

Complete Broadcasting Programmes a Week in Advance

18

Wireless Weekly

3^p

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 14. NO. 17.

FRIDAY, OCTOBER 18, 1929.

(Registered at the G.P.O., Sydney, for transmission by post as a newspaper.)

In the SOUTHERN PACIFIC

Fiji, Papua and New Guinea—
AMALGAMATED WIRELESS
operate no fewer than 15 wire-
less stations.

With the A.W.A. stations at
Sydney as a centre the A.W.A.
organisation has thus established
a chain of British wireless sta-
tions in the Pacific of Inter-
national importance.

Amalgamated Wireless
(Australasia) Ltd.

Australia's National
Wireless
Organisation.

Special
Short-wave
Number

HOW TO TUNE IN
INTERNATIONAL STATIONS
ON A TWO VALVE
RECEIVER

New list of Short-wave Stations
with time schedules and
wavelengths.



The Joy Centre



-of the family circle!

REVEL in the joy of entertainment, over the air, after a day's strenuous business. Joy that is not confined to an individual, but which the whole family can enjoy!

£27/5 The Stromberg-Carlson
Treasure Chest All Electric-3

Loud Speaker Extra

—Brings you Manifold Joy!

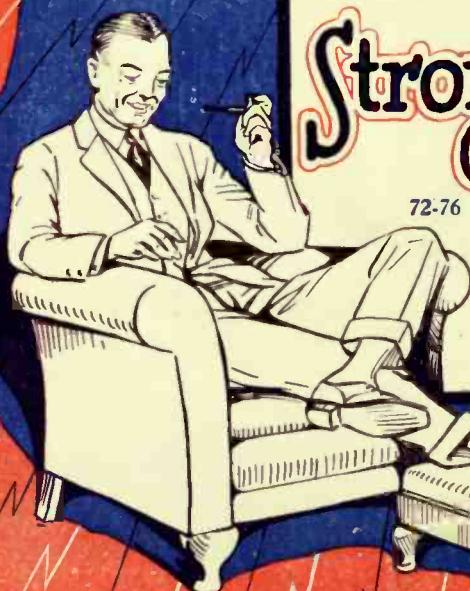
Just sit in your easy chair—listen in to the latest Jazz, Song and Dance numbers, Classic Music, Election Speeches, News and everything worth while that you should know. Just plug in—no batteries to worry about—and dial your favourite items.

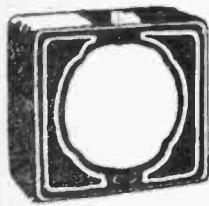
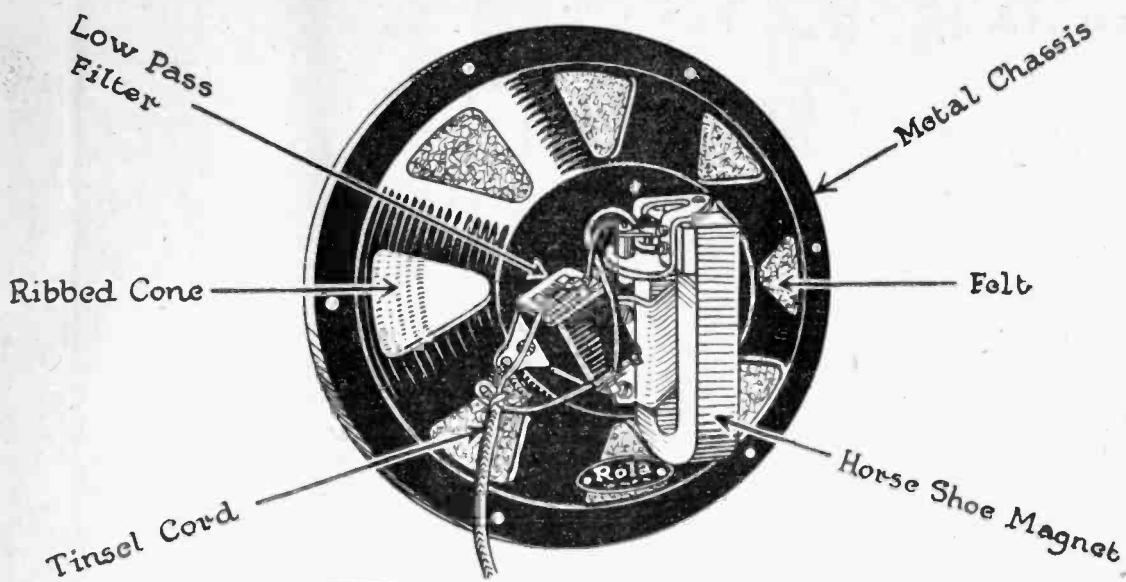
If you want to hear the best in radio, arrange for a demonstration of a Stromberg-Carlson All Electric Six. Obtainable from all Authorised Stromberg-Carlson Dealers who will gladly arrange a demonstration without obligation.

MADE IN AUSTRALIA

Stromberg-Carlson (Asia) Ltd.

72-76 WILLIAM STREET, SYDNEY.





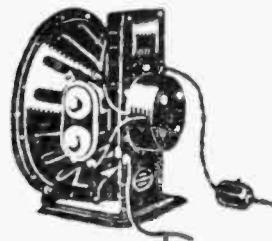
ROLA MODEL FIFTEEN,

In which is incorporated the
above Model 'M' Unit.

Price, £4'10'-

ROLA

Dynamic AND Magnetic SPEAKERS



ROLA MODEL J110.

This is the complete ELECTRO-DYNAMIC, 240 Volt A.C. Unit, equipped with Westinghouse-Rectox Rectifier.

Price, £10'10'-

The model illustrated is the ELECTRO-MAGNETIC Armature Unit Model M. It has the Rola full-floating diaphragm, with low-pass filter, solid pole pieces, and padded ribbed cone, supplied with tinsel cord. These are only a handful of the outstanding features by which a ROLA is distinguished from other speakers. SEE AND HEAR this ROLA for yourself. A demonstration will convince you that it is just what you have been waiting for.

Price Only £3/15/-

DEALERS' INSPECTION IS INVITED

UNITED DISTRIBUTORS
LIMITED

PHONE, M3004.

151 CASTLEREAGH STREET, SYDNEY.

ALSO AT MELBOURNE, BRISBANE, AND WELLINGTON, N.Z. TAS. AGENTS: FINDLAYS PTY., LTD.

PRICE'S Present PROFITS to Purchasing PUBLIC !!

4in. Diora Bakelite Vernier Dials

These are strongly made of moulded Bakelite with nickel-plated fittings.

4/6

Amplion Moulded Cones, Bronze or Silver

Made of strong moulded Buckram in one piece—no joins, Duco sprayed and hemmed with felt.

5/9

Carborundum Crystal Detectors —New Type

The ONLY permanent Detector on the market; by using 1½v. battery through a potentiometer, results equal one valve strength.

8/6

Lewcos Special Wave Trap

If you get that annoying background of other stations, try one of these—a winner.

22/6

Marvel Hydrometers

An accurate accumulator checker, sturdy and easily read. Float spiked to prevent sticking to sides of barrel.

3/6

3in. Diora Bakelite Vernier Dials

Of moulded bakelite with N.P. fittings, these dials are excellent for portables.

3/6

Hydra 2mf. Fixed Condensers

These are first quality condensers purchased by us in large quantities for cash, enabling us to undersell. Each thoroughly tested before sale.

3/6

Silvertone Cone Speaker

This small cone speaker can be either hung on the wall or stood on your cabinet; adjustable diaphragm and purity of tone.

32/6

Lewcos Short Wave Kit

Comprising six-pin base and coil, 20-45 metres, other coils available up to Broadcast Wave Band—Circuit supplied.

18/6

Tefag Phones

Each earpiece is adjustable, enabling utmost sensitivity. Heavily nickel-plated with leather covered steel headband, 4000 ohms.

12/6

WATCH FOR OUR COMPETITION IN NEXT WEEK'S ISSUE!

Return Post Mail Order Service—Add Postage. All Goods carry our Guarantee.

:- Price's Radio Service :-

WINGELLO HOUSE, ANGEL PLACE

B4146 BOX 3326PP., G.P.O.

Vol. 14 No. 17
Friday,
October
18.
1929.

Wireless Weekly

Incorporating Radio in Australia & New Zealand

Address
Box
3366 PP
G.P.O.,
Sydney.

ALLOW US TO PRESENT—



John and James Pay a Visit to 2BL Studio

BETWEEN YOU AND ME AND THE MICROPHONE

JOHN said he wouldn't mind doing a caricature or so, so we told him to come along to 2BL if he wanted to do a caricature or so; because there are some dreadfully funny people at 2BL. So he said "Right-o."

We told him we'd better prepare the 2BL mob for his coming, so they'd know what to expect; and at last we arranged that he should go up on a Friday night, when Mr. Barnett and plenty of artists and other funny people would be there; and we told Miss Bassham to expect him and see that everyone behaved nicely, which is not usually the case, however. Then we told John to be sure and speak nicely to Miss Bassham, because what she says goes. That is why there is so much movement up at 2BL. John memorised our instructions carefully, and then he said, "But I suppose you will be up there, won't you?" Well, of course, we're ALWAYS up at 2BL—it's been a sort of club for us for the past two years, because they are a very tolerant crowd up at 2BL: so we promised to show John round on Friday night when he came up.

We arrived with John, and got out of the lift at the third floor, and went down the corridor, and looked round the corner of the big telephone switchboard, and there were Miss Bassham and Mr. Charles Lawrence and Miss Kathleen Roe. She said "Good evening" as usual while she powdered her nose, and sighed as usual while she put back the powder puff; and we said "Good evening, Mr. Lawrence," and bowed to Miss Roe, and Miss Bassham sighed again and said, as usual,

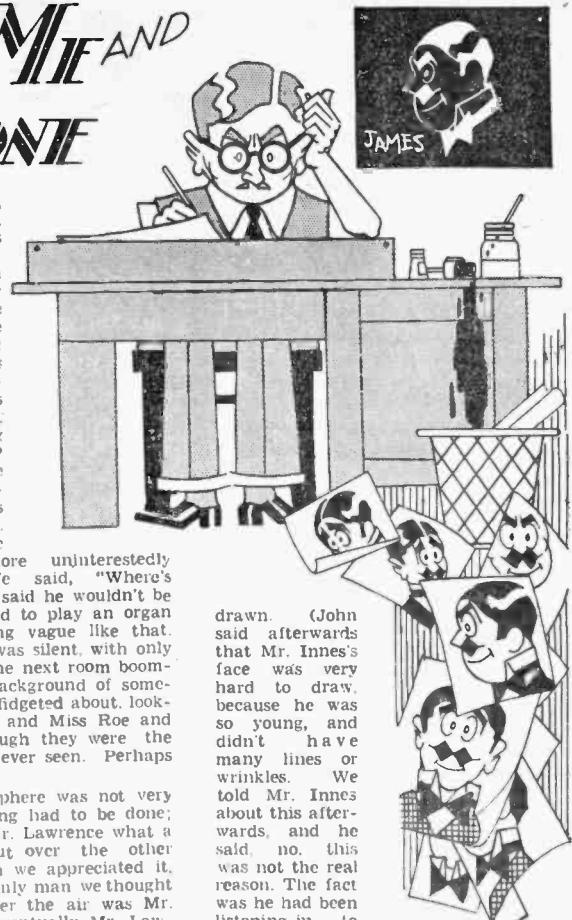
"Morfy t'd t'night, James," and we said. "This is John, Miss Bassham, Mr. Lawrence, Miss Roe. John has come up to draw you." Mr. Lawrence stuck his awful pipe in his mouth and tried to look displeased. Miss Roe was obviously uninterested, and Miss Bassham said, "Oh, why did you bring him up to-night? There's really no one worth doing here to-night." Mr. Charles Lawrence frowned. Miss Kathleen Roe looked all the more uninterestingly at the floor. We said, "Where's Mr. Barnett?" She said he wouldn't be there to-night—he had to play an organ for 2FC, or something vague like that. And then everything was silent, with only the loud speaker in the next room booming away the usual background of something or other. John fidgeted about, looking at Mr. Lawrence and Miss Roe and Miss Bassham as though they were the strangest things he'd ever seen. Perhaps . . . perhaps . . .

Anyhow, the atmosphere was not very 2BL-ish, and something had to be done; so we began to tell Mr. Lawrence what a wonderful joke he put over the other night, and how much we appreciated it, insinuating that the only man we thought worth listening to over the air was Mr. Charles Lawrence. Eventually Mr. Lawrence grudgingly admitted this to be the case, and complimented us on some remarks of ours in a recent WIRELESS WEEKLY issue. He was becoming himself. In the next few minutes he made a remark which shook Miss Bassham into laughter and assertions that he was a bad, bold man. Mr. Lawrence smiled complacently, and put on a Bad Bold Mannish look which he keeps for such enjoyable occasions—a droll fellow—a droll fellow.

2BL was becoming itself again. Miss Kathleen Roe, encouraged by the returning warmth, was drawn into the general conversation, and made a few sprightly remarks on domestic affairs, because Miss Roe was married only recently, and still thinks it's rather good fun being married.

Just about then John took out his easel, or whatever it was, and drew Miss Bassham as you see her on the other side of the page; and he did a drawing of Mr. Lawrence, which may appear some other time, and he did Miss Roe's family nose and eyebrow, because Miss Roe believes in her family nose and eyebrow, and likes them very much, and treasures them as you might treasure a family heirloom. Remarkable!

Then we took John up the stairway and along the corridor to the control-room, and introduced him to Mr. Tom Innes, who was twiddling switches. Mr. Innes looked him over, and looked at us reproachfully, but consented to be



drawn. (John said afterwards that Mr. Innes's face was very hard to draw, because he was so young, and didn't have many lines or wrinkles. We told Mr. Innes about this afterwards, and he said, no, this was not the real reason. The fact was he had been listening-in to Miss Goodle Reeve's Aids to Personality talks during the day sessions on care of the face and hands . . . however, you don't have to believe this.)

Then John looked through the control-room window, and saw Mr. Conrad Charlton, the night announcer from 2BL; and he began to draw him, and so on and so on and so on. Eventually, after much labour and going down again to see how they looked, or if they looked something like his drawings, he was satisfied.

The Vern Barnett study disregards a little of that gentleman's waistline, and makes him look nearly as Mr. Barnett himself would like to look, which is admitting a great deal. Miss Bassham says she doesn't look like that, really. Mr. Stevens' handsome figure is remarkable, under the circumstances; and Eric Besemer's angelic face does credit to John's imagination. As John himself said, Tom Innes's is a hard face to draw. The family tradition of the Roe Nose and Eyebrow should be well preserved in our artist's sketch. Miss Varley's face has that indefinable charm, which John has either expressed or suppressed—we are not quite sure. We see no reason why our rising young artist should not go on to even greater triumphs—that is, unless he should happen to re-visit 2BL in which case anything might happen.

James



56

59

Our Next Number Will Be-

The popular 2BL announcer here defends the broadcasting of gramophone records--good records. He tells how many fine programmes can be obtained from the gramophone.



By CAPT. A. C. C. STEVENS

WHEN WIRELESS WEEKLY invited me recently to state my views in regard to the desirability or otherwise of employing gramophone records in radio programmes, I gladly hailed the opportunity to "break an earnest lance" on behalf of these much-maligned allies of wireless entertainment. In doing so, I would point out that I am not advocating the entire elimination of the human element in entertainment. The record is merely the auxillary of the flesh and blood artist.

Of course, there are records and records--good, indifferent, and positively "bad." We need only consider the first category. A bad record makes bad music. It is an offence and should be suppressed. Again, all listeners are not equally discriminating. What may be one man's musical pabulum may prove another's poison. In our present discussion we may safely eliminate the individual who knows two tunes, one which is "God Save the King" and the other "Which Isn't." His opinion would scarcely prove helpful.

Now let us take undue notice of those who demand nothing but the eternal cacophony of "jazz," and who take their pleasures, like all true Britons, sadly, and who would wallow in grief-laden "Blues" from early morn to dewy eve. Rather, in writing this article, I am addressing my remarks to that big majority of reasonable folk who prefer a good musical programme, neither too highbrow nor yet too lowbrow. For such the gramophone record comes, like a famous anti-bilious pill, "as a boon and a blessing."

"THE OLD ORDER CHANGETH."

Wireless enthusiasts will recall how, only quite a short while ago, when the big change-over in broadcasting was in the air, there was an outcry against the gramophone record in certain quarters. "Now you will see a change," said they; "real live orchestras will play for you"--"records will be scrapped"--"the only records broken will be the gramophone records," and so forth.

Yet, after a few months' trial of the new order of things, with several new ensembles catering for the public ear, what do we find? An unmistakable and irresistible demand for more and more gramophone record music. Why is this? It means surely that the gramophone record has won on its merits.

Record-making nowadays has reached a high pitch of perfection. Electric recordings give such magnificently true-to-life effects that it is small wonder that the listening-in world has, in the space of a few weeks,

capitulated. Even the all-conquering "movie" is only a glorified gramophone record synchronised to picture film.

Yet all this does not imply that orchestras have failed, or have no place in the field of entertainment. Not a bit of it. It means simply that whilst the average small orchestra, octet, or trio may register well enough on the air, it cannot hope to compete on the air with the world's greatest combinations as presented to the public per medium of the latest gramophone record. If one could assemble the musical talent that goes to form the Philadelphia Symphony Orchestra, or the Covent Garden Orchestra, for instance, in some Sydney hall, and broadcast their playing, the chances are the public verdict would be that the record would come second best. But as that is not possible, the record at the moment holds undisputed sway. Have we anywhere in Sydney or Melbourne or elsewhere in Australia, at the present time a trio that could play with the same artistry and musicianly insight as the Elman Quartet? Possibly this is a contentious subject, but, in my humble opinion, I say we have not.

Again the record steps into the breach. And so we could multiply instances of world-famous light orchestras, octets, quartets, dance orchestras, and so forth whose playing at present cannot be equalled locally, and yet can be heard and enjoyed by thousands through the magic of wireless. Man for man, Australian musicians are probably as good as anywhere else in the world, but Australia does not encourage these musicians, as is done in other countries.

Entire credit cannot be given to the record itself. Every day sees big strides being made in wireless transmission and reception, and experts tell us we are still only on the threshold of development.

Another reason why records are invaluable in the Broadcasting Studio is that they cover so wide a range of subjects. To-day you can get, at a moment's notice, the services, not only of the world's finest orchestras and other instrumental combinations, but also practically every living celebrity of the operatic stage or concert platform, as well as records of giants--such as Caruso--whose voices are stilled in death. Eminent speakers of the calibre of Bernard Shaw are at your disposal instantly. Plays, operas, full choral church services, oratorios in their entirety, can all be presented without tedious and costly rehearsals, without the use of land-lines, and all the expense attaching to a performance in a public hall, church, or theatre.

Humor, pathos, instruction, all are there in your studio cabinet, ready for the right moment. No delays are occasioned by placing of artists at their music stands, the tuning up of instruments, and so forth. A new needle, the pressing of an electric button,

He does not, however, advocate entire record presentations. Orchestras and artists will always be the mainstay of broadcasting, he maintains.

and, hey presto! a flood of melody goes out on the air instantly!

A recital designed to last an hour or more can be gauged almost to split second.

