubb, Cushen).

CB1174, Santiago (11,740kc, 25.55m): Closes at 4 p.m., "Marching Thru Georgia" (Cushen).

CB970, Valparaiso (9730kc, 30.83m): Heard at 10.30 p.m. (Keats). On Saturdays till 3 p.m. (Cushen).

Colombia:

HJCF, Bogota (9710kc, 30.9m): Heard weakly at 7.30 a.m. (Keats).

HJCT, Bogota (9630kc, 31.15m): Good till closing at 2.30 p.m. (Cushen).

Ecuador:

HCJB, Quito (12,460kc, 24.08m): Still audible in early mornings, but not as good as previously (Smith). Always reliable at noon (Cushen).

HC2ET, Guayaquil (9195kc, 32.63m): Still hear on occasions, closing at 2 p.m. with English announcements and Ecuadorian March (Cushen).

HC2W, Guayaquil (9130kc, 32.86m): R6 when closing at 3 p.m. Announced in English would be back on the air again at 10 a.m., their time, relaying a football match (Knewstubb). Weak (Cushen).

Peru:

OAX4R, Lima (15,150kc, 19.81m): Veri to hand on "Radio National" card (**OAX4Z-T**) (Cushen).

OAX4T, Lima (9560kc, 31.38m): R6, but poor modulation (Cushen).

OAX4J, Lima (9340kc, 32.15m): R5 at 2 p.m. (Knewstubb, Cushen).

OAX4G, Lima (6190kc, 48.47m): Good at 3 p.m. (Bowser, Rogers, Knewstubb).

OAX4Z, Lima (6080kc, 49.34m): Still being heard on Wednesdays only, between 7 and 8 p.m. (Gandy, N.Z.). Heard on occasions in parallel with **OAX4T** (Cushen, N.Z.).

Burma: **THE EAST**

XYZ, Rangoon (6007kc, 49.94m): Very good from 11 p.m. (Nelson, Taylor, Smith).

China:

XGOX, Chungking (15,190kc, 19.75m): Fair at 5.30 p.m. (Gandy, Beattie). Very good (Smith, W.A.). Can hear **XGOX** clearly at 12.30 p.m. (Gaden).

FFZ, Shanghai (12,090kc, 24.83m): If free of interference, quite good (Nelson, Gaden, Gandy, Schodel, Rogers).

XGRX, Shanghai (11,910kc, 25.15m): Better late at night than early evening (Schodel, Rogers, Gandy, Beattie, Keats). Have heard as early as 5 p.m.. but weak (Smith, W.A.).

XGOY, Chungking (11,900kc, 25.21m): Very good nightly (Gandy, Keats, Beattie, Knewstubb, Schodel, Smith, Bantow, Nelson, Gaden, Hallett).

XMHA, Shanghai (11,845kc, 25.33m): Fair to good (Smith, Fitzgerald, Nelson, Gaden).

XGOK, Canton (11,650kc, 25.75m): Good from 8 to 10 p.m. (Schodel, Nelson, Keats). News at 10.30 p.m. (Hallett). Spoilt by C.W. (Gaden).

XPSA, Kweiyang (6980kc, 42.98m): Think I am hearing this one at 6 a.m.. Signal is very poor (Gaden).

XHHB, Shanghai (7970kc, 37.6m): Fairly strong at 9.30. Bad KRM (Bantow).

Dutch East Indies:

PMA, Bandoeng (19,375kc, 15.48m): Very strong signal and delightful tone (Gaden, Taylor, Nelson). (I concur.—Ed.)

YDC, Bandoeng (15,150kc, 19.80m): Excellent at 10 p.m. (Keats, Schodel, Gaden, Beattie, Rogers, Taylor, Smith, Bantow, Nelson).

PLJ, Bandoeng (14,630kc, 20.51m): Good at night (Nelson, Gaden, Beattie, Smith, Taylor). (Opens at 7.30 p.m. at quite good strength.—Ed.)

PLP, Bandoeng (11,000kc, 27.27m): R6 at 5 a.m., good at night (Keats, Schodel, Knewstubb, Bowser, Taylor, Smith, Bantow, Nelson). Still heard at 10 a.m. (Gaden).

PMN, Bandoeng (10,260kc, 29.24m): Bit weaker at 5 a.m. than **PLP** (Knewstubb, Schodel). Fair at night (Nelson, Gaden, Gandy, Keats, Smith, Taylor, Schodel, Bantow). Dr. Gaden still hears this station also at 10 a.m.

YDB, Soerabaya (9550kc, 31.41m): Being heard again, but weakly (Smith, Taylor, Nelson).

YDA, Tandjonpriok (7250kc, 41.38m): Very good at night; sometimes gives same programme as **PLJ** (20.51) (Smith). Weak to poor at 9.50 p.m. (Schodel, Nelson).

YDX, Medan (7220kc, 41.55m): Weak at 9.55 p.m. (Schodel, Taylor, Smith, Nelson).

YDE-2, Solo (4810kc, 62.37m): Good signal (Taylor).

MORE RUSSIAN STATIONS

In last issue I mentioned a few new Russian transmitters, and Mr. Knewstubb, of Lyttleton, N.Z., adds a few more to the list. Call signs are unknown, but here are the wavelengths:—

19.6m, 20.33m, 24.63m, classed as R4, while R7 is given to 20.38m, 21.55m, 22.67m. All opened with the "International" at 4 p.m. A man announced in German, while a woman spoke in English and French. The merry throng were accompanied by our old friend, **RNE,** 25m.

YDA, Tandjonpriok (3040kc, 98.68m): Good at night (Taylor).

French Indo-China:

Radio Saigon, Saigon (11,780kc, 25.47m): Excellent always, all ways (Knewstubb, Keats, Schodel, Rogers, Fitzgerald, Gandy, Bowser, Beattie, Taylor, Nelson, Gaden, Callander, Cushen, Hallett). (On November 6 they did not open until 8.45 p.m., and the new lady announcer said, "Good evening, everybody; we'll have fifteen minutes' music and then I will read the afternoon news.—Ed.)

Radio Saigon (6180kc, 48.54m): Heard at terrific strength at 9 p.m. on same programme as 25.47m. See article elsewhere.—Ed. Good (Nelson).

Hongkong:

ZBW-3, Hongkong (9525kc, 31.49m): Excellent (Smith, Cushen, Knewstubb, Rogers, Keats, Beattie, Schodel, Gandy, Nelson).

India:

VUD-3, Delhi (15,290kc, 19.62m): Poor, but can hear at 2.25 p.m. (Gaden, Smith, Rogers). Not heard lately (Gandy, N.Z.).

VUD-3, Delhi (15,160kc, 19.8m): Mr. Knewstubb got a letter from All India Radio, and they show a station as mentioned here. Is anyone hearing this?—Ed.

VUD-4, Delhi (11,830kc, 25.36m): Very good from 10 p.m. (Bantow, Smith, Keats. Beattie, Rogers, Hallett, Gaden, Nelson).

VUD-2, Delhi (9590kc, 31.28m): Very good at 10.30 p.m. (Beattie, Schodel, Keats, Knewstubb, Bantow, Smith, Rogers, Gandy, Gaden, Nelson).

Japan:

JHV, Tokyo (14,600kc, 20.55m): Very good some nights at 6 p.m. (Gandy). Strong at night (Smith, Keats, Rogers).

JZK, Tokyo (15,160kc, 19.79m): Fair volume in English at 11 a.m. (Gaden, Nelson). (This is a special session for Eastern Districts of North America.—Ed.) This station was putting over the Hawaiian hour from 5 to 6 p.m., but it is now found on **JZI.**

JLG-4, Tokyo (15,106kc, 19.86m): Opens at 11 p.m.

JZJ, Tokyo (11,800kc, 25.42m): Strong at 6.35 a.m., excellent at 10.30 p.m. (Schodel, Keats, Bantow, Gandy, Nelson, Smith, Gaden, Beattie, Hallett). (Understand schedule is: 7.30 to 8.30 a.m. for South American countries; 3 to 4.30 p.m. for Pacific Coast of North America; 10 p.m. to 12.30 a.m. for China and South Seas. News at 10.30 p.m. Testing from 8.30 to 9.25 p.m. for Australia and N.Z. See article elsewhere.—Ed.)

MTCY, Hsinking (11,755kc, 25.48m): Fair at 9 p.m. (Bantow, Nelson).

JVW-3, Tokyo (11,720kc, 25.6m): Strong to excellent (Schodel, Knewstubb, Beattie, Bantow, Cushen, Gandy, Nelson). News at 7.55 p.m. (Gaden).

LOGGINGS *(continued)*

JIB, Taiwan (10,535kc, 28.5m): Weak at nights (Smith). (I have a communication from Japan saying they give the news in English at 7.55 p.m., together with **JVW-3** (25.6m), but I have never heard them at this time.—Ed.)

JDY, Dairen (9925kc, 30.23m): Just audible (Schodel). Fair at night (Smith).

JIE-2, Tyureki, Taiwan (9690kc, 30.95m): Poor at midnight (Knewstubb).

JZI, Tokyo (9530kc, 31.46m): Good at 6.45 a.m. and 5 p.m. (Cushen, Beattie, Gaden). Strong at 10.30 p.m. (Bantow, Cushen, Smith, Schodel, Gaden, Nelson). Schedule: for South-west Asia, 1 to 2 a.m.; for Europe, 5 to 7 a.m.; for Hawaii, 5 to 6 p.m.; for China and South Seas, 10 p.m. to 12.30 a.m.

JVW, Tokyo (7257.5kc, 41.38m): R9 at 6 a.m. (Gaden).

MTCY, Hsinking (6125kc, 48.98m): Good at 9 p.m. (Schodei, Gandy, Smith, Nelson).

Malay and Straits Settlements:

ZHP-1, Singapore (9705kc, 30.92m): Good (Keats, Knewstubb, Bantow, Gandy, Smith, Nelson, Beattie, Schodel).

ZHP-3, Singapore (7250kc, 41.38m): 7.40 p.m. to 12.40 a.m. (Beattie, Cushen, Gaden, Nelson). Uses a lot of French.

WITH THE REPORTERS

I am truly grateful to the large number of reporters who have sent particulars of loggings for this issue. Those who have helped this month are:—

OFFICIAL OBSERVERS —

Wm. Bantow, Edithvale, Vic.
H. A. Callander, Hobart, Tas.
A. T. Cushen, Invercargill, N.Z.

AND —

A. Beattie, New Lambton, N.S.W.
M. Bowser, Chullora, Sydney.
J. J. Fitzgerald, Aux. Hospital, Sydney.
Dr. Gaden, Wallumbilla, Q.
N. E. Gandy, Wellington, N.Z.
R. Hallett, Enfield, Sydney.
B. W. Keats, Launceston, Tas.
E. Knewstubb, Lyttleton, N.Z.
S. I. Nelson, Cairns, Q.
M. Rogers, Hunter's Hill, Sydney.
C. Schodel, Brisbane, Q.
P. L. Smith, Dunnsborough, W.A.
R. Taylor, Mosman, Sydney.

In order to publish Xmas issue before the holidays, we would appreciate notes by December 4.

ZHJ, Penang (6090kc., 49.26m): Very poor at 9 p.m. (Schodel, Smith, Nelson). Heard well in N.Z. by Mr. Cushen at 9 p.m.

Philippines:

KZRH, Manila (11,890kc, 25.23m): 2-3 a.m. daily. Mailbag Session on Mondays. Reports asked for (Hallett).

KZRH, Manila (9640kc, 31.12m): Strong (Knewstubb, Schodel, Bantow, Beattie, Keats, Gandy, Callander, Gaden, Nelson). Mr. Smith, in Dunnsborough, W.A., hears them as early as 3.45 p.m., and Dr. Gaden hears news in "American" at 6 p.m.

KZRM, Manila (9570kc, 31.35m): Can only be classed as fair now (Smith, Schodel, Gaden, Keats, Beattie, Gandy, Knewstubb, Nelson). (This is the usual thing at this time of the year. Some find **VLR** in early part of night interferes.—Ed.)

KZIB, Manila (9500kc, 31.58m): Good (Schodel, Keats, Knewstubb, Cushen, Smith, Beattie, Gandy, Gaden, Nelson).

KZRF, Manila (6140kc, 48.86m): Loud but noisy (Gandy, Knewstubb, Smith, Nelson, Bantow).

KZRC, Cebu (6100kc, 49.18m): Good and strong (Knewstubb, Cushen, Smith, Schodel, Nelson, Rogers).

KZIB, Manila (6040kc, 49.67m): Poor (Knewstubb, Schodel, Smith, Cushen, Nelson).

Thai:

HSP6, Bangkok (11,715kc, 25.63m): Heard nightly except Monday. Reception is generally spoilt by Old Man Morse (Schodel, Rogers, Keats, Smith, Nelson).

GREAT BRITAIN

As usual, Daventry is giving us an excellent service, and just to be a little more chummy, now tell us the names of those who read the news.

The Pacific Radio News-Reel is a splendid feature, and another of my favourites is "News from Home," given every Monday night by Howard Marshall.

In November issue I referred to Daventry as the yard-stick by which all signals were measured. I venture to suggest that the B.B.C. technique is the standard of programme that all broadcasters desire to attain.

All transmitters are classed as "This is London Calling."

GST (21,550kc, 13.92m): Good in Transmission 2 (Beattie, Gaden).

GSJ (21,530kc, 13.93m): Patchy at night (Beattie, Rogers, Fitzgerald, Nelson, Gaden).

GSH (21,470kc, 13.97m): O.K. (Beattie, Rogers, Gaden).

On Wednesday, November 13, I could hardly hear any of the 13-metre transmitters. To make doubly sure, I turned another set on, but still no volume. Did anyone else notice this?

GSV (17,810kc, 16.84m): Good from 6.15 to 8 p.m., splendid from 8.55 p.m. till after midnight (Gaden). Actually on till 2.45 a.m.

GSG (17,790kc, 16.86m): Opens at 8.55 p.m. and is used for a lot of foreign talks. Closes at 12.45 a.m.

GSP (15,310kc, 19.6m): Good in late afternoon (Beattie, Gaden). Good in evening (Schodel).

GSI (15,260kc, 19.66m): Good in afternoon (Schodel, Beattie, Gandy, Nelson). Good at 6.45 a.m. for news (Gaden).

GSF (15,140kc, 19.82m): Excellent on all schedules (Beattie, Schodel, Gandy, Gaden).

GSE (11,860kc, 25.29m): Good in afternoon (Gaden, Gandy, Nelson, Schodel, Fitzgerald, Beattie).

GSD (11,750kc, 25.53m): Good at 2.30 p.m., and right through from 4.10 till 8.15 p.m. (Schodel, Gandy, Fitzgerald, Bowser, Rogers, Nelson, Gaden, Beattie).

GSN (11,820kc, 25.38m): Can be followed at 9 p.m. (Gaden).

GRX (9690kc, 30.96m): Good at 4 p.m. (Beattie, Fitzgerald, Gaden, Nelson).

GRY (9600kc. 31.25m): Good in morning (Beattie, Gandy, Fitzgerald, Gaden).

GSC (9580kc, 31.32m): Good at 6.30 a.m. and in afternoon (Beattie, Schodel, Gaden).

GSB 9510kc, 31.55m): Good in afternoon (Gandy, Beattie, Schodel, Nelson). Good at 2 a.m. (Gaden).

GSW (7230kc, 41.49m): Loud at 4 p.m. (Gandy). Poor at 6.30 a.m. (Gaden).

GRW (6145kc, 48.82m): Best 49m signal in a.m. (Gaden).

GSA (6050kc, 49.59m): Can be heard in morning, but noisy now (Gaden).

EUROPE

France:

Paris —— (15,243kc, 19.68m): From 11 a.m. to 2.25 p.m., easily followed announcing in English (Gaden, Beattie). 7.15 p.m., poor, but strong by 8 p.m. (Schodel).

Germany:

All transmitters are taken as being in Berlin.

DJH (17,850kc, 16.81m): Good from 6 p.m. (Beattie).

DJE (17,760kc, 16.89m): Good from 6 p.m. (Beattie, Gandy, Rogers).

DJR (15,340kc, 19.56m): Good whenever on (Gandy, Beattie, Rogers, Callander, Bowser, Schodel).

DJQ (15,280kc, 19.63m): Excellent at night and strong in early evenings (Beattie, Schodel).

DXT (15,230kc, 19.70m): Good at 6.50 a.m. and 5.15 p.m. (Schodel).

DJL (15,110kc, 19.85m): Strong at night but weak in News in English at 6.45 a.m. (Schodel).

DJP (11,855kc, 25.31m): Good in afternoons (Beattie). Weak at 10 p.m. in English news (Schodel).

DJZ (11,800kc, 25.42m): Fair at 10 a.m., very good at 1.30 p.m. (Gandy).

JZJ, JAPAN

With a thoroughness for which they must be commended, The Broadcasting Corporation of Japan have been testing, and intend to continue for several weeks, on 25.42 metres. The test on 11,800kc from 8.30 to 9.25 p.m. is to find if this channel will be satisfactory for a regular service to Australia and New Zealand, to be known as the Australian hour, which it is hoped to put into operation, commencing January 1, 1941.