Last, but not least, there is the question of the economy of it all, and this, in days of mounting costs in every form of entertainment, is a matter which cannot altogether be disregarded, though this factor does not, I honestly believe, weigh at all heavily with those who are now seeking to improve the standard of Broadcasting in Australia.

MUSIC THAT STIRS.

Just how useful an ally to the announcer a gramophone record can be may best be illustrated by outlining an average session in any A class station. We will ask you to imagine yourself seated in the studio whilst the announcer commences the opening session at an early hour in the morning. The studio perhaps is chill, and the time necessitates electric light. The announcer takes his seat at his desk before the microphone, gives the call-sign, time, and a

cheery welcome to listeners. He is talking to country folk who have been hard at work on the farm since before daylight, and are now gathered in the homestead to have breakfast perhaps, and listen to the news--their chief concern. City and suburban listeners are preparing for the day's work also. It is about the time mother prepares breakfast, cuts sandwiches and generally gets her brood ready to go to school; and father exercises his vocal gifts under the shower, or inveighs against a blunt razor, or a stubborn collar-stud.

Visualising all this, the announcer realises that what is wanted is some bright, snappy music. He turns to the record cabinet, and out comes a Sousa march, or a rollicking one-step. Obviously, this is no time for heavy Wagnerian opera, or a dirge by some melancholy musical genius. Record after record of the right type is played. Then comes the weather report, some news from the morning papers, more music, still of a cheerful kind, until, say, about 9 o'clock, when the announcer realises most men, and all good children, have left their homes to carry out the day's work, leaving the women-folk to cope with the washing-up, laundry, bed-making, house-cleaning, and the one hundred and one other jobs that a busy housewife is called upon to do in a country where help is rather the exception than the rule.



THE PEACEFUL HOUR.

At this stage psychology plays its part. Women being the principal listeners, the announcer must cater for their mood. Are they weary? A little depressed? he asks himself. Probably they are. How to dispel this mood then?

Ah—Eureka! A love story—a tale of travel! Something to take them from the world of drab reality into the realms of golden romance or high adventure.

The morning story commences.

One knows that women appreciate this pause. They sit—maybe with some sewing or darning—and forget the little worries of the day, and get their bearings afresh.

And so the story ends.

Some more music is played. This time the music should carry on the atmosphere of the story. It should be romantic; tuneful melodies are needed that awaken old memories and sweeten life anew.



In this way the early morning session closes, and, in succession, follow—midday, afternoon, and evening entertainments. Each session has its definite plan and purpose to fulfil—each has its possibilities.

SPECIAL OCCASIONS

Then, too, there are special occasions when the record is indispensable. Such public days of observance, as Armistice day, Mother's day, Christmas day, all require special programmes, and the record cabinet, intelligently used, can meet every call. Even the King, members of the Royal Family, and famous statesmen are at your beck and call on special occasions.

RECORDS TO THE RESCUE

Let us imagine it is Christmas Day. Church chimes, carols, hymns. Dickens's immortal story of Scrooge, dance music. All the colors are there, ready to be squeezed out on the palette, so that the announcer of imagination may paint his Yuletide picture.

Or, perhaps it is Armistice day, and what we want now are martial items, bands, marching songs, hymns of hope and thanks-

giving, the majestic tones of the grand organ, the "Last Post" by the bugles.

Ah! You records, many a tender memory have you awakened, many a proud, yet tearful, mother have you comforted on their day of remembrance! Many an old "Digger," hard up against it, has squared his shoulders and plucked courage for the grim new battle against war's handicaps!

ISN'T WIRELESS WONDERFUL?

But do not let us end on a minor key. Another picture leaps to the eye. This is the bride, who is leaving her home in all her bridal array to go to church—she and that young lover of hers. The wide, wonderful world is before them. They are the torch-bearers. It is theirs to pass on the living flame. They want all the world to rejoice with them—to share the joy in their hearts.

Will we play a wedding march?

Why, certainly! Here it is, and at the appointed moment, on goes the great masterpiece of Mendelssohn, and a family, hundreds of miles away, pauses at the wedding reception to say:—

"Isn't wireless wonderful?"

LEARNING THE MORSE CODE

THE following interesting discussion on learning the Morse code, by two correspondents, will interest all those readers anxious to read the numerous Morse signals on the short waves.—

(To the Editor.)

"I have seen several schemes for assisting the beginner to learn the Morse code. None of them, however, seemed to me to be any easier than making the effort of memory required to learn the code without assistance.

The method I am about to explain is, so far as I know, original. I have tried it on three people who knew nothing whatever of the code. Of these, one knew half the code on reading the list over once. All three learnt the complete code in from a quarter to half of an hour.

"My method is this. I have represented each letter by a word or phrase, such word or phrase commencing with the letter to be learnt. It is easy for the learner to connect the letter C with the word "cantilever," and the letter K with the word "kangaroo," and so on.

Corresponding Syllables

"This, however, would not carry us much further, but, if we examine the words and phrases chosen, it will be seen that they have not been chosen at random. They have, in fact, been selected so as to make the accented syllables correspond with the dashes of the code, and the unaccented with the dots. "Cantilever," which represents the letter C, commences with C, and is accented on the first and third syllables, the second and fourth being unaccented. If, then, we substitute dashes and dots for the accented and unaccented syllables respectively, we obtain the dash dot dash dot of the code. Similarly, "Kangaroo" gives us dash dot dash for K, and "without price" gives us dot dash dash for W.

"Five letters, E, I, S, H, and V have been omitted. The first four are represented by one, two, three, and four dots respectively, and the fifth is easily remembered as the reverse of B, that is, V is represented by three dots and a dash, whereas B is a dash and three dots. For these five letters I naturally claim no originality of method.

"The learner will acquire the code even more thoroughly if he will work out a series

A discussion on methods of learning the Morse code—an invaluable aid to the S.W. listener.

of words and phrases for himself. When he has done so, he will find that he has learnt the code without being conscious of the fact.

"I do not know that all my words and phrases would pass the censorship of a purist, but they will serve. I may add that Jam-appes, which is part of the phrase representing J, was a battle fought between the French and the Austrians in 1792, and Xanthia, part of the word X, is a butterfly.

"In the words of the Roman poet—
" si quid novisti rectius istis.
Candidus imperti. si non, his utere mecum.

"Of which a rough translation would be: If you know a better 'ole, go to it.' I append my alphabet.—Yours, etc. H.R.C. (Mosman).

A	Above	—
B	Boisterously	— —
C	Cantilever	— — —
D	Daubily	— — — —
F	Fare, farthing	— — — — —
G	Go slowly	— — — — — —
J	Jemappes, French fight	— — — — — — —
K	Kangaroo	— — — — — — — —
L	Liquesequently	— — — — — — — — —
M	Mark time	— — — — — — — — — —
N	Naval	— — — — — — — — — — —
O	Off Cape York	— — — — — — — — — — — —
P	Peruse nightly	— — — — — — — — — — — — —
Q	Quite perfect scheme	— — — — — — — — — — — — — —
R	Returning	— — — — — — — — — — — — — — —
T	Two	— — — — — — — — — — — — — — — —
U	Unafraid	— — — — — — — — — — — — — — — — —
W	Without price	— — — — — — — — — — — — — — — — — —
X	Xanthialike	— — — — — — — — — — — — — — — — — — —
Y	Yonder steep crag	— — — — — — — — — — — — — — — — — — — —
Z	Zounds! Steadily	— —

Draubucks

A well-known reader of "Wireless Weekly," who is an experienced reader and sender of Morse, replies:—

"Undoubtedly there is considerable merit in the method of learning the Morse code suggested by 'H.R.C.' It would appear that by its aid the student could readily memorise the various combinations of dots and dashes which correspond to the letters of the alphabet.

"It must be understood, however, that the learning of the alphabet in terms of dots and dashes is not by any means the objective of the student who desires to acquire an ability to 'copy' Morse signals at a rapid rate. It is my opinion that the beginner who has learnt

all the letters as so many dots and sa many dashes is at a decided disadvantage just as soon as he endeavours to apply his knowledge to the reading of Morse signals. The fact that he has trained himself to associate one dot one dash and one dot with the letter 'R' causes him great difficulty on account of the fact that his mind is continually trying to pick out the dots and dashes in the received signals and to assemble them in some sort of a familiar combination.

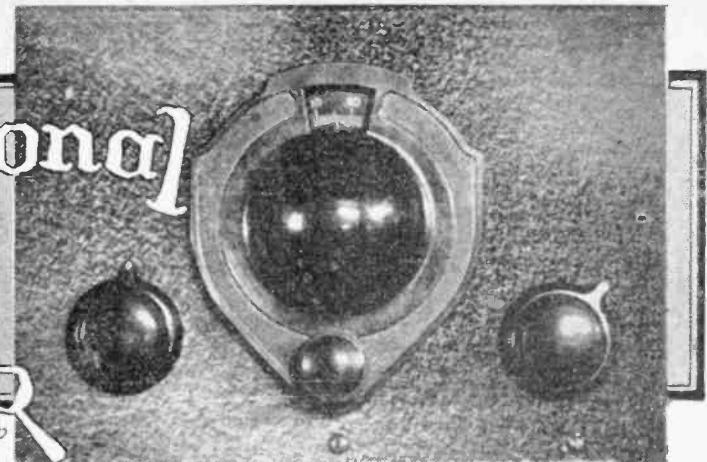
Association of Sounds

"If the beginner had learned the code in the manner suggested by 'H.R.C.' it is quite conceivable that his mental process, when attempting to copy received signals, would be something like this—'Let me see now, that was dot dot dash dot—that's the for a farr-shing one—yes, it's 'F'.' Even if the student had reached the stage where he could associate the dots and dashes with the letter, forgetting the key phrase, he would still find himself analysing the signals in terms of dots and dashes and then recalling the letter to which they corresponded. It is such intermediate stages of association which so handicap the beginner in his attempt to 'copy' the signals directly.

"It is my view that the beginner should actually avoid learning the dots and dashes which correspond with the letters. He should instead endeavor to associate the sound that the dots and dashes make directly with the letter itself. The letter 'F' should not be dot dot dash dot, but a certain sound which can be approximated by saying dit-dit-darr-dit. This means that a key and buzzer are quite essential aids to code learning, and that an assistant with some knowledge of the code is a very desirable addition. Starting off with the first few letters of the alphabet, they should be listened to not as dots and dashes, but directly as letters. When the buzzer says darr-dit-dit-dit it is not dash dot dot dot at all—it is 'B.' My experience in aiding friends to learn the code and my observation of others doing the same thing have made me convinced that the student working with the direct association idea would be reading signals at 15 words per minute when a similarly bright enthusiast, with a full list of associated phrases, would still be picking out dots and dashes which were the equivalent of 'Yonder steep crag'—and 'Y' or 'Zounds! Steadily'—and 'Z'—Yours, etc.

A.M.S. (Darlinghurst).

A Simple International Two Valve Receiver



An Easily-made Short-wave Set For The General Listener-in

By "BOSCO"

THANKS to short-waves, we virtually have the entire world at our window. Because of the great carrying power of short-waves—their ability to penetrate through such great distances—they are now being used with remarkable success by broadcasting stations throughout the world.

What does this mean? It means that even with the simple receiver described on these pages we can listen to music and speech from many parts of the world. Think of it! To be able to listen to stations in England, Holland, America, and even Russia, with a couple of valves and some simple apparatus.

Some short-wave receivers are quite complicated, but, providing the listener is prepared to use head-phones instead of the loud speaker, and to tune the receiver very carefully, there is no reason why the simple two-valve outfit described should not enable him to hear any of the important short-wave broadcasters from overseas. Simple receivers of this type have been used for years by amateur experimenters in communicating across the world with very low-powered transmitters. Scores of these amateur telegraph stations can be heard during the evening or early morning transmitting from England, Europe, North and South America, and most other countries.

This receiver resembles very closely the ordinary two-valve receiver that is used for broadcast reception. It has the same sort of aerial coil, secondary coil, and reaction coil. Then there is also the usual tuning condenser, regeneration control, audio frequency transformer, and amplifier valve. The chief differences from the broadcast receiver are in the sizes of the coil and in the arrangement of the tuning condenser. Let us go over the circuit in detail.

THE COILS.

The coil arrangement shown at the left side of the wiring diagram comprises three sections. The portion between the terminals marked "4" and "2" is the aerial coil. The outer end goes to the aerial, while the other end connects with

the secondary coil and also goes to ground and to the negative terminal of the filament battery. The section between terminals "2" and "1" is the grid coil. It is tuned by the .0003 mfd. variable condenser C1. This condenser on its own would be too big to permit the fine tuning necessary on the short-waves, and it is therefore shunted by the two-plate midget con-

This grid coil feeds the grid and filament of the detector valve V1. The usual grid leak and grid condenser are shown as R1 and C4. This grid condenser is smaller than is usual in the broadcast receiver, being of .00015 mfd. capacity. The plate of V1 goes to the reaction coil "5," "6," which is fixed in its position with respect to the grid coil. Adjustment of reaction is obtained by means of the midget condenser C3. The radio frequency choke in the lead to the audio transformer keeps radio frequency currents out of the audio frequency circuits and also makes it possible for the detector valve to oscillate freely when necessary. The audio transformer feeds the audio valve V2 in the usual manner, the phones being plugged in to the jack shown on the extreme right of the diagram.

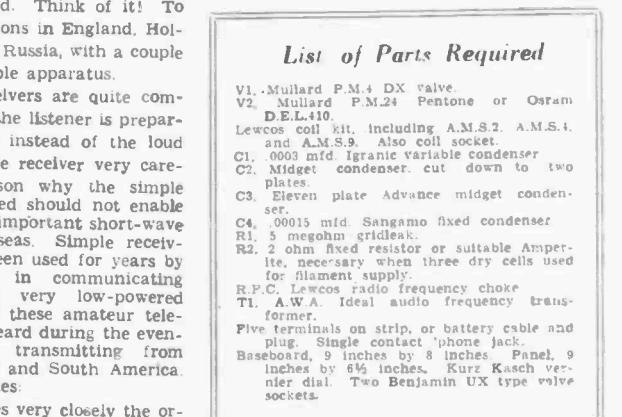
Should loud speaker reception be desired the output of this amplifier can be fed through another transformer and a second stage of amplification, which may be a part of the broadcast receiver. The head-phones should always be used, however, until the receiver is known to be operating quite satisfactorily.

FILAMENT SUPPLY.

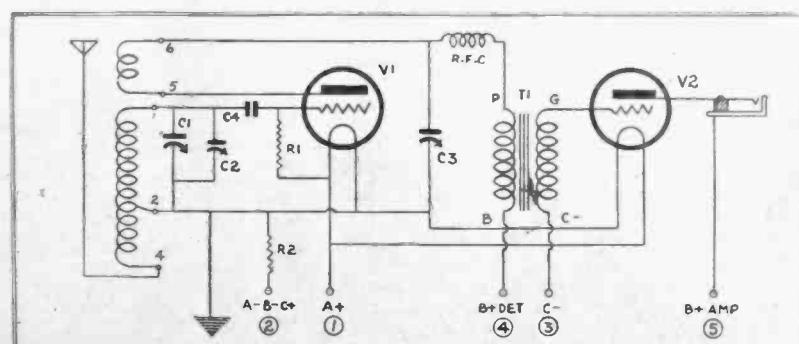
The two valves in the receiver have 4-volt filaments, and the total filament load is not more than 25 amperes. This permits the receiver to be operated from three ordinary dry cells, should a four-volt accumulator not be available. A three electrode valve is shown in the diagram as the audio amplifier, but there is no reason why a pentode should not be used. Much greater amplification would then be possible. The only change would be to connect the auxiliary grid of the pentode to the positive amplifier "B" terminal. A valve of the PM24 type would be admirably suited for the work.

CONSTRUCTIONAL DETAILS.

The baseboard of the receiver illustrated is of five-ply wood, and measures 9 inches by 8 inches. Five-ply is not, of course, essential. The panel is of heavy aluminium, 9 inches

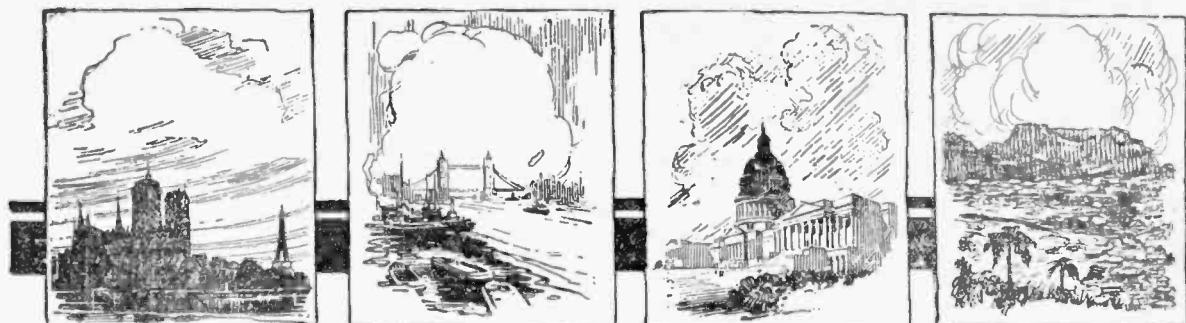


denser C2. The big condenser C1 is used to make appreciable changes in the wave-length of the receiver, but C2 is used to make all fine tuning adjustments.



The circuit of the International Two.

THE SHORT-WAVES PUT YOU IN TOUCH WITH



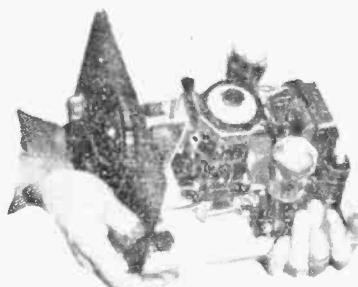
PARIS.

LONDON.

WASHINGTON.

CAPE TOWN.

wide by 6½ inches high. It it attached to one of the 8-inch edges of the base by three wood screws. Before attaching it, of course, it is necessary to drill the holes for the main tuning condenser C1, the vernier C2, and the reaction condenser C3. The exact placement of these condensers is not a matter of any great importance, but if the reaction condenser is on the right of C1 the wiring will be somewhat simplified.



This picture gives a good idea of the size of the set.

When these condensers have been attached to the panel and the panel secured to the base the valve sockets, the coil socket, and the audio transformer may be screwed into place in accordance with the lay-out diagram. Then the radio frequency choke, the 'phone jack, and the battery terminals may be put into position. In this receiver use was made of a six-point battery plug and cable. This proved very convenient, since the entire battery supply could be disconnected merely by pulling the battery plug and socket apart. The usual terminals may be used if desired, though our personal opinion is that they take up far too much space and are much too awkward to handle.

WIRING THE SET.

In the wiring of this set all leads have been carried above the baseboard. The wires could be carried under the base, but since there are so few of them it is hardly worth while. 18-gauge solid "Celselite" covered wire has been used throughout, all joints being soldered. The wires can be looped around the terminals instead of soldering to the lugs, but particular care will have to be taken to see that all joints are absolutely tight and making good contact.