While all Japanese transmitters are more or less excellent, they have, I should say, made a happy choice in selecting **JZJ,** the volume and quality of the experiments so far heard being splendid. An invitation is extended to assist in the programmes to be provided, so it's up to the Australian and New Zealand listeners to forward suggestions, at the same time as remarking on reception, which information is eagerly awaited in Tokyo.

DJD (11,770kc, 25.49m): Good at 2 p.m. (Beattie). Good at 6.40 a.m. (Schodel).

DJX (9675kc, 31.01m): Good at 6.30 a.m. and also at 4 p.m. (Gandy, Schodel).

DJW (9650kc, 31.09m): Good in afternoons (Beattie).

DJN (9540kc, 31.45m): Not heard lately (Gandy).

DXM (7270kc, 41.27m): News in English at 6.30 a.m. (Gaden).

Holland:

PCV, Amsterdam (18,070kc, 16.6m): O.K. at 10.45 p.m. when not spoilt by noise (Rogers, Callander, Gaden).

PCJ-2, Huizen (15,220kc, 19.71m): At 10.20 p.m., good (Schodel, Gaden, Hallett). Strong at 11 p.m., but bad carrier (Bantow). (Generally bad noise on top as News starts at 10.45 p.m.—Ed.)

Italy:

All transmitters counted as at Rome.

IRW (19,500kc, 15.37m): Very good at 8.45 p.m. (Gaden, Nelson). Note change in frequency.—Ed.

2RO-8 (17,820kc, 16.83m): Good at 9.30 p.m. (Nelson, Keats). News at 11.35 p.m. (Gaden).

2RO-20 (17,780kc, 16.87m): Good at 4 p.m. (Beattie, Gandy).

2RO-6 (15,300kc, 19.61m): Good a.m. and p.m. (Keats, Beattie, Gandy).

2RO-14 (15,230kc, 19.7m): Good in mornings (Beattie).

2RO-4 (11,810kc, 25.40m): Strong at 6.30 a.m. in news (Bantow, Beattie, Gandy, Nelson, Gaden). (One of the best morning stations for volume and clarity.—Ed.)

2RO-15 (11,760kc, 25.51m): Very good at 12.30 p.m. (Gandy).

2RO-3 (9635kc, 31.15m): Strong at 6.35 a.m. (Schodel, Rogers, Nelson, Bantow, Gaden). Good in afternoon (Beattie, Gandy, Gaden).

2RO-11 (7220kc, 41.55m): Just audible at 6.25 a.m. (Schodel, Bantow, Gaden).

Vatican City:

HVJ (15,120kc, 19.84m): Heard Fridays from about 4.15 to 4.40 p.m. (Beattie).

HVJ (6190kc, 48.47m): R6 at 5 a.m., but often "jammed" (Rogers).

Portugal:

CSW-5, Lisbon (11,040kc, 27.17m): R7 at 5.30 a.m. (Schodel, Knewstubb, Gaden, Keats).

CSW-7, Lisbon (9740kc, 30.80m): Excellent (Keats, Bantow, Schodel, Nelson). Lisbon is certainly one of the old reliables.—Ed.

Spain:

EAQ, Madrid (9860kc, 30.43m): R4 at 5 a.m. (Knewstubb, Smith). Weak at 7 a.m. (Keats, Nelson). (I concur.—Ed.)

EAJ-9, Malaga (7220kc, 41.55m): This station can be heard most mornings at fair strength.

Radio Espana, San Sebastian (7210kc, 41.6m): Sometimes heard at same time as **EAJ-9.**

Radio Malaga, Malaga (7120kc, 42.1m): This station used to be heard from 5 to 6 a.m. and sometimes till 7.

Yugoslavia:

YUG, Belgrade (15,240kc, 19.68m): Very good from 5 to 6 p.m. (Nelson, Keats, Gaden, Beattie).

YUC, Belgrade (9500kc, 31.56 m): Fairly strong at 6.30 a.m. (Bantow, Gaden). (This wave-length will probably be better than **YUB,** 49.18, at this hour.—Ed.)

YUB, Belgrade (6100kc, 49.18m): R4 at 5 a.m. (Knewstubb, Gaden).

Russia:

Unless otherwise shown, location is taken as Moscow.

—— (18,540kc, 16.81m): Heard from 4-4.30 p.m. all in French. Noisy and only fair. Better at 9.30 p.m. (Gaden).

—— (15.600kc, 19.23m): Heard Moscow here, which is a new one to me. They were giving a description of a march past, and the various units, accompanied by bands, received a terrific ovation from the intensely crowded Red Square. Now and again the same programme came over the 19.47 outlet, but more English seemed to be coming from the new chap.

RW96 (15,410kc, 19.47m): R5 at 7.55 p.m. (Callander, Gaden). Good night station (Smith, Beattie).

RW96 (15,180kc, 19.76m): Good at 5.30 p.m. and excellent at night (Beattie, Schodel, Knewstubb, Gaden). Good when giving exercises in afternoon (Smith, Gaden).

RWG (14,720kc, 20.38m): Announces in English at 9.15 p.m. (Knewstubb, Hallett).

RNE (12,000kc, 25.00m): Good in afternoon and night (Keats, Schodel, Rogers, Gaden, Smith, Beattie).

RNE (11,900kc, 25.21m): R6 at 5.15 a.m. (Knewstubb).

RW96 (11,752kc, 25.6m): R max. at 9.15 a.m. Only European, except Rome, to be heard at this hour on this band (Gaden).

RVG (11,640kc, 25.77m): R4 at 5.30 a.m., good at 9.30 p.m. (Gandy).

—— (9560kc, 31.36m): Very loud at 9.50 p.m., spoils **KZRM.**

RW96 (9520kc, 31.51m): Good at 6.25 a.m. (Schodel, Bantow, Beattie, Gandy, Gaden).

—— (6720kc, 44.64m): Mr. Bantow, of Melbourne, is hearing a station just about here at 7.30 p.m. which he thinks is a Russian. Signal is only fair.

RV15, Khabarovsk (4250kc, 70.59m): Loud, but noisy at night (Gandy).

Sweden: **SCANDINAVIA**

SBT, Motala (15,155kc, 19.8m): Heard in church relays on Sundays at 8 p.m. (Cushen, Nelson).

(Continued on page 28)

LOGGINGS *(continued)*

SBP, Motala (11,705kc, 25.63m): Same remarks as **SBT** (Cushen, Nelson).

Norway:

LKQ, Oslo (11,730kc, 25.58m): Still fair at 4 p.m. (Keats).

MISCELLANEOUS

Canada:

CJRX, Winnipeg (11,720kc, 25.60m): Rather weak now around 4.30 p.m. (Gandy). (Can't hear him at Randwick.—Ed.)

CFKX, Vancouver (6080kc, 49.34m): Still reliable, but has a whistle now (Cushen). (Can be heard at midnight.—Ed.)

Iran:

EQC, Teheran (9680kc, 30.99m): Good at midnight (Cushen).

EQB, Teheran (6155kc, 48.74m): Good at 6 a.m. (Cushen).

Switzerland:

HBH, Geneva (18,480kc, 16.23m): Very good on Friday nights; announces and talks in English (Keats, Fitzgerald, Gaden). Reports to the Consulate General of Switzerland, 117 Pitt Street, Sydney, would be appreciated. This session is intended for The East, but the change to English should be welcome.

Radio Suisse, Schwarzenburg (11,870kc, 25.28m): Now being heard quite well from 10 p.m. (Gaden, Rogers, Bowser).

Radio Suisse, Schwarzenburg (6165kc, 48.66m): Still putting in a good signal of a morning, but not as strong as previously (Gaden).

Turkey:

TAQ, Ankara (15,195kc, 19.74m): Opens at 2.30 p.m. (Gaden). Can be heard till 5 p.m. (Cushen). Strong at 10 p.m. (Schodel, Nelson). (Gives news at 4.15 and 10.15.—Ed.)

TAP, Ankara (9460kc, 31.70m): R7 every morning (Bantow, Beattie, Rogers, Schodel, Knewstubb, Gaden). (Schedule is: 1 a.m. to 7.30 a.m., with news at 5.15, and on Sundays a talk is given at 6.50.—Ed.)

OUTPUT METER

Owing to suitable meters being unavailable at present, the article on output meters, promised for this issue, has been held over for a month or two until such time as supplies are available.

WEST INDIES

COGF, Matanzas (11,940kc, 25.13m): Good in afternoon (Smith, Gandy).

COCQ, Havana (11,570kc, 25.93m): Fairly strong at 7.15 a.m. (Bantow). Weak in afternoon, good at night (Rogers, Keats, Gandy). Not heard recently (Gaden).