It will be found that the terminals of the base of the Lewcos coils are numbered from one to six. These numbers correspond with those given on the circuit diagrams. Termi-

nals one and two go to the tuning condenser C1, the terminal one going to the fixed plates. The condenser C2 was cut down from a mid-get condenser until just one fixed plate was left. This fixed plate is connected to the fixed plates of C1. The moving plates are automatically connected through the panel. The plate terminal of V1 goes to terminal five on the coil socket, while terminal six runs to the fixed plates of C3, to the radio frequency choke, and thence to the "P" terminal of the audio frequency transformer.

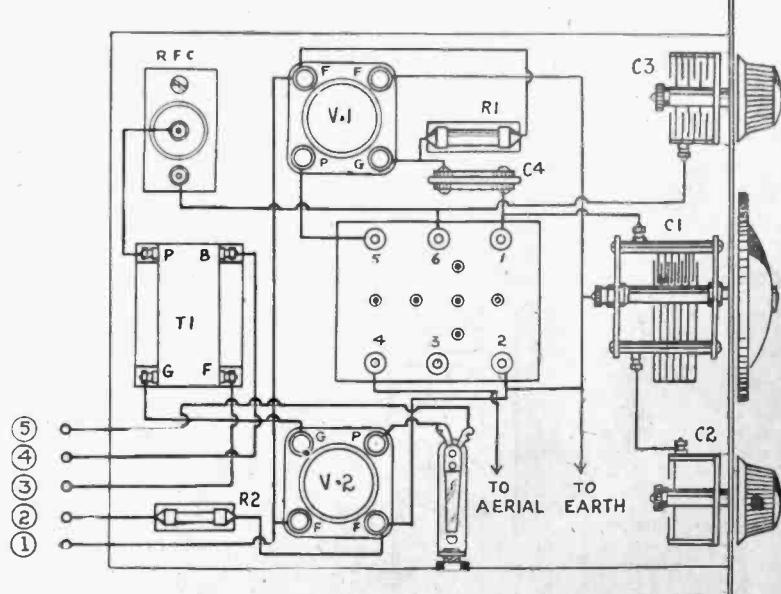
The filament terminals of the two valve sockets are connected in parallel, and then run to the two filament lugs on the battery plug. A resistor, R2, is shown in the negative filament lead, but this will not be essential if the four-volt valves are operated from a four-volt battery. If three dry cells are used it would be as well to use a fixed resistor of about 2 ohms to provide the necessary half-volt drop. If an Amperite suited for the 2 or .25 ampere filament current can be obtained it would be used in place of this resistor.

In wiring up the grid condenser and grid leak it is important to see that the grid condenser (which is held in position by its con-

necting wires) is well in the clear. In this receiver it is standing on edge between terminal one of the coil socket and the grid terminal of the valve socket. The grid leak is supported between clips on the grid condenser, but, as can be seen from the diagram, just one side of the grid leak makes contact with one side of the grid condenser. The clip on the other end of the grid condenser is insulated from the condenser terminal, and is wired to the positive filament lead. A separate mounting for the grid leak clips could well be used.

NOW FOR A TEST.

Before connecting up the batteries it is an excellent plan to go over the wiring very carefully in order to discover any possible fault. If some enthusiastic friend is available to make the check it will be an advantage. Providing everything appears to be in order the batteries may be connected. With this receiver three standard size dry cells were used for the filament supply, and a single 45-volt "B" battery for plate supply. 22½ volts were used on the plate of the detector and 45 volts on the amplifier. At this volt-



The wiring diagram

THE CAPITALS OF THE NATIONS OF THE WORLD



MOSCOW.



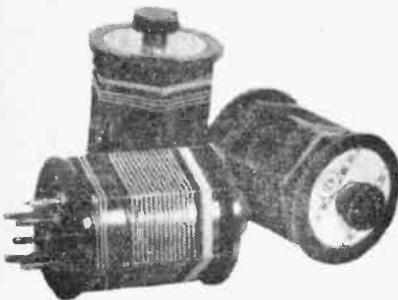
BERLIN.



CALCUTTA.



NEW YORK.



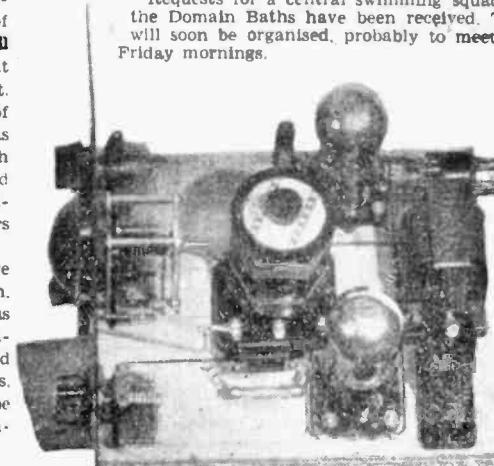
The "plug-in" coils used for different wave-lengths.

age no bias battery was necessary. In other tests 90 volts were used on the amplifier and a decided increase in performance was noted when the correct bias voltage was used. Even a higher voltage could be used on the amplifier with advantage, the bias used being in accordance with the instructions that come with the valve.

With one of the coils in position and the filaments lighted it should be found that an increase in the capacity of C3 will result in a "plop" as the detector goes into oscillation. Quite probably there will be a squeal at the same time. If this is so, it will be necessary to make an addition to the set. A .1 megohm gridleak should be connected across the secondary of the audio frequency transformer. This will eliminate the squeal that accompanies the starting of oscillation and will enable the detector to slide into or out of oscillation quietly. It is quite essential that

oscillation may be controlled in this way if the receiver is to be effective for short-wave broadcast reception. The process of tuning the receiver involves varying the adjustment of the main tuning condenser C1 and at the same time varying C3 so that the receiver is oscillating very gently. Then when a carrier wave is heard the setting of C3 is reduced very slowly and with C2 the carrier is held at the silent point, or "zero beat," until the receiver just slides out of oscillation. At this time, providing the signal is sufficiently strong, the music or speech should be heard. There is quite a knack in tuning this type of set, but anyone with experience with a similar sort of set on the broadcast waves should have no trouble. Of course, many of the stations heard will be telegraph stations, and unless a knowledge of Morse code working is had it will not be possible to understand what their transmissions are all about. However, a study of the list of short-wave transmissions in this issue and careful searching with the coil suited for the required wavelength should make it possible to locate the broadcasters without difficulty.

With the receiver described we used an aerial about 15 feet high, and 60 feet long. This enabled us to hear many of the foreign stations at good strength, and would be quite satisfactory in most cases. A larger aerial would probably be a decided advantage when conditions permit its erection.



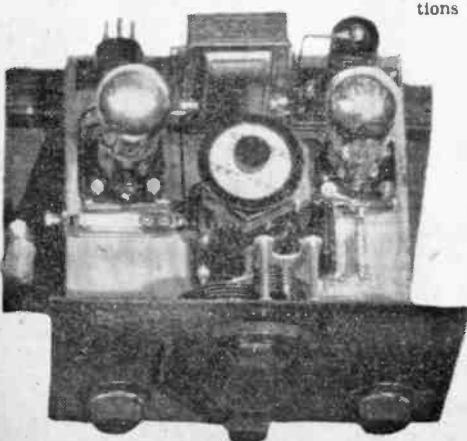
A side view of the set.

Representatives from Brighton-le-Sands have also written in, desiring the constitution of a swimming club in that district; and it is expected that the Coogee Club will be as big this season as last.

GIRLS' RADIO CLUB.

Another tennis club was opened at Lakemba last Saturday on a court lent free of charge. An expert coach was present, and the Lakemba club will be conducted in future on the lines of those already instituted at Strathfield, Rockdale, Penshurst, and Coogee. The Vaucluse Club will be opened on Saturday week; and later on there will be a club opened at Willoughby.

In future, it has been decided, the members of the Girls' Radio Club will accompany the members of the Boys' Club, conducted by Mr. Norman Lyons, on their Saturday morning excursions.



A plan view of the completed receiver.

NEXT WEEK

Constructional details for an exponential horn will be published in next week's issue of WIRELESS WEEKLY..

Hundreds of experimenters and listeners will be interested in this modern method of obtaining first class reproduction

SHORT-WAVE BROADCASTING STATIONS

Wavelengths, calls and approximate operating schedules of stations audible in Australia.

THE broadcast transmissions of the stations listed are, in the main, experimental in nature. Though some of the stations have been operating on the same schedule for some considerable time, and will continue to do so, others are in the habit of changing wavelengths and operating times at frequent intervals, in accordance with the dictates of the programme of experimental work being conducted. While the schedules correspond with those contained in the most recent data from overseas, it is quite probable that some changes have already taken place.

We would be pleased to hear from short-wave listeners concerning any amendments to this list, which would make it an even more accurate statement of short-wave broadcasting activities.

All times mentioned are Sydney time.

Wave-length. 70	Frequency. 4.285	RA97, Russia, exact location unknown. 7.30 p.m. to 11.30 p.m. nightly except Wednesdays.	31.4	9.554	PCJ, Hilversum, Holland. Fridays 4 a.m. to 6 a.m. and 8 a.m. to 1 p.m. Also Saturdays, 4 a.m. to 6 a.m. and 10 a.m. to 4 p.m.
49.4	6.072	UOR2, Vienna. Testing 8 to 10 p.m. and 8 to 10 a.m.	31	9.677	7LO, Nairobi, South Africa. 3 a.m. to 6 a.m. 5SW, Chelmsford. 1030 p.m. to 11.30 p.m. nightly except Saturday and Sunday. Also from 5 a.m. to 10 a.m. except on Sunday and Monday.
37	8.108	HS4PJ, Bangkok, Siam. Testing on Tuesdays from 11 p.m. to 1 a.m., Wednesday, and on the same morning from 4 to 6 a.m. Also on Fridays from 11 p.m. to 1 a.m.	25.25	11.751	W6XK, East Pittsburgh. Relays KDKA at intervals. No times available.
49	6.120	KZRM, Manila, reported at various times between early afternoon and 9 p.m.	24.5	12.240	KIXI, Manila, Weekdays, 5.30 a.m. to 7 a.m.
31.48	9.530	W2XAF, Schenectady N.Y. 9 a.m. to 3 p.m. Monday, Tuesday, Thursday, Saturday. Reception reported only after 1 p.m. Also transmits on alternate Sunday evenings to Byrd expedition.	23.35	12.850	W6XN, Oakland, Calif. Relays KGO Tuesday, Wednesday, Friday, from 3.30 to 7 a.m. Wednesdays from noon to 6 p.m.
31.48	9.530	W2XAD, Schenectady, N.Y. Tuesday, Thursday, Saturday, 3 to 8 a.m. NO reports available.	19.56	15.340	W2XAD, Schenectady, N.Y. Monday, 5.30 a.m. to 2 p.m. Tuesday, Thursday, and Saturday, 9 a.m. to 3 p.m.
			16.9	17.750	HSIPJ, Bangkok, Siam. Sundays, 10 p.m. to 12.30 a.m. Mondays, 4 a.m. to 6 a.m.

In Advance
of
New South
Wales, etc.

Comparison of Time.
Behind New South Wales, etc.

New Zealand + 1½ h.	N.S.W., Victoria, Queensland, Tasmania.	South Australia.	Japan.	China, Philippines, Western Australia.	Straits Entanglements (for Dutch East Indies and 19 min.)	India, Ceylon.	Aden.	Greece, Egypt, Turkey, S. Africa.	Central European Mats., Germany, Sweden, Norway, Gibraltar.	Greenwich Time (Great Britain, France, Belgium, Spain, Portugal).	Azores	Brazil (except Amazon and Acre Districts).	Uruguay.	Argentina.	Chile	Bolivia.	New York, Quebec, Jamaica, Peru	San Francisco, Vancouver.		
1.30 a.m.	Midn.	11.30 p.m.	11.0 p.m.	10.0 p.m.	9.0 p.m.	7.30 p.m.	5.0 p.m.	4.0 p.m.	3.0 p.m.	2.0 p.m.	Noon.	11.0 a.m.	10.30 a.m.	10.0 a.m.	9.17 a.m.	9.28 a.m.	9.0 a.m.	6.0 a.m.		
2.30 a.m.	1.0 a.m.	12.30 a.m.	Midn.	11.0 p.m.	10.0 p.m.	8.30 p.m.	6.0 p.m.	5.0 p.m.	3.0 p.m.	1.0 p.m.	1.0 a.m.	11.30 a.m.	11.0 a.m.	10.17 a.m.	10.28 a.m.	10.0 a.m.	7.0 a.m.	8.0 a.m.		
3.30 a.m.	2.0 a.m.	1.30 a.m.	1.0 a.m.	Midn.	11.0 p.m.	9.30 p.m.	7.0 p.m.	6.0 p.m.	5.0 p.m.	2.0 p.m.	11.0 p.m.	12.30 p.m.	11.0 p.m.	11.17 a.m.	11.28 a.m.	11.0 a.m.				
4.30 a.m.	3.0 a.m.	2.30 a.m.	2.0 a.m.	1.0 a.m.	Midn.	10.30 p.m.	8.0 p.m.	7.0 p.m.	6.0 p.m.	5.0 p.m.	3.0 p.m.	2.0 p.m.	1.30 p.m.	1.0 p.m.	12.17 p.m.	12.28 p.m.	Noon.	9.0 a.m.		
5.30 a.m.	4.0 a.m.	3.30 a.m.	3.0 a.m.	2.0 a.m.	1.0 a.m.	11.30 p.m.	9.0 p.m.	8.0 p.m.	7.0 p.m.	6.0 p.m.	3.0 p.m.	2.0 p.m.	1.17 p.m.	1.28 p.m.	1.17 a.m.	2.28 p.m.	1.0 p.m.	10.0 a.m.	11.0 a.m.	
6.30 a.m.	5.0 a.m.	4.30 a.m.	4.0 a.m.	3.0 a.m.	2.0 a.m.	12.30 p.m.	10.0 p.m.	9.0 p.m.	8.0 p.m.	7.0 p.m.	4.0 p.m.	3.30 p.m.	3.0 p.m.	2.17 p.m.	2.28 p.m.	2.0 p.m.				
7.30 a.m.	6.0 a.m.	5.30 a.m.	5.0 a.m.	4.0 a.m.	3.0 a.m.	1.30 a.m.	11.0 p.m.	10.0 p.m.	9.0 p.m.	8.0 p.m.	5.0 p.m.	4.30 p.m.	4.0 p.m.	3.17 p.m.	3.28 p.m.	3.0 p.m.	Noon.			
8.30 a.m.	7.0 a.m.	6.30 a.m.	6.0 a.m.	5.0 a.m.	4.0 a.m.	2.30 a.m.	Midn.	11.0 p.m.	10.0 p.m.	9.0 p.m.	6.0 p.m.	5.30 p.m.	5.0 p.m.	4.17 p.m.	4.28 p.m.	4.0 p.m.	1.0 p.m.			
9.30 a.m.	8.0 a.m.	7.30 a.m.	7.0 a.m.	6.0 a.m.	5.30 a.m.	3.30 a.m.	1.0 a.m.	Midn.	11.0 p.m.	10.0 p.m.	8.0 p.m.	6.30 p.m.	6.0 p.m.	5.17 p.m.	5.28 p.m.	5.0 p.m.	2.0 p.m.			
10.30 a.m.	9.0 a.m.	8.30 a.m.	8.0 a.m.	7.0 a.m.	6.0 a.m.	4.30 a.m.	2.0 a.m.	1.0 a.m.	Midn.	11.0 p.m.	9.0 p.m.	8.0 p.m.	7.30 p.m.	7.0 p.m.	6.17 p.m.	6.28 p.m.	6.0 p.m.	3.0 p.m.		
11.30 a.m.	10.0 a.m.	9.30 a.m.	9.0 a.m.	8.0 a.m.	7.0 a.m.	5.30 a.m.	3.0 a.m.	2.0 a.m.	1.0 a.m.	Midn.	10.0 p.m.	9.30 p.m.	8.0 p.m.	7.17 p.m.	7.28 p.m.	7.0 p.m.	4.0 p.m.			
12.30 p.m.	11.0 a.m.	10.30 a.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	6.30 a.m.	4.0 a.m.	3.0 a.m.	2.0 a.m.	1.0 a.m.	10.0 p.m.	9.30 p.m.	8.0 p.m.	8.17 p.m.	8.28 p.m.	8.0 p.m.	5.0 p.m.			
1.30 p.m.	Noon.	11.30 p.m.	11.0 p.m.	10.0 a.m.	9.0 a.m.	7.30 a.m.	6.0 a.m.	4.0 a.m.	3.0 a.m.	2.0 a.m.	Midn.	11.0 p.m.	10.30 p.m.	10.0 p.m.	9.17 p.m.	9.28 p.m.	9.0 p.m.	6.0 p.m.		
2.30 p.m.	1.0 p.m.	12.30 p.m.	11.0 p.m.	10.0 a.m.	9.0 a.m.	8.30 a.m.	6.0 a.m.	4.0 a.m.	3.0 a.m.	2.0 a.m.	Midn.	11.30 p.m.	11.0 p.m.	10.17 a.m.	10.28 a.m.	10.0 p.m.	7.0 a.m.			
3.30 p.m.	2.0 p.m.	1.30 p.m.	1.0 p.m.	Midn.	11.0 p.m.	9.30 a.m.	7.0 a.m.	6.0 a.m.	5.0 a.m.	4.0 a.m.	2.0 a.m.	1.0 a.m.	12.30 a.m.	Midn.	11.17 a.m.	11.28 a.m.	11.0 p.m.	8.0 p.m.		
4.30 p.m.	3.0 p.m.	2.30 p.m.	2.0 p.m.	1.0 p.m.	Midn.	10.30 a.m.	8.0 a.m.	7.0 a.m.	6.0 a.m.	5.0 a.m.	3.0 a.m.	2.0 a.m.	1.30 p.m.	1.0 a.m.	12.17 p.m.	12.28 p.m.	Midn.	9.0 p.m.		
5.30 p.m.	4.0 p.m.	3.30 p.m.	3.0 p.m.	2.0 p.m.	1.0 p.m.	11.30 a.m.	8.0 a.m.	7.0 a.m.	6.0 a.m.	5.0 a.m.	4.0 a.m.	3.0 a.m.	2.30 a.m.	2.0 a.m.	1.17 p.m.	1.28 p.m.	Midn.	10.0 p.m.		
6.30 p.m.	5.0 p.m.	4.30 p.m.	4.0 p.m.	3.0 p.m.	2.0 p.m.	12.30 p.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	7.0 a.m.	6.0 a.m.	5.0 a.m.	3.30 a.m.	3.0 a.m.	2.17 a.m.	2.28 a.m.	2.0 a.m.	11.0 p.m.		
7.30 p.m.	6.0 p.m.	5.30 p.m.	5.0 p.m.	4.0 p.m.	3.0 p.m.	1.30 p.m.	11.0 a.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	7.0 a.m.	6.0 a.m.	4.30 a.m.	4.0 a.m.	3.17 a.m.	3.28 a.m.	3.0 a.m.	Midn.		
8.30 p.m.	7.0 p.m.	6.30 p.m.	6.0 p.m.	5.0 p.m.	4.0 p.m.	2.30 p.m.	Midn.	11.0 a.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	7.0 a.m.	6.30 a.m.	5.0 a.m.	4.17 a.m.	4.28 a.m.	4.0 a.m.	1.0 a.m.		
9.30 p.m.	8.0 p.m.	7.30 p.m.	7.0 p.m.	6.0 p.m.	5.30 p.m.	3.30 p.m.	1.0 p.m.	Midn.	11.0 a.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	7.0 a.m.	6.30 a.m.	5.0 a.m.	4.17 a.m.	4.28 a.m.	4.0 a.m.	2.0 a.m.	
10.30 p.m.	9.0 p.m.	8.30 p.m.	8.0 p.m.	7.0 p.m.	6.0 p.m.	4.30 p.m.	2.0 p.m.	1.0 p.m.	Midn.	11.0 a.m.	10.0 a.m.	9.0 a.m.	8.0 a.m.	7.30 a.m.	7.0 a.m.	6.17 a.m.	6.28 a.m.	6.0 a.m.	3.0 a.m.	
11.30 p.m.	10.0 p.m.	9.30 p.m.	9.0 p.m.	8.0 p.m.	7.0 p.m.	5.30 p.m.	3.0 p.m.	2.0 p.m.	1.0 p.m.	Midn.	10.0 a.m.	9.30 p.m.	8.0 p.m.	7.17 p.m.	7.28 a.m.	7.0 a.m.	6.17 a.m.	6.28 a.m.	6.0 a.m.	4.0 p.m.
12.30 p.m.	11.0 p.m.	10.30 p.m.	10.0 p.m.	9.0 p.m.	8.0 p.m.	6.30 p.m.	4.0 p.m.	3.0 p.m.	2.0 p.m.	1.0 p.m.	11.0 p.m.	10.0 a.m.	9.30 p.m.	8.0 p.m.	8.17 p.m.	8.28 a.m.	8.0 p.m.	5.0 p.m.		