COHI, Santa Clara (11,500kc, 26.08m): Weak at 1.30 p.m. (Knewstubb, Nelson, Smith). Best Cuban at night (Gaden). (Are quite loud at 6.20 a.m.—Ed.)

COCM, Havana (9830kc, 30.51m): Fair signal nightly (Nelson).

COCH, Havana (9440kc, 31.78m): Weak at 10 p.m. (Keats, Gandy, Cushen).

COCX, Havana (9200kc, 32.61m): Weak at 10 p.m. (Keats). Only fair at 2 p.m. (Cushen).

COBX, Havana (9030kc, 33.32m): Fair at 3 p.m. (Cushen).

COCQ, Havana (8830kc, 33.98m): Weak at 1 p.m., but good at 9.30 p.m. (Knewstubb, Gaden, Nelson, Keats).

COCO, Havana (8700kc, 34.48m): Announces in English at 3 p.m. (Knewstubb). Excellent at 3 p.m. (Cushen). Fair at 10 p.m. (Keats).

COHI, Santa Clara (6450kc, 46.5m): R5 at 3.30 p.m. (Smith, Knewstubb, Nelson).

COCQ, Havana (6360kc, 47.14m): Good, afternoon and night (Knewstubb, Bantow).

All-Wave All-World DX Club New Members

AW578DX	A. E. Slater	40 Kernan St., Nth. Essendon, Vic.
579	J. Green	8 Ray Avenue, Vaucluse
580	W. M. Jackson	9 Elizabeth St., Tighe's Hill, Newcastle, N.S.W.
581	R. Collins	Biala, via Gunning, N.S.W.
582	H. R. Delarue	4 East Parkway, Reade Park, S.A.
583	J. Murray	C/- A. D. Burness, "Braemar," Wolseley Pk., Wagga.
584	J. W. McNamara	73 South Coast Rd., Coledale, N.S.W.
585	F. U. Wasley	Cottell St., Hyde Park, Townsville, Q'ld.
586	A. Bryce	Bridge St., Chelmer, Q'ld.
587	W. J. Hoffman	27 Gilbert St., Goodwood, Adelaide, S.A.
588	L. Walker	Fraser Rd., Applecross, W.A.
589	L. J. Seidel	Drake St., Morley Park, W.A.
590	K. Corcoran	"Weeroona," Moonbooldool, N.S.W.
591	R. J. Smith	No. 1, "Wyncroft," 104 Alfred St., Milson's Point.
592	G. S. Tingley	"Santiago," Hughes St., Potts Point, N.S.W.
593	Thomas M. Moss	570 Oak Drive, Hapeville, Georgia, U.S.A.
594	L. C. Edwards	32 Parker St., Bassendean, W.A.
595	E. I. Noble	Barmera, S.A.
596	C. L. Thorpe	2 Davey St., Parkside, S.A.
597	E. J. Stanke	31 Bertha St., Mount Gambier, S.A.
598	R. S. Amos	17 Brooker St., Knoxville, S.A.
599	E. A. Isaacs	43 Tupper St., Marrickville, N.S.W.
600	A. W. Schilling	Nott's Well, S.A.
601	W. D. Brennan	842 Railway Cottage, Merredin, W.A.
602	B. Hamley	Albion Street, Warwick, Q.
603	L. E. Patison	44 Lander's Road, Lane Cove, N.S.W.
604	C. J. Reed	389 Geelong Rd., West Footscray, Vic.
605	A. G. Dix	43 Combarton St., Box Hill, E11, Vic.
606	R. Goodrich	Shirley St., Byron Bay, N.S.W.
607	W. H. Argent	Boston St., Port Lincoln, S.A.
608	R. S. Carman	43 Brooker Terrace, North Richmond, S.A.
609	C. F. Graves	Ringarooma, Tas.
610	B. R. Parkes	"Cotswold," Woodstock, via Blayney.
611	J. W. Horn	23 Kier Avenue, Hurlstone Park, N.S.W.
612	F. R. Bell	"Keuroma," 9 Thornton St., Five Dock.
613	K. R. Collishaw	123 Cheapside St., Maryborough, Q.
614	R. J. McDonell	56 Oberon St., Randwick.
615	A. E. Moore	18 Brown Street, New Farm, N1, Q.
616	H. F. Buggins	Castle Rd., Wootton, Woodstock, Oxford, Eng.
617	J. Shugg	36 Elm St., Northcote, N16, Vic.
618	J. G. Bartlett	33 Arnold St., Underdale, S.A.
619	L. J. Praske	Burnett Street, Nanango, Q.
620	B. Attwater	22 Carr St., Waverton, N.S.W.
621	W. J. McGrath	"Enda Vale," Mosman St., Charters Towers, Q.
622	R. Davis	216 Elizabeth St., Croydon, N.S.W.
623	E. E. Seward	102 Denison St., Newtown, N.S.W.
624	K. Whitley, C/r Dirrawan Gardens and Currong St., Reid, A.C.T.	
625	A. Beattie	Ridgeway Rd., New Lambton, N.S.W.
626	W. J. Paul	Commonwealth Bank, Barrack St., Sydney.
627	M. Foster	Mount Vincent, via East Maitland.
628	J. M. Edwards	Saw Mill, Cattai, via Windsor, N.S.W.
629	B. Richardson	Parry St., Charleville, Q.
630	S. T. Scott	Glen Thompson, Vic.
631	J. Hendry	573 Chapple Lane, North Broken Hill.
632	H. Tesch	Plimsoll St., Greenslopes, SE2, Q.
633	S. L. Dunstan	Blyth, S.A.
634	M. Madden	8 Daphne St., Botany.
635	L. G. Gray	8 Mess, H.M.A.S. Perth.
636	R. Jennings	134 Arturton Rd., Northcote, N16, Vic.
637	L. Carswell	Deloraine, Tas.
638	Kenneth B. Mitchelhill, "Ingleword," Muscle Creek, Muswellbrook.	
639	William Ryan	Wallaville, via Bundaberg, Q.
640	William Carlyle Johnston	High St., Coff's Harbour.
641	J. G. Walsh	39 Murphy St., Wangaratta, Vic.
642	P. W. Brunt	1 Dorris St., North Sydney
643	Richard Nightingall	79 Mount St., Heidelberg, N22, Vic.
644	J. W. Lauder	Box 20, P.O., Tumbarumba, N.S.W.
645	A. L. Flegg	Xavier Grove, East Preston, N19, Vic.

TRADE PARADE

RAYMART RANGE AT JOHN MARTIN

Throughout the many years that Raymart Craft-a-creed short-wave components have been available to Australian radio enthusiasts, they have time and again proved their worth as quality lines. However, with the international situation as it is, and Raymart products being wholly manufactured in England, it is very likely that the well-known name of Raymart will be missing from the Australian market in the very near future.

John Martin Pty. Ltd., of 116 Clarence Street, advises that at present they have practically a full stock of the Raymart range, and they strongly recommend that all "Radio World" readers needing short-wave components to place their order without delay. With short-wave reception becoming more and more popular every day, there is bound to be a great demand on short-wave equipment, and stocks cannot possibly hold out.

For details of the Raymart range, see John Martin's advertisement in this issue, or write to them direct. Situated at 116 Clarence Street, Sydney, John Martin Pty. Ltd., "The Friendly Wholesaler," will be pleased to show you the full Raymart range, apart from any other items in the radio and electrical stock.

City Store's Many Years in Radio

A radio landmark about Sydney is the premises of the Radio Supply Stores at No. 7 Royal Arcade. One of the pioneer radio firms to stock components for the Modern Marvel many years ago, this establishment is still serving its many customers as they did in the past.

To-day, Radio Supply Stores stock covers a wider scope than it did in the old days. Besides stocking a complete range of new apparatus, they have a "used radio department" where almost any part appertaining to radio sets, either new or old, may be purchased. Valves, transformers, speakers, condensers, etc., may be had in most cases at 50 per cent. off new list price. All goods are thoroughly tested before leaving the shop and are of course under guarantee.

This is indeed a great help to people who have an old set in need of repair and cannot obtain new parts for replacements.

EXPORTERS

A firm in the Dutch East Indies is desirous of obtaining catalogues and best export prices for Australian radio and electrical goods. Further details from "Radio World," MA 2455.

SPECIAL SERVICE AT DAVIS RADIO

Well known to the Sydney radio-minded public is the Davis Radio Co., situated on the 1st floor of Wembley House, 841 George Street, Sydney. For many years now this progressive little firm has been showing its many satisfied customers what really good service is. Apart from stocking a complete range of radio component parts, this firm specialises in complete kit-sets for "Radio World" circuits.

Many years of service in this branch of the radio business has taught the staff of the Davis Radio Co. just what is required when an order is placed for a particular kit. They know that if a customer orders a complete kit he really and truly wants a complete kit, not as in some cases, where the chassis arrives minus a resistor or two and the valves without valve cans, etc.