The above table will prove of assistance to "DX" enthusiasts who desire to find the time in foreign countries corresponding with any given time in Sydney.

GREENWICH TIME EXPLAINED.

Many Radio enthusiasts do not understand the time symbols which are sometimes used to indicate times of transmission and reception. Four figures form the time—the first two of which represent the hour, and the last two the minutes. There are twenty-four hours in a day, and from this we see that midnight would be 2400, 12 noon would be shown 1200, and 12.45 would be written 1245. The following list gives the hours only. Minutes should be placed in the last two figures, omitting the noughts. Greenwich time is almost invariably indicated in this manner:

2400—12 midnight; 2200—10 p.m.; 2100—8 p.m.; 2000—6 p.m.; 1900—4 p.m.; 1800—2 p.m.; 1700—3 p.m.; 1600—1 p.m.; 1500—8 p.m.; 1400—2 p.m.; 1300—1 p.m.; 1200—12 noon; 1100—11 a.m.; 1000—10 a.m.; 0900—9 a.m.; 0800—8 a.m.; 0700—7 a.m.; 0600—6 a.m.; 0500—5 a.m.; 0400—4 a.m.; 0300—3 a.m.; 0200—2 a.m.; 0100—1 a.m.

The AMATEUR EXPERIMENTER

— A Leader in Short-wave Progress

Mr. Howard Love, Federal President of the Wireless Institute of Australia, here tells how the foundation laid by the amateur in short-wave experimental work some years ago is now resulting in the organisation of the amateur into an efficient adjunct of the Defence Department.



Mr. Love answering his mail after a talk from 3LO

A LONG way back—about 1910—certain regulations were framed by the Commonwealth Government with a view to controlling the then limited use of wireless telegraphy. Provision was made in these regulations for amateur experimenters who were licensed to operate transmitters and receivers for communication amongst themselves on a wavelength of approximately 200 metres. The knowledge and the equipment available at this time was extremely limited. The best efforts to erect a station usually resulted in the production of a spark coil transmitter, and some modification of the very early microphonic or loose connection type of receiver. The number of people who were interested in this work was very small. Communication between these amateur stations was almost invariably limited to a range of approximately 100 to 150 miles.

Pre-war Wireless

There was a distinct thrill, however, in being able to communicate without wires even in this quite indifferent manner. This knowledge gradually spread and the number of amateur transmitters gradually increased, until just before the war there were a great number on the air who found considerable excitement in inter-communication and the listening for distant shore and ship stations on a crystal receiver. It should be clearly understood that no such thing as wireless telephone was in existence at this period, and an amateur, in order to conduct experiments of any description, had to be keen enough to master the Morse code before a commencement could be made. The fact that this had to be done was probably responsible for the inclusion among the amateurs of a good type of man who trained himself in his own time to become an operator.

In 1914 war burst forth in Europe. Australia began to raise her army, emergency regulations were proclaimed, and the navy took over control of all wireless communication from the Postmaster-General's Department. It was with much regret that the experimenter handed over his little parcel of equipment to the nearest post office for safe keeping for the duration of the war.

It was found that a great number of those who had "played" with their wireless transmitters prior to the war were sufficiently far advanced to be accepted by the navy and the army as operators with various units. It is this fact that has proved an inspiration since the war to the leaders of the amateur movement, and is largely responsible for the recent organisation of the amateur network in conjunction with the Air Force. However, as this is very recent history, may we be permitted to go on with the story.

After the war in the period 1920-22 it was thought possible that the Government would not re-issue amateur transmitting licenses. During the period of 12 or 18 months which

elapsed before the Government made a decision on this point, a great number of the pre-war amateurs and many additional enthusiasts concentrated on reception experiments. We still had no broadcasting stations, and the whole of the experimental work was carried out by listening to distant long-wave stations and to the local ship to shore traffic.

In 1922 the Wireless Institute of Australia organised reception experiments with a view to proving the possibility of reception of the American amateur signals in Australia. This proposal was considered highly ambitious and highly impracticable. By sheer hard work and concentrated efforts the experiment was a complete success, and was known throughout the Commonwealth as the trans-Pacific tests.

The success of these tests may or may not have influenced the department in arriving at a decision to grant the Australian experimenter transmitting licenses. With the development of the valve as a producer of high frequency oscillation, the new regulations banned the use of spark sets, so that all transmitters licensed in the latter part of 1922 or early 1923 were forced to use valve transmitters. The experiments were at first confined to a wavelength of approximately 400 metres, and later reduced to 300 metres.

About this time considerable developmental work was being carried out by the American experimenter under the guidance of the A.R.R.L. Any information which arrived from America was immediately lapped up by Australians, principally on account of the fact that the Americans had had a year or more lead in the transmitting field after the war, and any information which they were able to pass on was valuable. Listening experimenters in the Commonwealth were quite numerous about this time, and as they had no broadcast stations to listen to, their attention was quite naturally turned to the amateur band.

First Wireless Telephone

Charles Maclurcan, of Sydney, was probably the first amateur transmitter to install wireless telephone. It was very readily appreciated that his experiments were being followed very closely by a great number of listeners, particularly in the eastern States. His example was quickly followed by numerous other experimenters, and a small network of amateur telephone stations sprang into existence. The longer these stations operated the greater the number of listeners became, and so wireless broadcasting was given its first start in Australia by the amateur. The

establishment of high-powered broadcasting stations in the capital cities for a period completely overshadowed the work of the amateur, and listeners very readily forgot Mr. Maclurcan's Sunday night transmissions, when they were studiously advised to wind up the cat and put out the clock, in their excitement of receiving broadcast stations.

It was at about this time, the lead again coming from America, that the amateur turned his attention to the possibilities of the short waves. We were quite sure that the first person who suggested that a valve would oscillate at under 100 metres was considered a lunatic. The race to get lower and lower went on for quite a period, until it was found that at 80 metres two-way communication between the United States and Australia was a comparatively simple matter with about the equivalent of the power used by an ordinary electric globe.

Going Down the Bands

It was only a matter of time when the frequency crept up and the wavelength down, first to 60, then to 40, followed by 30 and 20 metres. Each particular band was found after considerable study and experiment to possess its own advantages and disadvantages for communication with the various parts of the world.

Communication by this time had been established two ways with Great Britain. Constant development of the short-wave transmitter and receiver persistently revealed that there were great possibilities in this field of radio communication. The majority of listeners found plenty to employ their time in listening to the broadcast stations, but the transmitting amateur settled down to pile up long-distance records and make international acquaintances. Many Australian amateurs have made friends over the air in practically all countries of the world, which has made one big brotherhood of the hams of the world. While this was all very well in its way it did little but encourage isolated experiments, and had the effect of making each amateur station owner self-contained in individual work. In the last three years it has been recognised that some movement had to be started which would provide scope for useful work of common interest.

Australia as a continent has, as everyone knows, the capital cities situated round the coast and scattered settlements inland. From the defence point of view, fast transport and equally fast communication are the two big problems which face us as a nation. Fast transport is provided by aeroplanes, and par-

ticularly by the Royal Australian Air Force. When occasion arises individual or groups of machines may have to fly into parts of the Commonwealth which are very remote from populated centres. There is always the risk of forced landings, and in such cases the need for rapid communication is evident. As amateur experimental stations are dotted all over the continent, it has been felt for some time that these station owners could be of considerable service to the Air Force in times of emergency.

This possibility, together with an outline of a scheme, was submitted to the Minister for Defence by the Wireless Institute of Australia. After prolonged negotiations, the Minister approved of the development of a scheme which included the amateur operators and their stations in an Air Force Wireless Reserve. While it was recognised that this scheme could not be relied upon for regular everyday communication, its possibilities in emergency were apparent. Indeed, there was no necessity for a permanent chain of communication, as this is already provided by the post office. The main object in the organisation of the reserve was to provide every station with a place in the scheme and sufficient work in the nature of exercises to keep an active interest.

This has been provided in the following



manner:—A section guard station has been appointed in each State, this station has all the reserve stations in each State under his control. When long flights are contemplated these stations are warned by wireless signal from Air Force H.Q. The guard stations then arrange a duty station to keep watch for the general call, "GQR." In this way H.Q. can keep in fairly close touch with the officer commanding flights into remote quarters. The scheme has been well tested under varying conditions, and has proved of exceptional value.

Probably the most notable example of the value of this very new organisation is its use in conjunction with the recent East-West air race. Some very important communication work has been carried out by the reserve stations, and the authorities are well satisfied that here is an organisation which is of national service without any cost to the nation. The question is very frequently asked, "What good does an amateur get out of transmitting?" The frank answer to this up till a few years ago was, nothing very much. He would perhaps get sufficient QSL cards to cover the wall of the shack and make a lot of friends in various countries of the world. To some amateurs this may be sufficient compensation.

Now, however, in order that the work of individuals can be co-ordinated, it is the aim of the Wireless Institute of Australia to find a definite job of work for each man in the particular field in which he is interested. If he is interested in self alone, he is

liberty to go on calling CQ from nine to twenty times and signing once.

The majority of amateurs, however, are keen to do something useful. All they require is leadership, co-ordination, and control, all of which will be provided by the co-operation with the R.A.A.F. Reserve, the linking up with the aero clubs for development of aircraft equipment, and the formation of purely experimental sections in each State. If a man is sufficiently keen to install a station at his own expense, surely he has bigger ideas than continual CQing and general "cluttering" of the air.



HILVERSUM.
HOLLAND

This aspect of the situation was very fully discussed at the recent Brisbane convention, and the decision of the Federal body to endeavor to find a field of useful work for every amateur operator is indeed a wise one.

It is quite impossible to build up any organisation to efficiency in a very few months—but as the R.A.A.F. scheme advances the unselfish and keen amateur will find more and more to interest him in reserve work. The reporting of aeroplane positions, weather conditions, and the like will all provide a most interesting field of operations. Keenness is the starting point for all this work. Efficiency will come quickly with training. We anticipate a bright future for the R.A.A.F. Wireless Reserve if the present interest is maintained.

By G. W. COOPER, who talks on Gardening from 2BL every Saturday morning at 10.10.

ALL ABOUT AZALEAS

NOW that the azaleas are in bloom in public and private gardens around Sydney and suburbs, many people are captivated by the blaze of color these plants produce at this time of the year. They are essentially spring-flowering plants, so it must be borne in mind that they cover a period of four weeks or so, and are gone for another twelve months. An amateur friend who admired the beautiful display of azaleas in the Botanic Gardens last week visited one of the florists' shops in the city and purchased several small azaleas in flower pots. Some had flowers on them; and on the ferry boat going home that evening he informed a friend of his intention to grow them like those in the Botanic Gardens!

As many people are planting azaleas now not knowing that they are slow in growth and take many years before they get anything like those in the Botanic Gardens, several of which are over 30 years old, I think a little advice on their cultivation will be appreciated.

Why are the Botanic Garden azaleas so beautiful every year? The answer is easy. First, the situation is ideal—an eight-foot stone wall on the north side of the plants effectively blocks the north-east winds, which blow from October to April in Sydney; also the southerly busters and the hot westerlies of summer are unable to sweep the ground of the Azalea Walk; therefore the plants are sheltered from all the wind that blows—a most important factor with well-grown azaleas. That still, yet open, position, where there is sufficient light to ripen the wood in autumn, is the ideal position for azaleas in the open garden. Early morning or late afternoon sun is quite all right, but between 10 a.m. and 4 p.m. in late spring, the whole of summer, and the early part of autumn the sun should never shine direct on to the azalea plants. Subdued sunlight in summer is the thing. It is far too hot in such open places as where roses are grown. During late autumn, the whole of winter, and the beginning of spring, the sun does not hurt them, providing they do not get dry at the roots.

Soil and drainage are the next things to deal with. All heavy, sticky soils, when wet, are unsuitable for azaleas. Sandy soils suit azaleas. Sandy peat (i.e., that which is sandy but full of roots and vegetation, such as Botany peat) is suitable to grow azaleas well. One foot deep of this sandy peat, on top of the ordinary subsoil, will suffice. Decayed leaves of all deciduous trees—poplars, oaks, elms, etc., are especially suitable—even decayed lantana leaves from around the harbor foreshores and gullies will help by putting suitable humus in the soil. Azaleas love leaf mould, sandy, peaty soil, and perfect drainage of the SUBSOIL. Always remember: If the subsoil is well drained so will the surface soil be well drained. Lime is fatal to these plants, and artificial manures are dangerous for amateurs to use. Very weak liquid sulphate of ammonia only is advisable after an ordinary watering during the growing season; but amateurs should rely on old cow manure in liquid form, or as a mulch to the surface soil.

Never disturb the soil under and around azaleas; only scratch and dutch hoe the sur-

face soil to keep down weeds. Never let the plants get dry roots during the growing season. If this occurs, red spider is likely to attack the under-sides of the leaves in summer and autumn. It is a good plan to spray the undersides of the leaves, whenever the atmosphere is dry in summer time, to keep down red spider. If the leaves suffer during summer so will the flowering season be affected next spring.

The single flowering varieties of azalea are the hardiest, and are the best for garden decoration. The semi-double and double varieties are far more tender than the single varieties. They can be grown in kerosene tins, tubs, and half-casks or boxes in backyards; but the sun must not shine directly on the plant. During very hot days the pots or tins can be set in a few inches of water as in a saucer, and taken away at 4 p.m., to be replaced next day should the weather be very hot. Of course, this only applies to very hot weather in summer time, and during the day only. Sufficient holes must be made in the tins or casks for drainage when you are growing azaleas under this method.

THE WEEK'S TALKS

DAY SESSIONS.

FRIDAY, OCTOBER 19.—2BL: 1.15, Mrs. Merridith Atkinson, "Incidents of Travel"; 2.30, Major Sanford Morgan, "A Visit to Zeddees"; 2.45, V. Bell, "Human Emotions".

2FC: 12.0, Francis Jackson, "Macbeth"; 2.2 Captain Roberts; 4.0, "Redgum," "Gardening."

SATURDAY.—10.10, G. W. Cooper, "Gardening," 2BL.

SUNDAY.—2BL: 5.0, C. N. Baeyeritz, "Moerser Philosophy."

MONDAY.—2BL: 1.15, Annie Hughes, "Actors and Actresses of To-day"; C. R. Hall, "The Australian Manufacturers' Conference"; 2.45, C. Price Conigrate, "Dr. Leichhardt—Brisbane to Port Essington."

2FC: 12.0, V. C. Bell, "The Public Forum," W. S. Reay, "Literary Personalities"; 4.0, A. S. Cochrane, A Reading.

TUESDAY.—2BL: 1.15, Claire Byrne, "Strumming and How to Treat It"; 2.30, Fred Arlington-Burke, "A European United States"; 2.45, Tom Gurr, "Bombay and the Great Plague."

2FC: 12.0, Illustrated music lecturette; 2.2, Museum lecturer; 4.0, Louise Homfray, "Impressions of a Wanderer."

WEDNESDAY.—2BL: 1.15, Goodie Reeve, "Aids

to Personality"; 2.30, Dr. Harold Norrie, "Lachlan Macquarie"; 2.45, The Storyteller, "Heroic Tales from the Sea—Frobsisher."

2FC: 12.0, Michael Sawtell, "The Philosophy of a Vagabond."

THURSDAY.—2BL: 1.15, Mrs. Mildred Musco, "Child Environment"; 2.30, Jean Armstrong, "Wherein Lies the Lure"; 2.45, F. H. Raward, "Cologne, Yesterday and to-day."

2FC: 12.0, Mr. Cochrane; 2.2, C. N. Baeyeritz, "Spoken English"; 4.0, Rose Antill de Warren, "Unseeing Eyes," and "An Episode of Anzac Day."

EVENING SESSIONS.

FRIDAY.—2BL: 7.5, Claude Corbett, "Sports"; 9.30, Wallace Nelson, "A Politician in a Fix."

2FC: 9.5, W. A. Oldfield, "Cricket."

SUNDAY.—6.40: D. R. Hall, "Prisons and Prisoners," 2FC.

MONDAY.—2BL: 10.0, Frank Downes, "A Recent Visit to Lord Howe Island."

TUESDAY.—2BL: 9.30, George Black, "In My Anecdotes."

WEDNESDAY.—2BL: 7.5, Graham Kent, "Bridge Playing."

THURSDAY.—2FC: 8.30, C. R. Hall.

OUTSTANDING FEATURES

*Programmes and items worth tuning in to next week. Chopin Recital
—Old Time Dance Night—A.B.C. Dance Band—Music Groups Reunion.*

DR. HAROLD NORRIE, who is a member of the council of the Royal Australian Historical Society, will be heard from 2BL on Wednesday, October 23, speaking on "Outstanding Personalities of Australian History." Dr. Norrie will deal with Lachlan Macquarie, the "Building Governor" of New South Wales.

Many of the early buildings of N.S.W. owe their origin to the enterprise and encouragement of Governor Macquarie. He furthered exploration, road-making, and building, and was responsible for the laying out of many towns and the erection of several churches.

BEFORE M. Hmelnitsky joined the Anna Pavlova Company as musical director he was associated in the same capacity with Zimbalist, Heifetz, Chaliapin, and Lipkovska. He toured the East, India, and Egypt with Pavlova, and came to Australia with her when she visited this country recently.

He has since been occupied making music rolls for Mastertouch Player Pianos, and has recorded no fewer than seventy-five. This is delicate work which requires a first-class musician.

He has been booked to give a series of thirty-five concerts throughout New South Wales, and will remain here for some time as a permanent member of the A.B.C. musical staff. He will give a Chopin recital from 2FC on October 23, when listeners will have their first opportunity of hearing his piano-playing.

THE revue which will be broadcast by the Sydney Operatic Society on Saturday, October 19, from 2BL has been planned to include every type of song, from Hawaiian melodies to nursery rhymes. Sea chants and old time choruses follow each other on the programme side by side with Tosti's Venetian Song and Gounod's Serenade.

MISS THEODORA STEPHENS, who was described by the critics as "a pianist of exceptional ability," will make her initial bow before the microphone on Tuesday, October 22, from 2BL. Miss Stephens is a pupil of Laurence Godfrey Smith.

LOUISE HOMFREY has only recently returned from a season in London, where, besides her stage work, she did a good deal of broadcasting. Her remarkably deep voice has earned her the name of "The Lady Baritone," but she is all the more popular because her voice, besides being of clear tone and great range is so unusual.



LOUISE HOMFREY.

ERIC WELCH will broadcast descriptions of the following Spring meetings from 3LO:

Saturday, Oct. 19: Caulfield Cup and other events.

Saturday, Oct. 26: Moonee Valley Gold Cup, W. S. Cox Plate, and other events.

Saturday, Nov. 2: Victoria Derby and other events.

Tuesday, Nov. 5: The Melbourne Cup and other events.

Thursday, Nov. 7: The Oaks and other events.

Saturday, Nov. 9: The Steeplechase and other events at Flemington.

Monday, Nov. 11: Williamstown Cup and other events.

Many of these events will be relayed and broadcast by stations in other States.

"THE TWO SAD SUNBEAMS" will entertain listeners of 2BL on Saturday, October 19. Sibley and Sayles' turn is very popular with Sydney audiences, and as practically all their songs and jokes are specially written by Sibley, the partners have an advantage over comedians who are not so original.

MR. JAMES DONNELLY, the originator of "Medley and Motley," which ran for fifty consecutive nights through 2FC, and composer of the new radio serial, "The Jazz Spider," writes plays and sketches for a hobby which is quite natural in Australia.



JAMES DONNELLY.

Mr. Donnelly was for several years connected with some of the largest journals in the United States. Leaving Journalism, he accepted the post of director of music at the University at Chicago, where he stayed for three years. He left there to play the lead for two seasons with the famous Lincoln Centre Players of Chicago.

He has also had the experience of entertaining the radio audience of America through a chain of stations which stretches from coast to coast. Since his arrival in Australia Mr. Donnelly has written paragraphs and verse for the Sydney "Bulletin."

His two radio plays, "The Cry in the Night" and "The Garden of Buddha," were successfully broadcast through 2FC a few weeks ago. Mr. Donnelly has written numerous radio plays, the most notable being "The Jazz Spider," "The Cuckoo Clock," and "The Son of Ugwa." His new serial, "The Jazz Spider," is the Edgar Wallace type of thriller, full of atmospheric effects, which are carried out by the studio producer, Mr. Laurence Halbert.



ONE of Aunt Goodie's popular assistants in her Thursday night children's Hour is Mary Stevens, the vivacious daughter of Mr. A. C. C. Stevens, studio supervisor of BL.

Mary S. is a versatile young lady, a ballerina dancer in several leading musical comedy productions of recent years, and is the possessor of a sweet soprano voice, which she uses in Aunt Goodie's Session.

MR. WALLACE NELSON'S Friday evening confidences are marked by originality and a dour Scottish sense of humor. You would be very foolish not to tune in to 2BL for this series of talks every Friday evening.

The whole presentation will be in the form of a recital interspersed with vocal items by well-known radio personalities, and solos by members of Cec. Morrison's Band.

OWING to the great success of the hour of Jewish music heard from 2FC on August 26, the Australian Broadcasting Company, at the request of many listeners, has arranged another hour of Jewish music to be broadcast from 2FC on Sunday, October 20, from 7 till 8 p.m.

Mr. L. Shifreen, conductor of the Great Synagogue Choir, has charge of the programme, and will be assisted by the Sydney Jewish Club Choir. The soloists are: Bernard Lassen, Betty Vinograd, and Beth Sampson.

Mr. Shifreen has chosen several lively folk songs for inclusion in this programme, some of which are—"The Cobbler," "A Cantor for the Sabbath," "Such a Pretty Girl I am," "Let's be Happy," "The Rabbi Crossed the Sea," and "A Ditty." Synagogue compositions will include: "By the Waters of Babylon," "Father of Mercies."

THREE are not many men who can boast of having been in gaol in Belgium, France, England, Italy, Manila, China, Japan, and in all the States of Australia. The Honorable D. R. Hall, ex-Attorney-General of New South Wales, enjoys this unique distinction.

In his long association with the prisons whilst he controlled those in New South Wales and visited others elsewhere, he acquired a fund of anecdote and a range of knowledge of crime and its punishment probably unequalled by any other man in Australia, and his recent Sunday evening talk on "Prisons and Prisoners" proved so very interesting that many requests for a further address were received.

Mr. Hall will continue his remarks on the same subject per medium of 2FC on Sunday evening, October 20, at 6.40.

In this talk Mr. Hall proposes to discuss mainly the two questions: (1) How can crooked men best be induced to reform, and (2) What are the possibilities of innocent men being incarcerated in error?

QONE of the most interesting broadcasts ever to be made through 2FC will be a description of the North Shore Bridge on Sunday afternoon, October 20, from 3 to 4.30 p.m.

A description embracing the minutest detail of this great undertaking will be given by the designer of the North Shore Bridge, Dr. J. J. C. Bradfield. Dr. Bradfield will be assisted in the broadcast by Mr. Norman Lyons, who has charge of the A.B.C. Younger Set Session, and the well-known lecturer, Mr. C. R. Hall.

The bridge description will be given in the simplest language. Microphones will be installed at various points, through which the description will be given.

On October 30 a description will be broadcast from the North Shore Bridge workshops at Milson's Point. Dr. Bradfield will again direct the description, assisted by Messrs. Norman Lyons and C. R. Hall.

A REUNION of the Music Groups of Australia will be held at the Conservatorium on October 21. There are at present twelve of these music groups, and the president of each group will attend the gathering. The aim of the reunion is to stimulate enthusiasm and to give the public some idea of what this modern movement is doing.

Mr. Oliver King, who introduced the Music Group movement into Australia, will explain, at the close of the programme, the need for these groups and the success they have achieved in America.

The programme will be opened by an address by Lady de Chair, followed by numbers sung by the Conservatorium Choir, and piano solos by Miss Dorothy Gibbes and Miss Besie Coleman.

An unusual feature of the programme will be the Sonata by Handel for the piano and two violins, played by Miss Margaret Chalmers, Mr. Henri Staell, and Mr. T. H. Kelly.

The programme, after the address by Mr. Oliver King, will conclude with community singing. The reunion will be broadcast through 2FC.

A BRIGHT and breezy programme will be given from 3LO on October 22, when the Versatile Four, under the direction of Ted Nelson, will contribute some original comedy and vocal items. Apart from their very excellent repertoire of ballads and light operatic ballads, the Versatile Four specialise in humorous and the more popular form of vocal quartettes.

NEXT Sunday afternoon, from 2BL, at 4.30, Madame Grieg will give a gramaphone recital of Schubert's "Unfinished Symphony."

"**P**OPULARISED Broadcasting" is the object of the Australian Broadcasting Company in presenting such programmes as that from 3LO on Friday night, October 18.

This includes: St. Augustine's Boys' Band of Geelong; Molly Mackay, the well-known soprano; Lloyd Powell, the famous Welsh pianist; The Sundowners' Male Quartette; J. Harcourt Bailey, entertainer; The Graham Howatt Entertainers; A.B.C. String Quartette; and J. Howlett Ross.

The star attraction, of course, will be Lloyd Powell, who will play "Concerto in A Minor" (Schubert), accompanied by the National Broadcasting Orchestra, under the direction of William G. James, and conducted by Percy Code.

NEXT Sunday evening, between 8.30 and 10 o'clock, two song cycles will be presented from 2BL, under the direction of Mr. G. Vern Barnett, by a quartette made up as follows:—Bertha Waters, soprano; Amy Oestinga, Lance Jeffree, tenor, and Peter Sutherland, bass.

The cycles are: "Wind Flowers," by Arthur Somervell, and "Flora's Holiday," by H. Lane Wilson. "Wind Flowers" is a series of modern songs and quartettes composed round poems by Christina Rossetti, Sydney Dobell, Shelley, and R. L. Stevenson.

"Flora's Holiday" is a delightful setting of Old English works, reminiscent of the English countryside, for quartette and soloists.

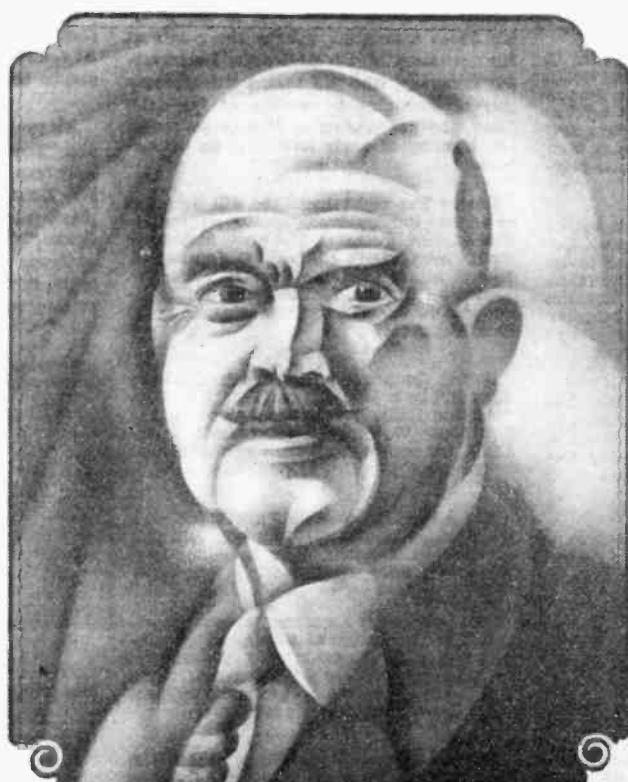
JAN RUBINI, the musical director and violinist, has been engaged to broadcast from 3LO on Wednesday evening, October 23. This distinguished artist will broadcast in conjunction with Adele Crane.

PAUL JEACLE has brought his clever band of jazz musicians to 3LO, where they are proving most popular. Mr. Jeacle commenced his professional career at the unusually early age of four, when, as a tin-whistle expert, he filled many engagements, while at eight years he had joined a company and toured the Far East for five years, attending two command performances.

On his return to Australia he played many parts in comic opera, and finally turned his attention to jazz. When filling an engagement at an up-country station the Prince of Wales, who was the guest of honor, asked permission to play on the drums.

It was on the advice of the Prince that Mr. Jeacle turned his attention to the saxophone, and to-day is one of the most popular soloists in Australia. Each individual member of his band is a soloist of repute.

A SEASONABLE talk on "Rose Culture" will be given from 3LO on October 25 by Mr. James Allan, the president of the National Rose Society of Victoria.



Boy's caricature of the "Hello Man," Mr. A. S. Cochrane.



This Week's Programme Personality

At Last ~ THE MAN WHO KNOWS EVERYTHING

SI X months or so ago, Mr. Norman Lyons began a bigger boys' session from 2BL. It was just an experiment, and expanded from a few minutes one evening in each week to take in more and more time more and more often. At first, Mr. Lyons was not Mr. Lyons at all—just Mr. Norman; but as his clubs grew, and as people grew more and more interested in his talks and excursions, it became impossible for him to keep his name back, and he emerged as the Mr. Norman Lyons he is, and allowed WIRELESS WEEKLY to print his photograph.

Mr. Norman faces the camera as a not very tall man in the prime of life, whatever that conveniently may be, with a persuasive manner, keen grey, calculating eyes, widened always in external speculation, a head in which the masses are well balanced, set in another mass which appears quite capable of holding it; firm hands and remarkably small feet. Remarkably small. If exteriors have any significance, he is a man who thinks hard, decides coolly, and steps lightly.

If that gives you the impression that Mr. Lyons wasn't born yesterday, you have the right impression. We did not inquire when Mr. Lyons was born; but it was not yesterday—not by a long chalk. But it is known that he went to school when he was a child, and then left school, and was apprenticed to a watchmaker on his father's recommendation. The watchmaker carried on the lucrative, but unfortunately unlawful, business of a starting-price bookmaker, and very soon found out that young Norman Lyons was going to prove a hindrance to his profession, which is very nice to hear about little Normie, and confirms the good impression we always had of him. So the naughty watchmaker put his apprentice to the task of regulating a new shipment of cuckoo clocks—several gross of cuckoo clocks—in a back room, well out of the way. There were the clocks hanging all over the wall, and there was young Norman Lyons industriously regulating them; and at a given hour of the day these clocks would begin to do their duty, one after another. So:

"Cuckoo!
"oo-Cuckoo!

"Coo-Cuckoo! 'cuckoo! 'oo! Cuckoo!"

For the first day, as Mr. Lyons says himself, "they nearly drove ME cuckoo"; but on the second day they exercised a soothing in-

fluence, and young Norman Lyons was lulled asleep at his post by the repeated soft cooings.

Enter the starting price watchmaker.

Exit the S.P. watchmaker, returning with the principal of the business. Triumph of bookmaker-watchmaker. Disgrace of young Norman Lyons, who had to find his next job all by himself.

The advertisement said that a moulder's apprentice was what was needed, and Norman Lyons attended in person, in his best suit and prettiest tie, to ask for the job. The would-be apprentices took no notice of this bright young man, who walked straight into the office. "What can I do for you, sir?" asked the manager, or whoever it was. Anyhow, he got the job on points for surprise tactics, and was duly apprenticed and served his time through all branches of engineering, ending up as a draughtsman or something like that.

Later on he became mixed up with boats and ended up with a harbor and rivers master's ticket.

Then he went into business, selling chemicals and most of the other things you sell when you go into business.

He wrote some poetry.
Short stories.

And novels, which were accepted and published;

Left his original business connections, and went into business by himself;

And became a crack rifle shot in between tunes.

Now that is what one might call, speaking advisedly, quite a remarkable career. Something unusual in careers. We ourselves, for instance, have not careered like that.

Early this year, Mr. Lyons got the idea that bigger boys should be catered for over the air. He thought they might be interested in "the miracles of nature, the natural laws which govern the commonplace occurrences round us, the basic mechanical movements applied in some form to all machinery, the workings of the government of the people, and a thousand and one other things, the understanding of which gives not alone knowledge, but power and fitness to cope with life's business."

He spoke to Mr. Anderson about this idea, and the result was the first bigger boys'

session from 2BL in the evenings, which soon convinced Mr. Norman that his ideas of what bigger boys wanted to know were all he thought they were and a good deal more, the addition being the difference between Mr. Lyons' catalogue and the rest of crea-

tion.

Not satisfied with just answering questions, Mr. Lyons began to organise a series of excursions to factories and places of interest to boys, and the attendance at these excursions was phenomenal. They went to Garden Island, visited an oil installation, through motor assembling works, and so on. Then Mr. Lyons noticed that, of all the letters addressed to him, an enormous number of questions were about aeroplanes. WIRELESS WEEKLY began to print instructions for building model aeroplanes, and with this co-operation Mr. Lyons formed the Model Aero Club. Then he roped in the Boy Scouts' Association, and became perhaps the first Radio Scout in the world. His appointment as Radio Scout added fifteen thousand boys to his audience. These things were just forming into order when the Australian Broadcasting Company took control.

The value of his sessions was immediately recognised, and he was allotted three nights a week for his talks. On Mondays he runs the Aero Club session; on Wednesday, the Boys' Radio Club; on Friday, the Boy Scout session. These all come under the grouping of the A.B.C. Younger Set Sessions, which Miss Gwen Varley supplements with a Girls' Radio Club and a Girl Guide session.

"I don't pose as a high-brow," says Mr. Lyons, "nor did I claim to answer every question a child can ask without a good deal of worry and thought. But I do answer every question, and in doing so I always envisage both the question and the answer as they appeal to the questioner."

"You can't 'talk down' to children nowadays and get away with it; you must give adequate reasons for all explanations; and you must speak as man to man, or you will not have an audience among modern boys. It is to the credit of all my questioners that since my session started not one foolish question has been asked."

"Up to date, I have not been clean-bowled with any question; but I admit some very close shaves, and tight corners; and I stand in fear of the future always."

Anyhow, we are going to ask Mr. Lyons what he thinks of the title of this interview.

That ought to stump him.
Between his natural modesty—
And his love of Truth . . . !

Wireless Weekly

Incorporating "Radio in Australia and New Zealand."

FRIDAY, OCTOBER 18, 1929.

THE SAFETY VALVE

SOMEONE wrote to the "Safety Valve" the other day asking why any correspondent who had a grouch against the broadcasters should air his views in public instead of writing direct to the offending station.

There is a very just reason why listeners do this. But it is interesting first of all to examine the volume of correspondence received from listeners and note the divisions into which the letters fall.

Of the first 1093 letters received by the A.B.C. in New South Wales, 895 were in appreciation and 198 of criticism. These last fell into five divisions; 72 protesting against alterations in news and weather sessions, 25 complaining of the poor modulation of 2FC, 25 against delayed race results on the first day of the change-over, 41 of the dropping of one church service, and 35 general complaints.

On the other hand, of the first 100 letters received in this office after the change-over, 93 were of criticism and only 7 in appreciation. A representative number of these have been published so that an analysis is unnecessary.

The contrast provided by these figures is not so unusual as may seem. Letters of appreciation (unless the writer believes the degree of praise to be inadequate if expressed other than publicly) manifestly are not directed to WIRELESS WEEKLY. The artist or the programme manager is the proper recipient for kind words.

But with letters of criticism it is a different matter. Suppose in a quiet week four letters reach the programme manager on the same day stating that so-and-so's performance was "poor," "in bad taste," "disgraceful," and "positively deplorable." Such condemnation is likely to influence the programme manager to cancel further acts by so-and-so, who silently disappears from the programmes.

Yet an injustice may possibly be done the performer. The same letters published in the "Safety Valve" may produce many replies in his defence by listeners who enjoyed his performance but thought no more about it, in any case an opportunity for both sides of the case to be heard would be provided.

This is the reason why correspondents often ventilate their gourches in public. It also has the effect of acting as a corrective—a safety valve for

suppressed indignation, annoyance, or dissatisfaction, which, by its action, restores the balance of opinion. Open comment on the programmes is the fairest and healthiest method of criticism.

THREE will be great doings at 3LO on October 25, when the "Radio Redskins" smoke the pipe of peace and hold the Big Chief Pow Wow. A great company of braves and squaws has been mustered for the occasion, and with duets, quartettes, and ensembles will keep the ball of fun merrily rolling while they are before the microphone.

Big Chief Harcourt Bailey has written some appropriate and witty dialogues, while the Sundowners will introduce some "totem" harmony.

THE entire gramaphone-reproduced performance of Handel's "Messiah" will be given from 3AR on October 24. Listeners will be afforded an opportunity of hearing this magnificent work under ideal conditions, with the world's leading oratorio artists, which include Hubert Elsdell (tenor), Harold Williams (baritone), Muriel Brunskill (contralto), and Dora Labette.