This is what turns the home constructor off set building, declares the manager of the Davis Radio Co.

The Davis Radio Co. cordially invite any "Radio World" reader to write for a detailed quote for a kit of parts, to build any receiver described in this or any other issue of the "Radio World." You can rely on a prompt reply, and we understand that there is no charge for this special service.

KIDDIES' XMAS GIFTS

As has been the custom for several years now, Price's Radio Store, of Angel Place, Sydney, are catering for the children this Xmas. Well known to all Sydney radio folk, for many years now Price's radio has built up a great following as a radio store and kit-set specialists. The same friendly service in the Toy department has made Price's the ideal gift shop, as has been proved in previous years.

Many new and interesting lines have just been landed specially for the Xmas period.

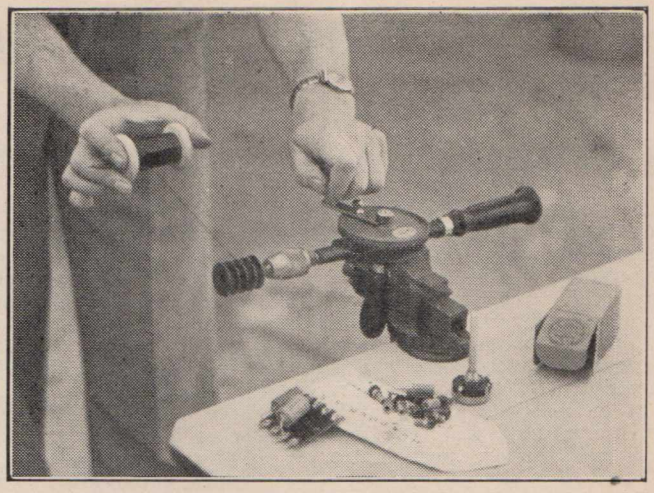
Of course, such lines as Hornsby trains, Meccano sets, Dinky toys, chemical sets and electrical outfits are stocked ready for the modern Santa Claus to deliver to the children.

All lines are of good quality, and the prices are right. If you generally get annoyed buying the kiddies' toys, visit Price's Radio and do it in comfort. You can speak to the Price's staff about radio whilst choosing gifts for the kiddies.

TONE CORRECTOR

Generally speaking, the frequency response from a crystal pick-up is superior to that of a magnetic type, but the magnetic type has many other good features which account for its popularity. The matter of the response can be greatly assisted by the use of a tone corrector unit, as detailed in this article.

By A. EARL READ

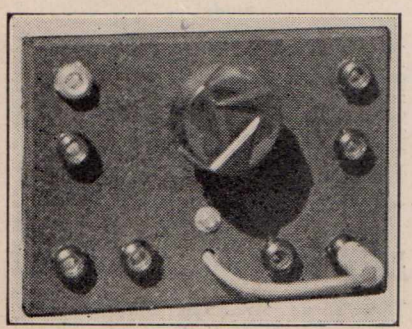


Above — Photograph illustrating the simple way in which the winding of the inductance is accomplished.

MOST medium-priced pick-ups of modern design have fairly good characteristics, but nearly all of them have a more or less prominent resonance peak in the neighbourhood of 3,000 cycles. Although a slightly rising characteristic is sometimes desirable to counteract high-note loss in the amplifier, a pronounced peak not only introduces unpleasant quality, owing to exaggerated overtones, but also may cause overloading of the amplifier on the high notes.

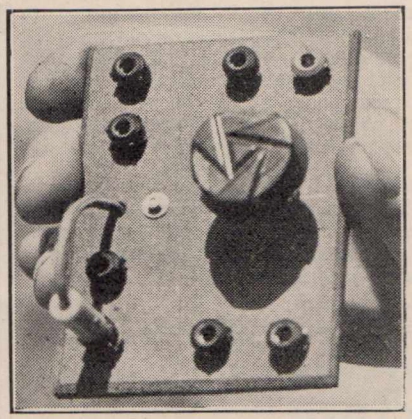
In order to obtain crisp, balanced reproduction, this peak should be levelled out in some way without interfering with the frequencies immediately above and below it. Of equal importance is the removal of unnecessary scratch, but unfortunately it is impossible to do this completely and still retain good quality, because needle scratch spreads over a fairly wide band on the higher frequencies, and to cut it out would mean cutting out the high frequencies as well, making reproduction lifeless and "boomy."

It has been found, however, that needle scratch is particularly prominent at the resonant point of a pick-up, and so by reducing the peak with a corrector, needle scratch is considerably reduced, too. The corrector shown in the photograph consists of a filter circuit comprising an inductance, condenser and a variable resistance, all connected in series across the pick-up leads. The inductance is tapped to cover three frequency ranges.

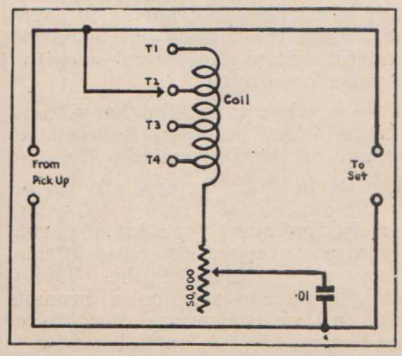


Front view of the tone corrector.

This photograph gives an idea of the handy size of this tone corrector.



The circuit diagram.



Constructional Pointers

The potentiometer does not affect the frequency range, but only controls the amount of absorption of the peak frequency. With full resistance in circuit, the corrector has practically no effect, but as the resistance is gradually reduced, so the absorption becomes greater until, at minimum resistance setting, the corrector will absorb nearly all the output at the frequency at which it is set.

The Inductance

The inductance required is wound from an ounce reel of 42 gauge, s.w.g. enamelled copper wire. The wire is wound on a four-bobbin bakelite former, with about 1600 or 2000 turns on each section. The winding of this inductance is a simple matter is a drill is available, mounted in a vyce, as shown in our photograph. The drill will be geared slightly more than four to one, and so about four hundred turns of the handle are required for each bobbin. It is only a matter of about ten minutes to wind each bobbin in this way. The actual number of turns is not critical, as the adjustable resistance covers the widest range.

The connections from the corrector are brought to four sockets mounted on an ebonite panel. The bottom socket is permanently connected to one side of the pick-up, while the other side of the pick-up goes to any one of the other three sockets, according to the frequency cut-off desired. The top socket gives a cut-off at 3,500 cycles, the middle one at 2,500 cycles and the lowest at 1,500 cycles.

For correct adjustment, it is useful to know the approximate frequency at which the pick-up resonates, and this is obtainable from the characteristic curve which is generally supplied with the instrument. The resonance point

TONE CORRECTOR
(continued)

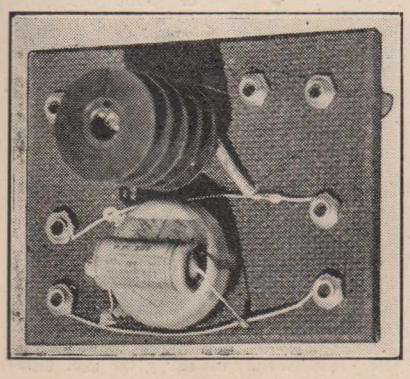
generally takes the form of a steep and narrow hump in the curve between about 2,000 and 3,000 cycles, indicating a considerable rise in the voltage output at this point.

Choosing the Right Tappings

In order to reduce the excess voltage, the tapping which most nearly corresponds to the frequency of the peak is chosen, and, starting with the resistance at maximum, it is gradually reduced until the most satisfactory setting is found.

If details of the resonant point of the pick-up are not obtainable, the best plan is to make a quick test of all three adjustments on the corrector, starting with the top socket and turning the resistance from maximum to minimum each time. In almost every case a setting will be found which gives the best balance of tone with minimum needle scratch.

The corrector tends to reduce the output of the pick-up slightly on all frequencies, and so it is necessary to turn up the volume control a trifle higher than normal when it is in use.



Photograph showing simple layout.

TONE CORRECTOR — Parts List

1—Panel of bakelite or masonite 3" x 4."
1—50,000 ohm potentiometer.
1—.01 mfd. tubular condenser.
1—Four-pie bobbin.
1—1 oz. reel of 42 s.w.g. enam. wire.
8—Banana sockets, 5 banana plugs.
Hook-up wire, knob, etc.

NOTE: This tone corrector is designed exclusively for use with magnetic-type pick-ups and is quite unsuitable for use with the crystal types, which need to feed into a much higher load impedance.