These artists will be associated with the B.C. Choir and the Queen's Hall Orchestra, and the entire performance is under the direction of Sir Thomas Beecham.

BASSOS

A Friendly Comment by Oliver King on behalf of the Bassos

MR. OSWALD ANDERSON'S very interesting article on the comparison of B.B.C. and A.B.C. programmes makes the statement that "those receiving the least work were sopranos and bassos." I would like in friendly banter to state the case for the bassos.

On examining the broadcast programmes of London and America, one finds that there is a preponderance of baritones and mezzos, but because this is so it does not necessarily follow that they have been chosen to the exclusion of the sopranos and bassos.

On looking over the general garden you will find that there are more sunflowers, cosmos, and geraniums, whereas the flowers of extreme depths of tone and colour are rare and more exclusive. We admire the sunflowers, etc., but because they are prolific it does not necessarily follow they are the elect.

On the contrary, with the few bassos there are there has always been genuine appreciation. Malcolm McEachern, of England, is a regular broadcast artist, and his low notes are a delight to all England.

One of the leading concert agent firms in England, Lionel Powell and Holt, told me that "you could count the bassos of England on one hand," and this would account for the infrequency of bassos on the air. The statement that those receiving the least work were sopranos and bassos is one of the best arguments that these voices of rarity should be given greater opportunity.

Now, sopranos. I have spoken up for the bassos, can we hear something from you next week?

THESE "ONE-LUNGERS"



Wife: "Why the worried look, Herbert?"

Hub: "I've just got Alaska on my one-valve set—now, who is going to believe that when I write to the Safety Valve?"

Let's Have Brighter Programmes on Sunday

Dear Sir,—Suggestions for improving present radio programmes are said to be welcomed. The following one, though not new, would nevertheless remove the greatest obstacle to the advancement of radio, if acted upon.

Sunday is the day when the set owner has his chance to listen in. It is the one day of the week usually that he spends at home. It is the day more than any other that social gatherings are organised at his home. It should be the big day in radio.

At present the Sunday programmes from the A stations are all similar—painfully so. Obviously the day is regarded as an off-day, when nobody listens in much (they are pretty right there, too). The programmes start late, finish early, and are interspersed with long stretches of "close down" and gramophone records. All music offered is studiously solemn and heavy. Nothing with a note of joy or happiness brightens the depressing atmosphere. The performers usually are of a more inferior calibre to those of the week days. The gramophone records are carefully chosen so as not to shatter the old traditional air of gloom, and even the announcers' voice seems to have acquired a solemn and serious tone, much as if he were partaking in one of the innumerable church services that drone in monotonously during the morning, should the set be turned on.

It is realised that this class of programme is wanted by a certain proportion of listeners. They are certainly entitled to be catered for. But the existence of a class whose taste lies in the opposite direction cannot be denied, and the programmes from at least one station in Sydney and in Melbourne should be more suited to their requirements. The militant minority should be satisfied with the other half-dozen A stations.

Mr. Albert is the largest music seller in Sydney. He should know that selling records and music of such songs as "Weary River" and "Glad Rag Doll" is a much better position than trying to dispose of the high-souled but joyless efforts of, for instance, Tschaikowsky and his colleagues. The Sunday social, except in occasional instances, entertains itself with music far more modern and brighter than that dispensed by the broadcasting stations at present.

This is my suggestion:—Let one station in Sydney and Melbourne, respectively, preferably 3LO and 2FC, make Sunday the big day, the day with the brightest and happiest programmes of the week. Even at the expense of week day programmes, get the best performers together for this day, such as the Australian Broadcasting Company's Troubadours of Melbourne or the Australian Broadcasting Company's Dance Orchestra of 2FC. From these two stations at least cast aside the old fallacies that to be miserable on Sundays is to be good, and that all modern music, other than hymns and national anthems, is "jazz." Jazz, eccentric but entertaining, has been dead these last fifteen years.

Remember that, as already mentioned, this

The Safety Valve

Readers are urged to express their opinions on matters pertaining to broadcasting. If you have something to say, here is your chance of expression—your safety valve. The editor assumes no responsibility for statements made by readers and published on this page. Anonymous letters are not considered.

suggestion is not to deprive the listener who prefers the present programmes of his choice. But there are more than one first-class broadcasting station in each of the cities mentioned, and all sets are fitted with dials. All tastes should receive consideration.

I am convinced that this experiment, if organised with an intelligent conception of what is most appreciated by the average listener, would soon lift radio out of the rut into which it seems to be in danger of settling.

Yours, etc.,
BLUE SUNDAY.
Hay.

* * *

Presentations at 4QG

Dear Sir,—I read with interest the article, "Individuality in Presentation," which appeared in WIRELESS WEEKLY, and I am pleased to say that we have been, and are still, getting programmes of the type favourably mentioned by Mr. Benson in our own State from 4QG.

From time to time during the last two years we have been getting programmes of this type, which have been arranged by Mr. Erich John. These have contained sections as follow:—

Grand opera, light opera, Neapolitan folksongs, songs from China and Japan, from the Alps, suites of serenades, Mexican love-songs, etc.; in addition to this we have had composer groups, e.g., Beethoven group, a Wagner group.

It must also be noted that in the very same issue of WIRELESS WEEKLY which contains the article referred to above, the programme of Station 4QG for October 3 is divided into sections, thus:—

1. Grand opera.
2. In the Land of the Midnight Sun.
3. Classical, etc.

These are presented by:—

1. Vocal soloists. With orchestral accompaniment, and orchestra.
2. Mixed chorus.
3. Male Quartet.

I mention all this because it is only fair that we should hand out a bouquet to our own station when it deserves it, for we are never backward in giving it the bricks when it displeases.—Yours, etc.

LISTENER-IN

Rosalie.

* * *

2FC Transmission at Parkes

Dear Sir,—I noticed (W.W. 20/9/29) two letters complaining of the reception from 2FC. Here the results obtained are quite the opposite. If it were not for stations 2FC and 3AR we could more than often close down. It is very seldom that we get anything but good reception from 2FC, day or night.—Yours, etc.

W.H.

Parkes.

Church Service Appreciated

Dear Sir,—2BL was splendid on Sunday night, the 22nd inst., and the programme from Hoskins's Memorial Presbyterian Church, Lithgow, was well received, and admirably conducted by those concerned. The music from the organ was beautiful, the singing splendid, and the pastor's sermon one of the best. We hope to have more from Lithgow, and feel sure such music and church service is highly appreciated.

Yours, etc.,
ALEX. MORGAN.

Bega.

More News

Dear Sir,—Taking it for granted that the controversy in the "Safety Valve" page was the means of rearranging the Sunday programmes, why not endeavor again, per medium of this page, to get that great controlling body, the "Australian Broadcasting Company," to give distant listeners, who are in the majority, a reasonable amount of news from the evening papers at or about 7.30 p.m.?

From 6.45 p.m. till 7.30 p.m. we have dinner music (45 minutes); although the music is very fine, we must not forget that too much of a good thing is bad for us. Then from 7.30 p.m. till approximately 7.55 p.m. produce markets (very good), Stock Exchange (should be cut out), weather forecast (quite in order), and last, but not least (before we get about three minutes' late news), the number of cattle wagons ordered for next week (rot).

I am sure the portion of the programme I refer to has an audience of not more than about 5 per cent., or less than 5 per cent., of the total listeners in this State.

Yours, etc.,

J.P.H.

Megan.

* * *

"State" Hour

Dear Sir,—I desire to draw attention to the programme broadcast from 2FC to-night. Advertised in the papers, and also announced from the station itself, was an hour from the State Theatre, from 8 p.m. to 9 p.m.

Judge of my surprise and disgust after hearing the overture from the theatre (which occupied about 10 minutes and was greatly appreciated), the rest of the hour was taken up with gramophone music (orchestral and organ).

If the idea was to give listeners the impression that they were still listening to music from the State, all I can say is that it is an insult to the intelligence of the listener and also to the orchestra and organist of the theatre.

Yours, etc.,

F.G.H.

Lane Cove.

THE WORLD AT YOUR DOOR

Short-wave Progress

Dear Sir.—At the present time there is quite a revival in short-wave transmission, or should I say reception? On almost any morning of the week the amateur can log short-wave stations from various parts of the world, and at a fairly reasonable hour. During the past week I have had the pleasure of listening to excellent programmes from various countries on my "All Empire" receiver, whilst from 8 p.m. till 10.30 p.m. splendid reception is obtainable at present from RFM on about 70 metres. From 5 p.m. to 8 a.m. to-day (27/8/29) some half dozen overseas stations were heard on the 20-30 metre band. These included Dutch, German, English, and American stations, and volume on most was excellent. Most of these stations close down about 7 a.m., but such stations as WGY, of Schenectady, U.S.A., can be heard for several hours later. At 8 a.m. the chimes can be heard from WGY (6 p.m. previous evening) as clearly as the local town clocks. On Sundays from about 1 p.m. to 2 p.m. W2XAF (N.Y.) can be heard with good volume, and on alternate Sundays this station works the Byrd expedition, and transmits messages from relatives to those at the South Pole.

A newcomer is KZRM, who has the added advantage of being received at convenient hours. KZRM, of Manila, Philippine Islands, can be tuned in from about 7 p.m. until 11 p.m. on 31.6 metres. This station provides an excellent programme with plenty of volume for loud-speaker, is very steady, and easy to log. At 8 p.m. children's session is heard, followed by Exchange, news, musical programme. Although on practically same wavelength KZRM tunes in a little lower down the scale on my "All-Empire" than WXAF. Yours etc..

R. N. SHAW

Wauchope.

English Readings From Russia

Dear Sir.—I note in the "Safety Valve" remarks about the Russian station RFM. This station now gives his call as RA97, and can be heard almost any night, from about 8 o'clock, at loud speaker strength, but static is often bad. Anyone wishing to hear the news, which is read by a woman in English, should listen from 8.15 p.m. to about 9.15 p.m., when it is usually read; sometimes it starts at 8.15 p.m., and sometimes later.

Yours, etc..

T.A.E.

Guyra.

More From the Soviet

Dear Sir.—I wish to thank Mr. J. J. Gannon, Woy Woy, for his answer to my inquiry re foreign stations whilst I receive here nightly. Since making my inquiry I have heard the call sign quite distinctly in both English and foreign tongue.

The English announcer is a lady and gives call sign RA97 Soviet Russia (East). The foreign announcer is a gentleman who gives call sign LR Geninostokcr (or a word which sounds exactly as I have spelt this). The lady announcer gives wave length as 70 metres, and said it was now "Twenty o'clock and eight minutes," when Sydney time was eight minutes past nine p.m.

Mr. Gannon's transmission description is as I find it, but evidently the call sign RFM has been altered.

Yours, etc..

A.V.E.

Scone.

Letters from readers who have found the short-wave stations entertaining. Note the casualness with which they report reception of stations as far distant as Mexico. Holland, Canada, and others.

The World on Simple Set

Dear Sir.—I have been using a 3-valve Schnell short-wave set up here. This is my log since July 3:—

July 3.—KGO (California), very good. L.L.S. July 4.—REN (Siberia). July 7.—VK2HC (Quirindi), very clear; 5SW (Chelmsford), very clear; PCJ (Holland), very clear on 'phones and speaker; VK2RB (Lithgow), very clear on 'phones and speaker. VK2RC (Tamworth), very clear on 'phones and speaker. July 13.—VK2SW (Northbridge), very clear on 'phones and speaker.

August 6.—GBS (Rugby), very clear on phones and speaker. August 7.—KGO (California). August 13.—WGY (Schenectady); 5SW (Chelmsford); KGO (California). August 20.—VK3MO. VK5JC, testing; VK5SN VK3RG, testing; VK5AM, VK3RG, testing; CQ, VK3RG, testing; VK2WU. VK3RG, testing.—Yours etc..

SHORT-WAVE CRANK.

Narrabri.

Country Reception

Dear Sir.—This report may give readers a fair idea how the short-wave stations are received now.

G5SW, at 7 a.m. to 7.30 a.m., was recently good speaker strength.

W2XAF and KDKA, at 8 a.m., fair 'phones.

W2XAD, at 1 to 1.30 p.m., fair to good speaker strength.

Radio Manila, on about 24.5 metres, at 8 p.m., bad; Radio Manila, on about 49 metres, at 8 p.m., good speaker strength; news at 9 p.m. There was also another station about 50 metres at good speaker strength.

On the next day G5SW, at 7 a.m., good speaker strength.

KDKA, at 8.15, fair speaker strength (deep fading).

W2XAF, at 8.15, fair speaker strength, reading market reports (deep fading).

KGO, as usual, was very good from about 3 p.m. This station can be heard at 'phone strength at 12 p.m., and sometimes before on Wednesdays.

VK2ME reading to GBH, at 5 p.m.

I have great trouble to hear 2ME, except with 'phones, as I must be in his skip distance.

GBH, of England, reading, Morse, etc., to 2ME, at 5.30, only fair 'phones; although GBH had a very strong carrier, and the voice was loud, it was hard to understand.

Manila at 6 p.m. on 24.5 (?), poor.

Manila at 8 p.m. on 49 (?), good speaker.

I have not been able to get any good results from any of the Java or Holland stations, which are on from 15 to 18 metres, as any station below 20 metres seems almost dead at night time for the past couple of months, but they are starting to come in again now.

Philips Lamps (Australasia) advised me that PH1 are now using a directional beam aerial to the East Indies, and cannot be heard here.

Yours, etc..

T. A. EVERETT.

Guyra, N.S.W.

Real DX

Dear Sir.—With reference to J. J. Gannon's report, I would like to state that RFM, now RA97, is on 70.2 metres, also RDW on 83 metres, starting from 7.30 p.m. I might state that my reception of these stations are verified with QSL cards.

Other stations I receive regularly, also verified, are:—W6XN, KDKA, W2XAF, and W2XAD (in U.S.A.), PCJ, PHI, PCL (Holland), 5SW (England), CJA, CJRX, CJRW (Canada), PLR, PLF, PLE, PCF (Java). Others not verified yet are KIXR (Manila) 48.8 metres, RA19 (Russia) 37 metres, GBX (England) 26 metres, also XC51 (Mexico) around 46 metres. The U.S.A. end of the trans-Atlantic phone on 21 metres can be heard up till 10 a.m. nearly every day.—Yours, etc..

S. J. YOUNG.

Pascoe Vale.

"London Calling"

Dear Sir.—On my all-Empire short-waver I believe I have received every station in the world that has any power. This evening, as I have been doing for weeks, I listened to an international conversation and heard London ask Mr. Palmer "What time is it in Sydney now?" "A quarter-past five," came the answer. I do this by moving the detector condenser from one station to the other. Yesterday I heard the ladies having a yarn to their dear ones, also G5SW very strong this morning at 7 o'clock, tuned in at 6.45, "You have been listening to the London transmitting through G5SW. There will be a short interval for about 15 minutes." At seven piano, and then a talk on music, then, "We are crossing to Hotel Piccadilly for dance music until midnight."

KGO very strong from 4 to 6.50 last Sunday. For those who have built this set I would strongly advise the installation of fixed condensers in series with the detonator and reaction condensers of about 001.002 M.F.C. By this method, which I have noticed advocated in WIRELESS WEEKLY, you safeguard the tubes. Also I find that by keeping the S.G. valve rigid in its socket, I get no tremble from the highest frequency; but if it is springy the slightest vibration causes the carrier to jump all over the place, and one would say this carrier is very unsteady, by taking the plate lead of the S.G.V. down at the grid end of the detector coil and bringing it up outside of the screening box to cap on top of valve. I found this much better than taking it through the partition.

I could go on, but by this time all who built this set when it first came out have found all these little things out, and I only mention this for those who have just built this, or who are thinking of building it. One thing I will mention is: Disconnect your plate lead to the S.G. valve, which is the 100 volts—or supposed to be—when changing coils. My set fined me £3/10/- for not doing this; and now I am sorry to take up so much of this valuable space, but I must say a little about these A.B.C. programmes before I conclude.

I say that they are not up to standard. Why can't 2FC or 3LO give us the news when they come on in the mornings? 2FC is a little better than 3LO; they do give the weather, and a very little bit of news, at 7 a.m., but not enough. 3LO goes on with exercises until 7.15 a.m., then nothing but cranky records until about 7.40 or later. Who wants to listen to this mush first thing in the morning? Only for the short-waves. I would be one of the receiving stations signing off.—Yours, etc..

S.G.V. FOR D.X.

Merino.

NEW ZEALAND RADIO TRANSMITTING STATIONS

ZL2NP—Dawson, W. M., 2 Rata Road, Wellington.
2XS—Standard Telephones and Cables (Asia) Ltd., 24-26 Ballance Street, Wellington.

AUCKLAND PROVINCE

ZL1FP—Anchor, G. S., 8 Queens Avenue, Frankton Junction.

ZL1AN—Arthur, H. B. M., 34 Lawrence Street, Herne Bay, Auckland.

ZL1FZ—Auckland Grammar School, Mountain Road, (G. M'B. Salt, Science Master), Mt. Eden, Auckland.

ZL1AY—Barnaby, N. S., 51 Grange Road, Mount Eden, Auckland.

ZL1AI—Bartram, R. G., 5 Russell Street, Devonport, Auckland.

ZL1BB—Beazley, R., 19 Alexander Avenue, Mt. Albert, Auckland.

ZL1AC—Button, C. L., 20 Tainui Road, Devonport, Auckland.

ZL1AK—Claxton, W. H., Parawai, Thames.

ZL1FO—Cooper, E. R., 8 London Street, Ponsonby, Auckland.

ZL1FY—Curtis, N. C., Whatoro, North Wairoa.

ZL1FS—Dickson, L. R., 3 Garry Avenue, Epsom, Auckland.

ZL1AA—Edwards, C. N., 7 Arnold Street, Grey Lynn, Auckland.

ZL1FV—Evans, A., Waipa Road, Papakura, Auckland.

ZL1FI—Goodwill, C. S., Jocelyn Street, Te Puke.

ZL1FB—Gulde, G. T., Hospital Hill, Opotiki.

ZL1FK—Hamlin, S. M. Y., Mt. Wellington Highway, Ellerslie, Auckland.

ZL1FF—Harris, L. W., 103 Princes St., Onehunga, Auckland.

ZL1AH—Hartle and Gray, 7 Alton Road, Auckland.

ZL1BH—Hudson, A. H., 15 Mt. Hobson Road, Remuera, Auckland.

ZL1AM—Ishwood, J. C., 17 Clyde Street, Whangarei.

ZL1BJ—Jackson, R. M., National Bank of N.Z., Queen Street, Onehunga, Auckland.

ZL1AD—Leys Institute, St. Marys Road, Ponsonby, Auckland.

I1FG—Lonsdale, J. 11 Anne Street, Devonport, Auckland.

ZL1AW—Lyons, R. R., Mangatawhiri Valley, Auckland.

ZL1BE—McKay, E. K., Selwyn Road, Kohimarama, Auckland.

ZL1AR—Mellars, L. M., 18 Station Road, Remuera, Auckland.

ZL1BC—Mickleborough, W. E. F., 204 Great North Road, Auckland.

ZL1AX—Orbell, R. J., 10 Beaconsfield Street, Devonport, Auckland.

ZL1BF—Partelow, A. L., 52 Brighton Road, Parnell, Auckland.

ZL1AV—Reardon, F. C., 154a Hobson Street, Auckland.

ZL1AG—Roberts, F., 24 Kimberley Road, Epsom, Auckland.

ZL1AE—Roberts, R. V., 59 Hepburn St., Ponsonby, Auckland.

ZL1FJ—Sexton, W. J., 14 Ethel Street, Edendale, Auckland.

ZL1AJ—Shepherd, N. C., 1 Norths Road, Whangarei.

ZL1FI—Steel, J., "Linwood," Earnoch Avenue, Takapuna, Auckland.

ZL1AT—Swain, G. S., Mahoe Street, Te Awamutu.

ZL1BA—Taylor, R. J., 2 Fremont Street, Parnell, Auckland.

ZL1BG—Thompson, Dr. B. G., Sanatorium Grounds, Rotorua.

ZL1FX—Trenwith, J. H. L., 19 Bellwood Avenue, Mt. Eden, Auckland.

ZL1BI—Turnbull, J. R., 47 Beresford St., Bayswater, Auckland.

ZL1BD—Wadham, W. H., 16 Dunkerron Avenue, Epsom, Auckland.

ZL1FT—Wainga, N. N., 64 Hepburn Street, Ponsonby, Auckland.

ZL1FM—Warn, J. E. B., Gorrie Avenue, Epsom, Auckland.

ZL1AQ—White Island Products Ltd., Sulphur Point, Tauranga.

ZL1FA—White Island Products Ltd., White Island, Auckland.

ZL1FW—White, G. D., Bridge Street, Opotiki.

ZL1FF—White, L. W., 3 Veronica Avenue, Mt. Albert, Auckland.

ZL1AO—White, R. G., 9 Veronica Avenue, Mt. Albert, Auckland.

ZL1FW—Whitelock, E., 1 Halton and Dominion Road, Auckland.

ZL1AP—Winch, N. J., Broady Street, Te Awamutu.

ZL1FE—Wood, A. F., P.W. Station, Waikou.

ZL1XI—Auckland University College, Princes Street, Auckland.

ZL1FD—Booth, F. R., Hamilton.

ZL2AQ—Coutts, M. W., Remuera, Auckland.

ZL1FC—Glide, N. O., Opotiki.

ZL1FB—Lynch, J. S., Great South Road, Ngaruawahia.

ZL1AV—Reardon, F. C., 154a Hobson Street, Auckland.

ZL1BK—Reid, A. G., 5 Marine Parade, Bayswater, Auckland.

ZL1AZ—Sherson, J. R., Mill Street, Hamilton West, Auckland.

ZL1BW—Waite, S. G., 34 Marlborough Street, Auckland.

CANTERBURY PROVINCE

ZL3AJ—Blake, R. G. P., Station Road, Southbrook, Rangiora.

ZL3CG—Brown, H. P. V., 10 Merivale Lane, Christchurch.

ZL3AR—Buchanan, D. W., 74 Willis Street, Ashburton.

ZL3CS—Burkehurst, E. B., Jnr., 98, Office Road, Merivale, Christchurch.

ZL3CD—Clarkson, G.H.S., Springfield.

ZL3AH—Courtis, H. B., 69 Grey Road, Timaru.

ZL3AN—Edwards, S. St. D., 26 Patten Street, Avondale, Christchurch.

ZL3CE—Henderson, B. G., 100 Rugby Street, Christchurch.

ZL3CR—Hervey, C. R., 30 Peterborough Street, Christchurch.

ZL3AU—Hills, H. O., 97 White Street, Rangiora.

ZL3CI—Kay, R. MacD., 17 Nelson Terrace, Timaru.

ZL3AS—Langesen, N. W., 44 Hills Road, St. Albans, Christchurch.

ZL3CU—McCurdy, G. E., 66 Willis Street, Ashburton.

ZL3AT—Marquet, L. J., 30 Chichester Street, Woolston, Christchurch.

ZL3AV—Minstrom, R. W., Fire Brigade Station, Woolston, Christchurch.

ZL3CN—More, I. A. B., 48 Hackthorne Road, Cashmere, Christchurch.

ZL3CP—Parton, C. W., 69 Hackthorne Road, Cashmere, Christchurch.

ZL3AC—Radio Society of Christchurch, St. Asaph Street, Christchurch.

ZL3CV—Sanderson, R. W., 223 Cameron Street, Ashburton.

ZL3CO—Seton-Kellaway, G., Walkari.

ZL3CF—Simpson, A. E. H., 99 Abberley Road, St. Albans, Christchurch.

ZL3CY—Smith, W. T., 28 Derby Street, St. Albans, Christchurch.

ZL3CX—Stewart, J. D., 112 Alford Forest Road, Ashburton.

ZL3AI—Strachan, J. E., High School, Rangiora.

ZL3CA—Taylor, C. R., 7 Rutland Street, St. Albans, Christchurch.

ZL3CM—Toon, W. T., 73 Canon Street, St. Albans, Christchurch.

ZL3BD—East, J. C., 326 Papanui Road, Christchurch.

ZL3AZ—Gibbs, R. J., 180 Rolleston Street, Christchurch.

ZL3CJ—Harlan, A. E. S., 32 Beverley Road, Timaru.

ZL3RC—Harrison, J., Scargill, Christchurch.

ZL3BE—Lancaster, G. J., iBoys' High School, Riccarton, Christchurch.

ZL3BF—Prince, E., 16 Cobham Street, Spreydon, Christchurch.

OTAGO PROVINCE

4BG—Baird, W. C., 6 Young Street, Dunedin.

4BC—Bates, L. C., 506 George Street, Dunedin.

4AA—Bell, F. D., Shay Valley Station, Waitemata.

ZL4RD—Brooks, J. R., 12 Prince Albert Road, Dunedin.

4AE—Brown, G. E., 32 Ardwick Street, Gore.

4AX—Earland, F. P., 33 Waverley Street, Dunedin.

4U—Gerken, G. D., Knapidale.

4AL—Grubb, A. H. M'L., Gore.

4P1—Hitchcock, B. R., 14 Rewa Street, Dunedin.

4AD—Jordan, A. E., 41 Venus Street, Invercargill.

4BL—Kennedy, D. G., Derwent Street, Oamaru.

4AV—Milnes, J. L., 39 Lees Street, Dunedin.

4AO—Robinson, R. E., 3 Chetham Avenue, Dunedin.

4ZB—Shrimpton, H. N., Concy Hill Road, Dunedin.

4AZ—Slade, T. K. S., 11 Corstorphine Road, Caversham, Dunedin.

4BA—Smith, J. G., 7 Crosby Street, Dunedin.

4AP—Stroud, L. R., 6 Heriot Row, Dunedin.

4BD—Swann, A., 31 Botting Street, Opho, Dunedin.

4AR—Wainwright, W. G., 21 Melrose Street, Dunedin.

4AM—Crockett, W. M.G., Riverton Street, Palmerston North.

4AL—Grubb, A. H. M'L., Gore.

4BL—Kennedy, D. G., Derwent Street, Oamaru.

4AZ—Slade, T. K. S., 11 Corstorphine Road, Caversham, Dunedin.

4AT—Stone, J., 34 Grove Street, Dunedin.

4BD—Swann, A., 31 Botting Street, Opho, Dunedin.

4BM—Whiteman, V. G., Puysegur Point Lighthouse, Dunedin.

WELLINGTON PROVINCE

ZL2GD—Adair, B. R., 120 Sheehan Street, Gisborne.

ZL2BV—Berry, C. T., 20 Rata Street, Wanganui.

ZL2GH—Berry, J. V., 74 Harrison Street, Wanganui.

ZL2AY—Billessi, F. D., 49 Durham Street, Wellington.

ZL2BX—Bird, R. G., 21 Karepa Street, Brooklyn, Wellington.

ZL2AS—Boyle, H. R., 370 Main Road, Karori, Wellington.

ZL2AA—Brown, A. S., 14 Grant Street, Dannevirke.

ZL2GG—Brown, C. H., 70 Wallace Street, Wellington.

ZL2AM—Bust, Dr. W. F. cr. Collins and High Sts., Hawera.

ZL2AV—Chafefield, R. G., 42 Raupo Road, Kelburn, Wellington.

ZL2AW—Clarke, C. R., 91 Apu Cres., Lyall Bay, Wellington.

ZL2BA—Cropp, F. T., 17 Mason Street, Lower Hutt.

ZL2BO—Dixon, H. C., 36 Devon Street, Wellington.

ZL2BR—Forrest, J. F., 27 Marion Street, Wellington.

ZL2GJ—Gordon, K. L., Hadfield House, Collegiate School, Wangarua.

ZL2GO—Foxwell, H. G., 110 Riddiford Street, Wellington South.

ZL2GI—Gabriel, M. T., 80 Grey Street, Palmerston North.

ZL2BZ—Gillion, O. W., 17 Wilson Street, Hawera.

ZL2GS—Green, H. E. H., Clifford Road, Johnsonville.

ZL2GR—Green, W. S., 13 Washington Avenue, Brooklyn, Wellington.

ZL2FH—Hall, W. M., 46 Tarakaka Street, Ngao, Wellington.

ZL3GC—Howarth, A., 12 High Street, Dannevirke.

ZL2QG—Hunt, F. L. R., 221 Clifford Street, Gisborne.

ZL2GA—Johnson, J., Fortunate Street, Brooklyn, Wellington.

ZL2BJ—Jury, A. V., Papawai, Greymouth.

ZL2AX—Kyle, J. V., 30 Waldegrave Street, Palmerston North.

ZL2BR—Lambert, K. A., Belmont, Tayforth, Wanganui.

ZL2BI—Liddell, C. G., 45 Puru Crescent, Lyall Bay, Wellington.

ZL2BZ—Lynn, J. A., 414 Lyndon Road, Hastings.

ZL2GI—MacGregor, E. L., Windsor Hill, Waipawa.

ZL2BP—MacKlin, W. N., 75 Waipapa Road, Hataitai, Wellington.

ZL2BF—Matthews, P. H., The Riddigway, Mornington, Wellington.

ZL2BE—Mills, J. C., 311 Queen Street, Hastings.

ZL2AC—Moss, I. H., Bushmire Road, Gisborne.

ZL2AK—Parmiter, V. H., 41 Drynmond Street, Wellington.

ZL2AR—Patty, R. J., 55 Salisbury Road, Gisborne.

ZL2OK—Perkin, S. R., 42 Puru Cres., Lyall Bay.

ZL2AR—Rennie, A. M. McB., 67 Campbell Street, Wanganui.

ZL2XA—Shrimpton, E. A., 38 Rongotai Terrace, Wellington.

ZL2AT—Sinclair, W. J., Hirini Street, Gisborne.

ZL2AD—Stevens, P. R., 258 Gladstone Road, Gisborne.

ZL2AG—Strong, S. W. S., 12a, Parau Street, Gisborne.

ZL2BT—Tanner, R. A., Karere Road, Longburn.

ZL2HG—Tinney, J. G., 74 Kaiwhi Road, Hataitai.

ZL2GE—Tyler, G. E., Chamber Street, Napier.

ZL2AN—Weston, M. L., 47 Barraud Street, Dannevirke.

ZL2AK—Wilkinson, D., Waerenga Road, Otaki.

ZL2AP—Armstrong, J. L., Maungataniwha, Wairoa.

ZL1AB—Brown, S. E., 32 Owen Street, Wellington.

ZL2BO—Dixon, H. C., 36 Devon Street, Wellington.

ZL2AK—Cooper, A. M.D., 32 Upland Road, Kelburn, Wellington.

ZL2BI—Dodd, J. P., 27 Marion St., Wellington.

ZL2CT—Duncan, R. K., 6 Mount Street, Wellington.

ZL2GU—East, J. G., 270 The Terrace, Wellington.

ZL2HV—Lane, F. J. K., 31 Manawatu Street, Palmerston North.

ZL2IC—Perry, S. H., 89 Tiber Street, Island Bay, Wellington.

ZL2AH—Roberts, R. V., 39 Scarborough Terrace, Wellington.

ZL2GF—Taylor, J. G., 248 The Terrace, Wellington.

Manufacturers' Products

A NUMBER of changes have taken place in the organisation of Manufacturers' Products Pty. Ltd., as a result of the death recently of Mr. H. J. Hapgood, for some time the company's managing director. Mr. G. Le Quesne will take over the management of the company.

The late Mr. H. J. Hapgood arrived in Australia from the United States about seven years ago. During his residence here he was in the radio trade, originally as manager of the radio department of United Distributors, and subsequently forming Manufacturers' Products Pty. Ltd., and operating from a small office in Challis House, Martin Place. With the expanse of the business he moved to the large and commodious premises now occupied at 137-139 Clarence Street, and also established a branch in Melbourne.

The meteoric rise of Manufacturers' Products Pty. Ltd., over a period of less than four years can only be attributed to his dynamic personality and business ability. With Mr. Hapgood's demise, the radio trade loses a character and personality that will never be replaced.



Make Your Own 'B' Battery Eliminator

**OUR NEW IMPROVED KIT MAKES IT EASY FOR ANYONE TO HAVE
A PERFECT ELIMINATOR, AND DISPENSE FOR ALL TIME WITH
"B" BATTERIES**

This kit contains absolutely everything necessary. It has a specially designed transformer, and uses a selected Philips Super Power Valve. No failure is possible because we guarantee results. Everybody should have one of these kits. They represent true economy.

**PRICE FOR THE ONLY GENUINE ECONOMIC KIT
APPROVED BY THE ELECTRICITY DEPARTMENT**

SOLD UNDER OUR
GAURANTEE OF
SATISFACTION

£3'3'-

WITH CLEAR PICTURE
DIAGRAM AND
INSTRUCTIONS

No Earthing—No alterations to set—No bother

MANY HUNDREDS HAVE NOW PROVED THE WORTH OF OUR

RENOWN SPECIAL THREE RECEIVER

BATTERY OPERATED KIT OF PARTS, £6/12/8

If you want the best that Radio can give—Volume, Purity, Selectivity, Long Distance Reception, and Ease of Operation—Build a Renown! If your present set does not give you all this—convert to a Renown!

DON'T FORGET OUR WONDERFUL OCTOBER TRADE-IN OFFER

We are offering you £5 for your old set regardless of size or age, when you buy one of the superb

ALL ELECTRIC RENOWN SETS

(Guaranteed)

USUAL PRICE £26/15/-

Less Allowance

on old set £5/-.

YOUR
PRICE

£21'15'-

*To see one is to desire one. To own one is to be satisfied.
Country Residents—Don't miss this offer.*

ECONOMIC RADIO STORES

ADDRESS MAIL ORDERS 492 GEORGE STREET.

COUNTRY CLIENTS.—Our Mail Order Service reaches every corner of the Commonwealth. Send your orders to us conditionally that your money is refunded if you are not satisfied with goods. Returns must be made within ten days of receipt. We pay carriage on all orders of 10/- and over, except on Batteries, Cabinets, and Loud Speakers. Articles specially procured cannot be exchanged. Terms Cash or Cash on Delivery. No Discounts.

126A PITT STREET.
SYDNEY
(near King St.),
'PHONE, M6139.

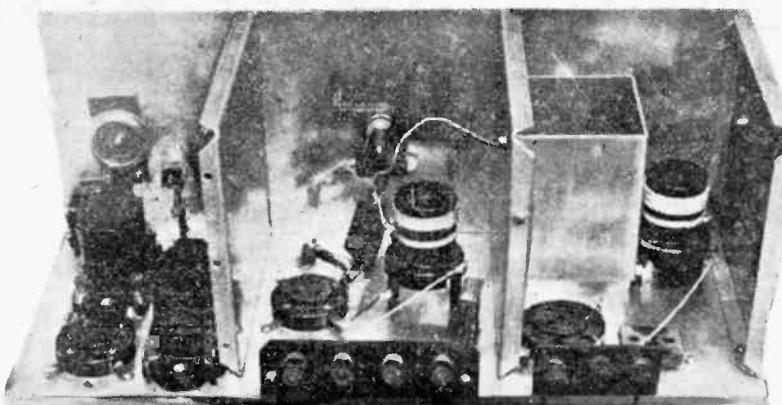
13 UNION STREET.
NEWCASTLE
(off Hunter St. West).
'PHONE, NEW. 1622.

MAIL ORDER DEPT..
492 GEORGE ST.,
SYDNEY.

CORNER CHURCH &
MACQUARIE STS.,
PARRAMATTA.
'PHONE, UW9601.

25 ROYAL ARCADE.
SYDNEY
(near Palace Theatre).
'PHONE, M6138.

The R.F. FOUR



Instructions for Building a Simple 4-valve Short-wave Receiver Which is as Easy to Operate as a Broadcast Set

THIS receiver is designed for the keen short-wave man who desires an efficient short-wave long-distance receiver, especially suited for the clear reception of distant short-wave broadcasting. It is a carefully designed straight "Four," using a shielded stage of screen-grid r.f. amplification, a detector, and two audio-frequency stages which will give good loudspeaker reception under suitable conditions.

Short-wave broadcast transmission has made great strides in the past year both in the technique of S-W transmission and in the greatly increased numbers of stations that may be heard on the low wavelengths.

We were long content with the sensitivity afforded by a regenerative detector plus audio-frequency amplification. While rather remarkable results are possible on short-waves with a receiver of this type, it possesses a decided disadvantage in that the detector valve requires to be operated right on the threshold of oscillation, in which position a certain amount of distortion is inevitable and the stability of the receiver is poor.

Modern short-wave broadcasting has reached the stage where it warrants a decent receiver being used.

In passing, it is of interest to note that much of the unsteadiness laid at the door of short-wave transmission might with considerably more justice be blamed on unstable receiving apparatus. Checks extending over a considerable period have definitely shown that a modern short-wave receiver gives comparatively steady reception when with the old-fashioned "threshold" of oscillation type the signals are fading in and out rather badly.

In order to gain sufficient sensitivity for regeneration, it is essential to use radio-frequency amplification, and the only really practical form of this at the present time uses the screen-grid valve.

Consequently our receiver embodies one stage of screen-grid amplification. This was found to give ample sensitivity on the short wavelengths without having to force the detector.

THE CIRCUIT DISCUSSED.

Looking at the schematic diagram it will be noted that inductive aerial coupling is used; there is little doubt that this gives superior results to capacity coupling for signal strength, and the characteristics of the aerial affect the receiver less. The screened-grid valve used is the Philips A442. The regenerative detector functions in a well known and proved circuit, reaction being under smooth control by a .00015 variable condenser. The valve used here is a Philips A415 on account of its high mutual conductance and

are identical; there is no need for two different ratios.

These transformers are designed to give a high gain per stage when used in conjunction with A415 valves. The first a.f. valve is also an A415 and the last stage valve a B405 or, if the user is satisfied with less volume and wishes to economise on "B" battery consumption, a B409.

The tuning coils for the receiver are made plug-in to cover several wavebands, and for convenience and general efficiency, are wound on discarded tube bases.

SCREENING

The receiver has been built up on an aluminium chassis. This is well worth while on several counts. Body capacity effects are entirely eliminated; wiring is considerably simplified, and a sturdy, workmanlike job of pleasing appearance is readily obtained. The metal work involved is not very difficult; it will, however, pay to buy the aluminium sheets cut to correct size, and the inter-stage shields flanged over, as the vendor of the material will have special facilities for cutting and bending the metal. It would also be advisable to have the valve screening box made, unless the builder has had previous metal-working experience. Assuming, then, that the aluminium work is ready, we may proceed.