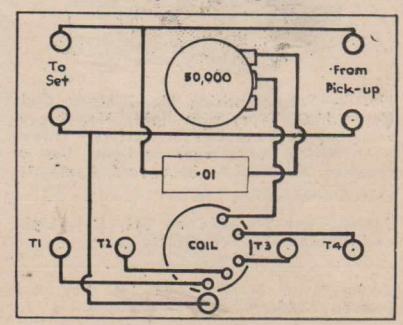
Available for Inspection

One of these units is available for inspection at the radio department at Murdoch's in Park Street. Murdoch's are making a speciality of this unit, and have kits of components available at a special price.

Wider Scope

If several small condensers are available, an almost unlimited amount of experimenting can be done by replacing the .01 condenser with a capacity of .02, or even up to .1 mfds. In all cases results can be judged aurally.

The picture diagram.



LEVENSON'S WIRELESS

Wholesale, Retail. **Wholesale, Retail.**

Games, Hobbies, Novelties, and Slot Machine Specialists.

226c PITT STREET, SYDNEY

Everything from A to Z in Radio at Sane Profit Prices.
'Phones: M 2525 and M 2526-7. Goods forwarded C.O.D. Post or Rail. (C.O.D. Mail within N.S.W. only. Not Interstate). We welcome Prepaid Telegrams and Long-Distance 'Phone Calls.

Listen in comfort. Rubber HEADPHONE PADS give a new thrill to listening. Priced 2/6 per pair.

BOOKS FOR ALL

Tricks with Cards, 1/6; Fifty Best Card Tricks, 2/-; 100 More Tricks to Do, 2/-; The Best Tricks, 2/-; Simplified Conjuring, 2/-; New and Easy Magic, 2/-; Paper Magic, 2/-; Humorous Stories and Recitations, 3/6; Tea-Cup Fortune Telling, 3/6; Model Steamers and Motor Boats, 3/11; The Book of Mystery and Magic, 1/6; Dreams and Omens, 1/6; Popular Card Games, 1/6; Fifty Best Conjuring Books, 1/6; 1000 Conundrums, 1/6; The New Model Aeroplane Manual, 6/11. BOOKS — Model Engineer Series 1/6 each: Electric Bell and Alarms; Model Steam Turbines; A Small Electric Light Plant; Model Steamer Building; Simple Mechanical Working Models.

RADIO SNAPS TO CLEAR — Radiokes straight-vision back-panel Dial, 27/6. NOW, 5/-. Radiokes Travelling Spotlight back panel Dial, 19/6. NOW, 4/-.

RADIO PUBLICATIONS

Learn Morse, 1/-. Radio Dictionary, 1/-. Beginners' Radio Book, 1/-. Everyman's Radio Book, 5/6. The Television and Short-wave Handbook, 5/6; Sixty Tested Wireless Circuits, 6/6; The Book of Practical Television, 8/6; The Wireless Constructor's Encyclopaedia, 7/6.

USEFUL XMAS AND NEW YEAR PRESENTS — 5-cell Focussing Torches, 8/6; Extendable 2-3 cell Focussing, dimming and variable, light, nickelled, highest grade Torch, 10/6; Fountain pen-size nickelled Torch, 2/6; Electric Hair Brushes, military type, 12/6; Dressing-table Pattern, 15/-; Fancy2-color Writing Pencil, 5/9; Ball-bearing all-steel Skates, 15/11; Children's all-metal Road Skates, 5/11.

HIGH-GRADE TOYS — Submarines that dive, 8/11; Model Electric Motors, work off 4 to 12 volts, 10/6, 12/6, 15/-; 6-volt heavy-duty Electric Motors, 63/-.

COSMOCORD CRYSTAL TYPE BRITISH BUILT AND DESIGNED GRAMOPHONE PICK-UP DE LUXE, with volume control built in as illustrated, 59/6.

AMPLION British built Gramo-Radio Pick-up with volume control. Moulded bakelite tone arm. List Price 37/6 Now 32/6. Dealers write for wholesale price.

S.T.C. English Headphones, 4000 ohms, 32/6.

Heavy-duty ELECTRIC 240 a.c. GRAMOPHONE MOTORS, complete, 50/-.

COLLARO Gramophone Motors and Turn-tables. Complete, 52/6 and 56/6.

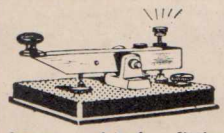
Sturdy built 240-volt Electric Motor, with all fittings; were listed to sell at 75/- from overtime Customs Sale; now 40/-.

Hand - holding MICROPHONE. Batteryless; plugs into pick-up terminals of any set, 22/6.

B.G.E. Table Type Microphone, highly recommended for amateur or professional use. Built-in Transformer and Battery, with volume control incorporated. Just plug into pick-up terminals of any set or amplifier. 39/6.

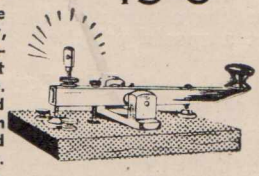
CRYSTAL SETS AND CRYSTALS Famous All-Station Model. Charts 6d. All Parts 25/-. Built 35/-, in Cabinet 45/-. Phones 12/6. Aerial—Earth 2/6. CRYSTALS A.1. Semi Fixed, 2/6. "Tec" Fixed Crystal 2/6. Liontron 5/6. Lion Micro 5/6. Refills 2/6. Red Diamond 4/6.

Pilot single drum Dials, 1/6; 17-plate Midget Condensers, 1/9; English .0005 Variable Condensers, 6/9; Blue Spot and other high-grade Cone Speaker units, less than half price, 10/6, 12/- and 15/-.

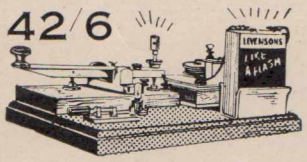


No. 1. — Adjustable Morse Code Key, with long or short tapper arms, splendidly made and finished. Strong reliable heavy plated fittings mounted on bakelite moulded base, 12/6.

Junior Type Morse Code Key, 7/11 .



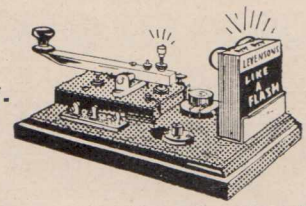
No. 2.—P.M.G. Type adjustable Morse Code Key, strong and reliable; will last a lifetime. Heavy plated fittings on thick solid wooden base. Perfect action. 19/6



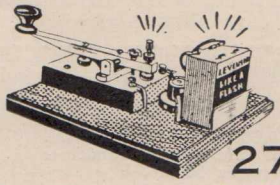
No. 3.—Set comprising No. 2 Morse Code Key P.M.G. Type, with light; No. 8 professional De Luxe Buzzer Battery. Throw-over Switch for buzzer or light. Use as required. Mounted on baseboard. Complete. 42/6

Junior Type Morse Code Set, Key, Light and Buzzer, 16/6 complete set.

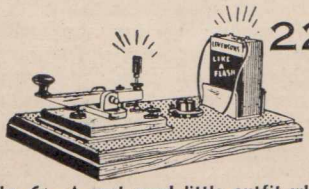
Junior Type Morse Code Set, key and buzzer, 12/6.



No. 4.—P.M.G. No. 2 Morse Key, with adjustable buzzer and light throwover switch (buzzer to light). All mounted on wooden baseboard complete. 30/-

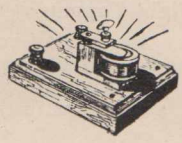


No. 5.—Outfit comprises the P.M.G. No. 2 Morse Code Key, with adjustable buzzer and battery all mounted on a stained baseboard, ready for immediate operation. Battery included. 27/6



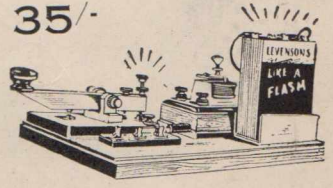
No. 6.—A real good little outfit which incorporates the No. 1 adjustable Morse Code Key, in moulded bakelite base, with a smart little adjustable buzzer all complete to operate. Junior model, 12/6. 22/6

No. 7.—Morse Code Set with No. 1 Key, buzzer and light. All components mounted on solid, stained wooden base, neat and compact with switch for light or buzzer. Complete. Junior model, 17/6. 25/-



No. 8.—De Luxe adjustable buzzer as illustrated, precision product of excellence. Smooth high tone non-irritating note. A real professional's job for amateur, ship, or plane use. Price 15/-

Other buzzers not illustrated, 3/9 and 4/6. High pitch buzzer in metal case 4/9, in bakelite case adjustable. Price 5/6.



No. 9.—A smart reliable outfit, comprising No. 1 Morse Code Key and No. 8 professional buzzer with switch (light to buzzer) and battery all ready for use. Baseboard. 35/-

SPEEDY QUERY SERVICE

Conducted under the personal supervision of A. G. HULL

G.P.S. (Cremorne) enquires about space-charge detectors and various circuits for simple sets, to use only only low voltages for high tension.

A.—For such a small set it would be quite in order to use light duty or portable type "B" battery units and they are only a few shillings each, so there is not so much to be saved. In our issues of September and October, 1937 (both copies still available at 6d. each, post free), we described a two-valver using a pair of 49 type valves and requiring only 18 volts for high tension.

Strangely enough, we notice in the latest issue of the West Australian paper, "Broadcaster," that they have a circuit for a similar type of set, but requiring only 7½ volts high tension. With luck, we may be able to reprint this circuit in a coming issue.

* * *

I.R. (Maitland) has a superhet which is troubled with whistles on distant stations, especially at the top end of the band.

A.—It would appear that there is a feedback circuit somewhere. We suspect that you run the aerial lead in back from the aerial coil through the intermediate winding and then out through the back of the base. This is always likely to cause instability or whistles. Take it out through the side of the base. We also suggest that you make sure that the padder condenser and its associated wiring is kept clear of other wiring and components. Make certain of an effective earthing for the padder.

* * *

D.R. (Hobart, Tas.) queries the circuit for detection, used in the "Trans-Port."

A.—This is what is known as diode-biassed detection, and the circuit is O.K. as published. With such a circuit, overloading causes the detector to choke up, due to the developed bias voltage causing actual cut-off of the triode plate current, always possible with a high-gain triode section. It is a particularly simple and effective detection, however. That circuit was made as simple as possible and we had hoped to run a further article about adding extra components and likely effects of so doing, but you know how it is! Keep hoping.

* * *

A.T.T. (Cessnock) wants some articles on home recording.

A.—Frankly, we haven't anything to add to the series of three articles which covered the subject so fully in our issues of December, 1938, and January and February, 1939. These are still available from our back date department at 6d. each, post free.

* * *

E.R.R. (Campsie) has built the Picnic portable with iron-cored aerial, r.f. and oscillator coils and has altered the adjustment of the cores and now cannot get correct dial tracking.

A.—You have made a very bad mistake in altering the adjustment of the cores, and we can only suggest that you remove the coils and return them to the maker for re-adjustment. By a fair bit of experimenting you might manage to get the dial tracking right, but it is unlikely that you will be able to guess at the adjustment of the oscillator core sufficiently well to give you proper padder tracking.

* * *

P.L. (Grafton) enquires about a white deposit on top of the electrolytic condensers.

A.—The fact that there are traces of white crystals on top of the electrolytic condensers merely indicates that the electrolyte has been leaking out through the release valve in the rubber cap, and in itself does not truly indicate that the electrolytic condenser is ruined. There might be sufficient electrolyte retained in the condenser to make it quite serviceable. But since you also report hum trouble, it certainly looks as though the condensers are faulty and should be replaced. It is quite often found that electrolytics need replacement after a couple of years of service.

* * *

"Hammer" (Newcastle) enquires about technical magazines.

A.—The import restrictions do not allow the importation of "Q.S.T." at present, but you can have single copies posted out direct by making a direct subscription. This can be arranged through any newsagent or through our office, the cost being 19/3 for twelve issues. Copies are still being received by us and if there is any special feature which you want to see you will be welcome if you drop in at the office when you are down in Sydney. Please note that the office will be closed right through the holidays from Xmas to New Year.

* * *

B.A.T. (Penrith) asks for a simple superhet to cover the higher bands up to 2,000 metres.

A.—Sorry, but we haven't any suitable circuit of this type available. With a superhet the intermediate frequency falls in the band you want to cover and messes things up a bit. It is therefore desirable to use an intermediate frequency of some very high frequency and we doubt if you will be able to buy such intermediates. We suggest that you use a good t.r.f. circuit with an r.f. stage. One of this type appeared in the February, 1939, issue (available at 6d., post free), complete with all coil winding data.

* * *

B.H.G. (Adelaide, S.A.) asks about styles of circuit drawing.

A.—So far as we know, there is no real standard way of showing valves and so on. Every artist seems to have his own style, just as he has his own style of signature. The same differences are noticeable in overseas technical journals. If there was a standard we might try to use it, but at present we find it best to let the individual artist use his own style. Our regular artist is at present in camp, but should be back on the job in the immediate future. Many thanks for all the kind words and good wishes.

* * *

L.E. (Randwick) enquires about laboratory service for a one-valve headphone set.

A.—No, sorry, but we couldn't possibly undertake to handle this job, especially at present as we are short-handed and extremely busy. It wants somebody to sit down and experiment with it for hours on end, from what we can gather. There is no short-cut to getting smooth reaction, and it will call for a certain amount of patient work. Apparently there is nothing fundamentally wrong with the set at present.

* * *

E.R.K. (Hurstville) tells of a two-valve set which tunes broadcast all right on a short indoor aerial, but on short-waves it squeals when using an aerial of 18 inches length.

A.—The first obvious experiment is to try an aerial of intermediate length, say, ten feet. The length of aerial has quite an effect on stability. Thorough shielding of valves, coils and transformer should be carried out, even if roughly for experiment, by using jam tins. Then a small mica condenser across the primary of the audio transformer and a .1 meg. resistor across the secondary should help to iron out some of the peaks. Keen attention to even the most minor detail is sometimes necessary to get maximum stability and smooth reaction, which then means real results.

* * *

F.M. (Queenstown, South Australia) brings up the matter of centre-taps and centre-tapping.

A.—In practice it doesn't make the slightest difference whether you use the centre-tapping provided on the power transformer, or whether you put a small centre-tapped resistor across the winding and use the centre-tap in the same way. The actual resistance value of the centre tap is not critical and has little effect on the bias resistance value as the two halves are in parallel and the resultant resistance is only one-quarter of the normal value. For example, the usual resistor for power valves is 50 ohms, centre-tapped. This actually adds only 12½ ohms to the effective bias resistance. It increases the current drain on the filament winding, but only by about a fraction of an ampere and the filament winding will readily supply this small additional current. When shown on a schematic it is often found that the centre-tapping system is completely disregarded and the resistor included or omitted according to the style of the particular draughtsman doing the drawing. In the Champion amplifier the 5,000 ohm

STOP PRESS

RADIO DAKAR

Mr. Nelson, of Cairns, advises having heard **Radio Dakar** on approximately 9.40 m.c., 31.9 metres. Were heard from 6.15 to 7.15 a.m. Talk in English at 7 a.m. Very anti-de Gaulle. Signal strength good, best on opening. Close with "Marseillaise." Male and female announcers.

(Dakar is a fortified naval station in Senegal, French West Africa, with a population of 40,000 and very much in the news at the moment.—Ed.)

QUERIES

(continued)

resistor in the cathode circuit of the 57 was not listed in the parts list, but this should not be any great difficulty, as it is shown quite clearly in both the circuit and picture diagram.

* * *

W.W. (Warracknabeal, Vic.) is having a job to tame a one-valver.

A.—No, it is a mistaken idea to imagine that a one-valver is the easiest type of set to get into perfect operation. Personally, we'd rather build a superhet and get it in first-class order quicker than we'd straighten out a one-valver and get the smooth reaction and controlled regeneration which is so imperative if results are to be up to the standard obtained by some who operate these little sets. Shielding and layout can be quite critical. Keen attention to detail and patient experimentation along the lines you are working is all we can suggest.

SPECIAL NOTICE

The offices of "The Australasian Radio World" will be closed right through the holidays from December 24, 1940, to January 2, 1941.

R.F. (Hurstville) sends in a nice batch of queries, but not to do with radio.

A.—We'll do the best we can to help you in this matter, but, as the queries are, to put it mildly, beyond the scope of a service intended to deal with technical radio subjects, it may take a day or two for us to get around town and get the required information. We will write you direct, just as soon as the information is available.

* * *

T.P. (Melbourne, Vic.) enquires about the future position of "ham" licences.

A.—So far as we know there has been no official statement made about the position of "ham" radio after this war is cleaned up. The fact that "hams" have been allowed to retain their gear looks hopeful, but we doubt if anything definite is likely to be decided at this stage. In the meantime it is imperative that ex-"hams" should notify the local R.I. of any change of address or change in the location of the silent gear.

* * *

"Cam" (Quorn, S.A.) writes: "After reading the October issue, it occurred to me that it may be a good stunt to conduct a straw vote on battery valves to see what readers think of the 1.4 and 2 volt types."

A.—Yes, it is quite a good idea, although we doubt if it could serve any useful purpose. There doesn't seem to be the slightest doubt that the 2-volt types are more robust and capable of giving better results, especially on the short-waves. But on the other hand they are not so handy when it comes to supplying them with current, and they are not so economical in operation. Glad to have the suggestion.

* * *

W.H.B. (Cracow) has a coil kit designed for a 6A7, but wants to use it with a 2-volt battery valve.

A.—Generally speaking, there is a good chance that the kit will work out quite well with the 1C7G, but we can't guarantee it. We feel sure, however, that it would be well worth trying. We do not recommend, however, the use of the 1A7GT with this particular kit and think that you would be almost certain to strike trouble on the short-wave band if you did so.

* * *

A.P.L. (Perth) is worried about the capacity of the tuning condenser for the Reinartz.

A.—The capacity is not critical and any of the modern single-gang condensers should be equally suitable. In our receiver we used one of the R.C.S. type CV50 condensers and these should be readily available in your State.

R.E.D. (Mildura, Vic.) again brings up the matter of publication dates.

A.—Well, as you will notice this month, we have started to make good progress towards getting issues out at an earlier date. The November issues were despatched form this office on November 1, and the December issues should be on sale before the holidays. The January issue will appear as a special Xmas issue and the February issue should be on sale well before the first day of that month.

* * *

L.S. (Maylands, W.A.) writes at some length.

A.—Glad to hear from you again, L.S., and to learn that you are doing so well with the set. We don't like having to do so, but we really must pull you up in the matter of the two papers. A. G. Hull completely severed his connection with "Radio and Hobbies" when Wireless Newspapers Pty. Ltd. faded out of the picture and that paper was taken over by Associated Newspapers. That was as from December 31, 1939. He is now entirely independent as the proprietor and publisher of "Radio World" and there is not the slightest connection between the two publications.

* * *

A.D. (Ashfield) wants a short-wave selector and a Ken-Rad data chart.

A.—The short-wave selectors were distributed through radio dealers handling Radiotron valves, but if you can't get one you might ring or write to the Amalgamated Wireless Valve Company at 47 York Street. The Ken-Rad data chart should be available from the Ken-Rad distributors, E.T.C. Industries Ltd., of 470 Elizabeth Street, Sydney.

* * *

L.J.P. (Nanango, Q.) enquires where he can obtain International Reply Coupons.

A.—According to the book of the Postal rules and regulations, rule 206 (1) says that these are obtainable at all post offices in the Commonwealth.

* * *

S.O.S. (Dubbo) wants further details about bias for the "1940 Reinartz."

A.—Yes, afraid we slipped a bit there, and the information was a little scanty. The bias required will depend on the types of valves used. If you use the 1H5GT in the audio stage you will need only 1½ volts negative for "a," and with the 1Q5GT in the output stage you will need 4½ volts negative for "b." If other valve types are used, the maker's recommendations will be followed.

JUNIOR TECH. QUERIES

C.G., Wentworth Falls:

Steel could be used for the key; we suggest you have it polished and lacquered or plated.

* * *

C.F., Dorrigo:

Competent handling of a morse key is only a small part of the expert operator's knowledge. Operating procedure, international abbreviations and radio law must be familiar, as well as an elementary knowledge of radio technique.

* * *

A.C.F., Cairns:

Never attempt to connect an ammeter across the accumulator; the amperage may be calculated by assuming about one ampere hour for each square inch of positive plate surface.

RW 13/42

(continued)

the same short-wave station can be tuned, one being the fundamental frequency and the other the image frequency. All alignment should be carried out on the fundamental, which will be the higher frequency (lower wave-length) reading of the two.

Colour Code

The colour code for the "Crown" intermediates is as follows:—Plate, green; grid, brown; B+, red; filament, black.

All you ask for and more!

DELTA D1200

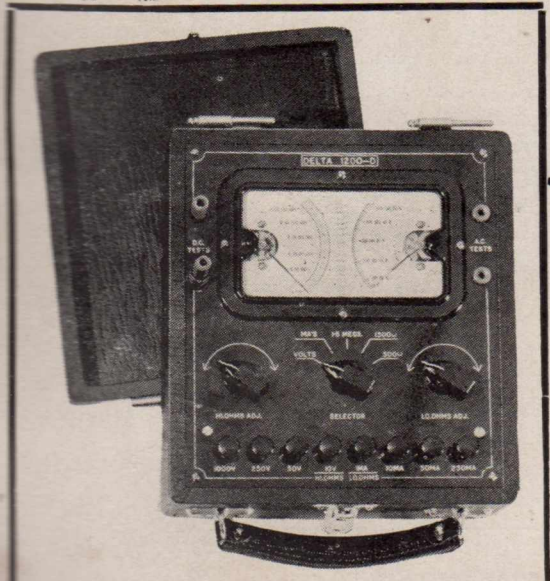
Volt-Ohm-Milliammeter

PUSH BUTTONS OPERATED
This is the latest addition to the "Delta" range of Testing Equipment, and incorporates the Tripplett twin instrument with a sensitivity of 2,000 ohms per volt on the D.C. scales.

SCALE READINGS
D.C.: 0-10-50-250-1,000 volts at 2,000 ohms per volt; 0-1-10-50 250 milliamperes; Low ohms: ½ to 500, 1500 ohms and 1.5 megohms. A.C.: 0-10-50-250-1000 volts.

BACK-UP OHMMETER CIRCUIT
For reading low ohms, ½ to 500, with minimum contact error.

PUSH BUTTONS
For selecting correct range of D.C. and A.C. volts, D.C. Milliamperes and high and low ohms. Separate zero adjusters for high and low ohms. Selector switch for volts, milliamperes, 1.5 megohms, 1500 ohms and 500 ohms.



- Leatherette carrying case, 9" x 7¾" x 5½," with handle for portability. Bakelite engraved panel, test prods and leads and all self-contained batteries supplied.

PRICE, £8

- You are cordially invited to inspect the complete Delta range at our showrooms. Remember efficiency in your business is largely dependent upon up-to-date equipment.

W. G. WATSON & CO. PTY. LTD.

279 CLARENCE STREET, SYDNEY

Phone: M 4331 (6 lines)

Don't make my mistake son
To-day is the day of the trained man

Become a Skilled Radio Engineer and Guarantee Your Own Future

In peace or in war, modern life has no time and no place for the unskilled . . . he is relegated to the rabble, there to be pushed from pillar to post, a victim of his own incompetence.

YOUNG MAN, YOU CAN'T AFFORD TO REMAIN ONE OF THE HERD

To-day, more than ever before, it's essential you become a trained specialist.
How are you to acquire this technical training quickly? What industry needs trained men? Where can you find security and ultimate prosperity? I can supply an answer to each of these questions and that answer is . . .

GET INTO RADIO WITH A.R.C.!

You need NO previous knowledge to learn Radio the A.R.C. way. I'll teach you rapidly and thoroughly, at home in your own spare time.

No need to leave your present job or spend long weary years at a bench; my methods are quick, simple to follow, and 100 per cent. effective.

EARN GOOD MONEY WHILST LEARNING

You don't have to wait a year, or even six months, before you are ready to begin "cashing-in." I am going to show you how to earn extra money almost from the word "go"
Many students make £2, £3 and up to £6 per week in their spare time whilst studying. Remember also that the A.R.C. course in Radio Engineering is well within your financial reach, and indeed costs less than many fellows spend each week on tobacco. When you are thoroughly proficient, of course, A.R.C. will help you find a job, or if you prefer to start in a business of your own, we'll give you valuable assistance and advice.

AUSTRALIAN RADIO COLLEGE PTY. LTD.

Cnr. CITY ROAD and BROADWAY, SYDNEY **Phone: M 6391 (2 lines)**

WHEN WILL YOU WRITE YOUR OWN SUCCESS STORY?

A student writes: "Before turning to Radio professionally, I had, in recent months, found it impossible to obtain employment in the line for which I was qualified. Thanks to your aid, I was placed within two weeks of my examination."
Another states: "There must be a shortage of trained men, all right. I get offers ever so often since I successfully passed through your course. My most recent was the offer of a branch managership."
Here's a man, now in business for himself, who says: "I sold six sets last week; employ two men, and have just bought a new delivery van, all in my spare time whilst training and after."

MAIL COUPON NOW — MAIL COUPON NOW — MAIL COUPON

To Mr. L. B. GRAHAM, Principal,
Australian Radio College Pty. Ltd.,
Broadway (opp. Grace Bros. Ltd., Sydney).
Phone: M 6391-2.

Dear Sir,
I am interested in getting ahead. Please send, without obligation on my part, the free book, "Careers in Radio and Television."

NAME .....

ADDRESS A.R.W.9

MAIL COUPON NOW — MAIL COUPON NOW — MAIL COUPON

THIS BOOK FREE! SEND FOR YOUR COPY NOW!

Printed by the Bridge Printery, 117 Reservoir St., Sydney, N.S.W. for the proprietor of the "Australasian Radio World," 117 Reservoir St., Sydney.