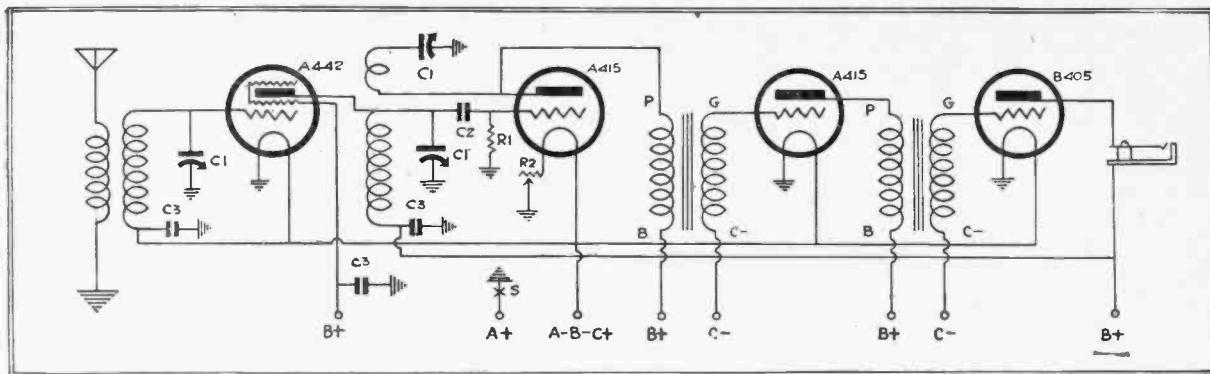
Select for the panel the 16in. x 17in. sheet with fewest blemishes. Take the other one and lay out your components as they appear in the base lay-out. Do not forget to make allowances for the variable condensers, which will be mounted on the front panel, and, consequently, project over the baseboard. The make of variable condensers and valve sockets will influence the exact placing of the components, and they will require to be juggled round until they are in the best positions. Then, with a scriber, mark off the holes for securing the components to the base panel. The holes for the six sockets and the two transformers can be attended to first. The transformers and sockets for the four valves can be

List of Parts

- 2 aluminium sheets, 16 inches x 7 inches.
18 gauge.
- 3 Aluminium sheets, 7 inches x 7 inches x
18 gauge.
- Aluminium valve shield—see illustrations.
- C1, 1 .00015 midget variable condensers;
large type may be used.
- 3 Vernier dials.
- 2 Audio frequency transformers (about 1-3
ratio).
- C2, 1 .0001 mfd. grid condenser.
- C3, 3 .005 mfd. fixed condensers
- 6 UX type valve sockets.
- R1, 1 7 megohm gridleak.
- S. Filament switch; single contact jack; and
7 terminals.
- 4 dia. $\frac{3}{4}$ in. 6-32 metal thread screws and
nuts.
- 4 dia. $1\frac{1}{2}$ in., 6-32 metal thread screws and
nuts.
- Several old UX valve bases.
- 4 lin. lengths of brass.
- R2, 1 30 ohm rheostat.
- 1 A442, 2 A415, and 1 B405 Philips' valves.

its easily-controlled oscillating properties. The audio-frequency amplifier is of standard design. Separate bias is provided for each valve and provision is made for a power valve in order to obtain faithful musical reproduction.

It will be noted that no r.f. choke is shown. It is not needed on account of the very sharp cut-off at the high frequency end of the amplification curve of the Philips audio transformers employed. Both transformers



screwed down in place, the sockets to act as coil bases are held up one inch above the base by tubular brass sleeves slipped over the securing screws.

It will be advisable at this stage to bring base panel and front panel together—these are secured by screws passing through the flanged edges of the inter-stage shield. Temporarily assemble the whole chassis in this manner, and decide on the exact positions of the three variable condensers—one in each compartment. Mark the position of the securing holes on the front panel.

It will be noted, with sizes given, that if the inter-stage shields come flush with the top of the front panel the base panel will be an inch above the bottom of the front panel. This gives room for the wiring to go underneath, which results in a neat job.

WIRING

The wiring may be commenced by earthing one filament terminal of each of the three amplifier sockets to the aluminium base; this is later connected with the "A" battery positive terminal through the filament switch; the corresponding terminal of detector valve is connected to one terminal of the rheostat the other being earthed. This disposes of one side of the filament wiring; the negative filament terminals of the four valve sockets are connected together. If the terminal strip is now mount-

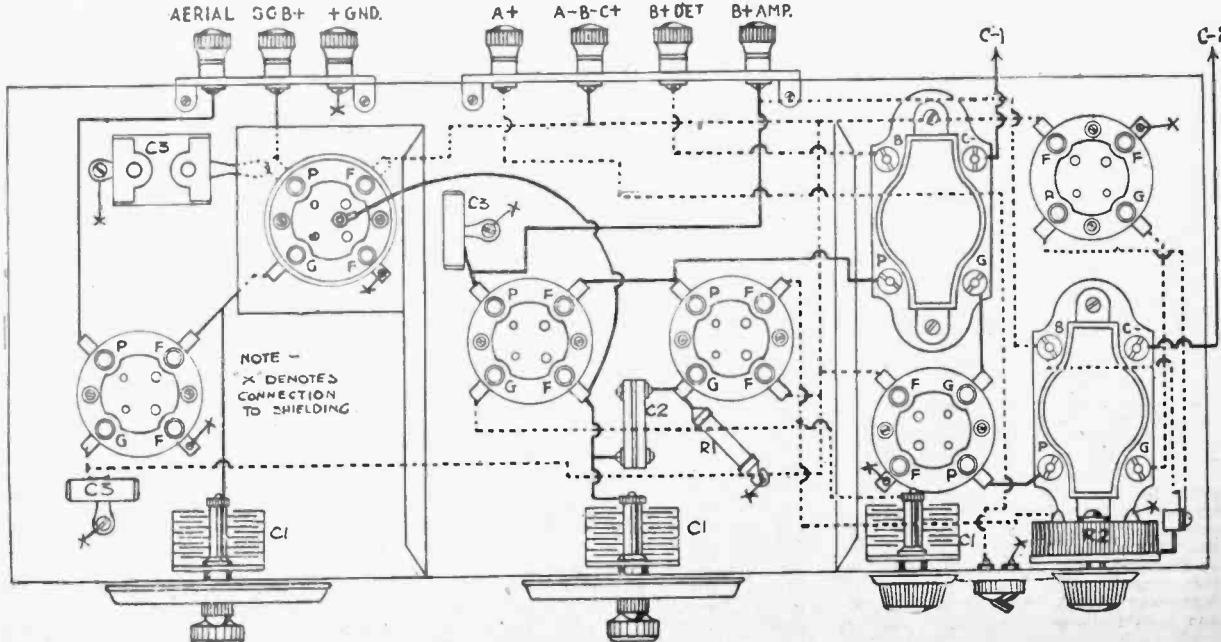
ed, the filament wiring may be continued by connecting the A plus terminal to one side of the filament switch, the other side of which earths to the front panel. The A negative terminal connects to the negative of the four sockets.

That completes the filament wiring. The wiring of the screen-grid stage may then be completed as follows:—Moving plates of tuning condenser earthed to front panel; fixed plates to plus of coil holder and on the G of valve-holder; aerial terminal connects to P of coil-holder; G of coil holder to .006 condenser, the other terminal of which earths to base; G of coil-holder to minus A wire. Minus of coil-holder earths direct to base. P of valve socket connects to B plus screen-grid terminal, which also joins to another .005 condenser, the other side of which earths to base. Earth terminal connects direct to base. The top connection of the A442 is led through a hole drilled in the inter-stage shield to the F minus terminal of the coil-holder in the detector compartment, to which attention may now be transferred.

Terminal P on this coil socket goes to B power amplifier, and to one side of the third .005 condenser, the other side of which is grounded. Plus of coil socket goes to P of valve socket; minus of coil socket, in addition to going to plate of A442 valve, as pre-

viously mentioned, goes to fixed plate terminal of tuning condenser, which, in turn, goes to grid condenser, the other side of which goes to G terminal of valve socket. Grid leak connects between here and base. Moving plates of tuning condenser are earthed to front panel. G of coil socket goes to P of first a.f. transformer.

Attention may now be transferred to the a.f. compartment. The remaining connections on the first a.f. transformer are B plus to detector B plus terminal; G to G terminal first a.f. valve socket; C minus to a rubber-covered flexible lead, which is later joined to the "C" battery direct. Terminal P on first a.f. valve socket goes to P on second a.f. amp. terminal, whose B plus connects to B plus amp. terminal, G going to G of last valve socket, and C plus being fitted with another rubber-covered flexible lead to the "C" battery. Terminal P of the last valve socket goes to one side of the speaker jack, the other side of which goes to the B plus power terminal. The body of the speaker jack requires to be insulated from the front panel. This may be done with small presspahn washers, or if these are not available, rubber washers may be cut from a discarded reaction cycle tube. It remains to connect up the reaction condenser, the moving plates of which ground to the front panel; fixed plates connecting to P on the first a.f. transformer.



Connections are now complete and should be CAREFULLY CHECKED OVER.

AN EXCELLENT TUNING COIL FEATURE

We may now undertake the coil construction, and here it should be stated that the original receiver was designed with the new and rigid amateur requirements in view, and, on account of the inevitable overcrowding of the narrowed bands, extremely fine tuning with the scale very well opened up was essential. Hence the choice of 50 mfd. tuning condensers. With this capacity of condenser, but 10 metres can be covered with one coil designed for the 30 band. This means that to cover, say, 10 to 100 metres some 10 coils are necessary (5 sets). For those desiring to use the set as a traffic tuner in a transmitting station it is strongly recommended that this size condenser be used. To meet the needs of the D.X. short-wave 'phone aspirant the size of .00015 maximum capacity has been adopted; this needs fewer coils, and, consequently, less coil-changing, and the tuning is sufficiently fine for all telephony needs.

Accordingly, two sets of coil data are given—one for .00005 condensers and the other for .00015 condensers. Two coils are needed for each waveband, the r.f. coil carrying aerial and grid windings, and the detector coil carrying tuned anode and reaction coils. All coils are wound in the same direction, and the same winding ends connect to the same valve pins, so that a detailed description of winding one coil will suffice for all—the only difference being in the number of turns.

THE .00005 CONDENSER.

R.F. Coll.	Detector Coll. Waveband.			
Aerial.	Grid.	T. Anode.	Re-action.	Metres.
3 1/2	3 1/2	3 1/2	3 1/2	9—12
5 1/2	6 1/2	6 1/2	7 1/2	12—19
8 1/2	9 1/2	8 1/2	10 1/2	19—28
10 1/2	13 1/2	12 1/2	12 1/2	28—40
15 1/2	20 1/2	18 1/2	15 1/2	40—65
20 1/2	27 1/2	25 1/2	18 1/2	80—100

WITH .00015 CONDENSER

R.F. Coll.	.Grid.	Detector Coil	Waveband.
Aerial.	T. Anode.	Re-action.	Metres.
2 1/2	2 1/2	2 1/2	2 1/2
5 1/2	6 1/2	5 1/2	5 1/2
6 1/2	9 1/2	8 1/2	10 1/2
12 1/2	17 1/2	15 1/2	14 1/2
			50—100

TO MAKE THE COILS

Break out the old glass from a discarded valve base, and scrape away the cement. Hold each pin, in turn, on a soldering-iron, and draw out the lead wire; the molten solder can be blown out of the hollow pin by applying the mouth to the top of the valve base.

Three-sixteenths of an inch below the top rim of the valve base drill a 1-16in. hole directly in line with the plate pin. The starting end of the aerial winding (or tuned-anode winding) commences here; the end of the wire being bare, pushed through the hollow valve pin, and soldered in. The correct number of turns are lightly wound on, the winding concluding in line with the filament pin diametrically opposite the starting point. Thus the coil has so many and half turns.

Another 1-16in. hole is drilled here, the wire cut, bared, passed through to the inside of the valve base, and soldered into the valve pin immediately below, and in line with the other filament pin drill a 1-16in. hole for the start of the reaction winding, the end of the wire being led through the valve pin and soldered as before. The correct number of turns are put on as the winding finishes at the grid pin.

The aerial grid and tuned anode coils are all wound with 26 d.s.c. wire, and the reaction coils with 30 d.s.c.

We may then couple up aerial and earth, batteries, and speaker, and insert a pair of

coils in the bases. Place the A442 in the screened-grid socket, couple the plate wire to the top terminal, on the valve cap. Place A415's in detector and first a.f. sockets, and the B405 in the last a.f. socket.

The detector plate voltage will be around 20 volts, and the screen-grid approximately half of the total "B" voltage. The correct bias on the a.f. valves will be obtained from the wrapper round the valve—note, however, that the A415 has very low bias requirements—only 1.5 volts, with 90 on the plate.

TUNING IS SIMPLE

Tuning is very little more troublesome than operating a broadcast receiver; the tuning of the screened-grid stage is not over-critical, though, of course, there is a decided peak of signal strength on the correct condenser adjustment. As is usual with regenerative sets, it does not pay to have the detector valve oscillating fiercely, though, with this receiver, you will not annoy your radio neighbours if you do oscillate fiercely—but will lose signal strength.

Tuning by the heterodyne carrier method is permissible with this receiver—once the station has been found reaction can be reduced and fine adjustments to the detector and s.g. tuning condensers will work wonders with the signal. A very little practice in handling is worth a deal of written instruction.

The writer has purposely refrained from making elaborate claims for the functioning of this receiver and just what it will do. It may be stated, however, that it gives results quite comparable with those obtained from a good seven-valve short-wave superheterodyne that was, up till now, the best short-wave receiver the writer had ever handled. If you build to instructions you will be exceptionally hard to please if you are not delighted with the results obtained.

SHORT-WAVE NOTES

By R. F. SHAW

A GOOD deal of variation in the conditions of the short-wave band has been noted this month. For instance, conditions on Sunday, September 29, were marked here by weak reception of overseas stations, with considerable fading, but the following week-end, October 5, found reception excellent. But such is the way of the elusive signal on the higher frequencies. The short-wave fan has, nevertheless, before him always the fact that, as night follows day, so will these brief intervals of weak or poor reception be as surely followed by long periods when the twirling of the short-wave dials brings joy untold.

Oud old friend RFM, now known as RA37, still maintains excellent transmission. This station now boasts an announcer who can speak passable English. The announcement re the station is quite intelligible. Between 8.50 and 9.20 p.m. on September 24 I heard a lady speaker on political questions and a resume of news from Moscow, all in English, spoken very slowly and deliberately, as if the speaker was strenuously endeavouring to master the language.

KGO still maintains the Sunday afternoon schedule, commencing at 2 p.m. and signing off at approximately 7 p.m. Wavelength, 23.5. The first portion of the programme is from the Oakland studio, but at 4 p.m. (10 p.m., San Francisco time, Saturday) the time signals are given, and the listener is switched over to a studio programme from San Francisco. On October 6 strength was good speaker from about 3.30 to 5, but then became weaker, with a great deal of high-speed fading. Some excellent vocal and musical items were heard. Last two

hours comprised dance music. On the previous Sunday KGO was very weak.

5SW is coming in fairly well between 6.30 and 7.30 a.m. Duplex telephony tests between GBX (London Post Office) and 2ME retain all their interest, and can be easily picked up around 7 p.m. On some occasions it is evident that GBX is using a speaker in close proximity to the 'phone, as what appears to be a speaker reproduction of 2ME's voice can at times be heard. GBX appears to be operating on about 28 metres.

KZRM (Manila) appears to have settled down on the 49-metre band, on which he can be heard nightly with good speaker strength.



On October 2, from 6 till about 10 p.m., the Java-Holland telephony stations were going continuously on the 17-18 band. Only once, however, did I hear the English language.

Suva station recently broadcast a native Methodist Church service on Sunday morning on 20.79 metres, at speaker strength. It was understood that further services would be broadcast.

I am in receipt of a letter clearing up the mystery regarding the station famous for the "write down" tests. The station is under control of Bell Telephone Laboratories, its call sign being 2XG, Deal, New Jersey. The letter states:—"Every other Friday we transmit on five different wavelengths—14, 11, 18, 28, and 44 metres. The tests run from

4.30, United States Eastern Standard Time, to 9 p.m. We will be interested in any results you obtain. The word tests you heard are made for the purpose of determining the usefulness of the circuit.—EAST."

In a letter from 7LO, Nairobi, East Africa, the writer informs me that Australian short-wave stations are being received well over there. 7LO now transmits on 31.4.

Many of these short-wave stations present excellent musical programmes. For instance, KGO recently provided a splendid programme by the Troubadors, including such items as "Hymn to the Night," orchestral serenades, negro spirituals, interspersed with organ solos, a short play entitled "The Golden Legend," a Jewish parody entitled "Life Insurance." At 4 p.m., Sydney time, the Oakland time-piece chimed 10 p.m. the previous evening. The programme concluded with two hours of dance music. The announcement was made that "to-morrow at 11 a.m. and 8 p.m. we will broadcast the church service from the Presbyterian Church."

On alternate Sundays W2XAF can still be heard transmitting on 31.5 messages for members of the crew with Commander Byrd at the South Pole.

On Sundays the 42-metre band is now quite crowded with VK amateurs, who can be heard with plenty of volume, and who very often unwittingly provide interesting entertainment for the listening short-wave enthusiast.

The situation, summed up, is such as to amply repay any broadcast listener who decides to join the ever-growing army of short-wave fans.

Make Your Present Set an

All Electric

With These Accessories

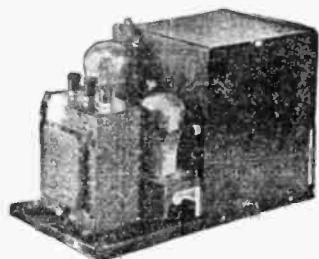
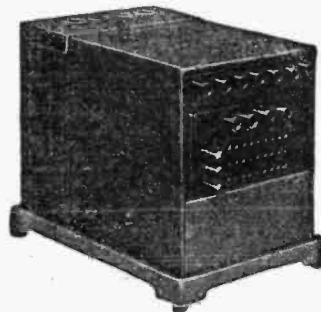


PHILIPS 1017
TRICKLE CHARGER

£3'10'-

PHILIPS 3003 B & C
ELIMINATOR

£10'15'-



PHILIPS POWER
PACK

£12'1/-

All Obtainable on Easy Terms if Desired

ALL TYPES OF AC VALVES NOW AVAILABLE

Open Till 9 p.m. Friday

HOME RECREATIONS (Australia), LTD.

388 GEORGE STREET (Opp. Beard Watson's), SYDNEY

Efficiency In Short-Wave Aerials

EVERY little attention has been given to the aerial used for short-wave reception, probably on account of the fact that almost any piece of wire is capable of giving results. In general, the aerials used comprise 30, 40, or 50 feet of wire feeding either through a very small capacity to the grid of the first valve, or else through a small coil inductively coupled to the grid circuit. One of the first worth-while suggestions with regard to the receiving aerial we have seen for many years is contained in a communication from Colonel Clair Foster—world-known amateur—to "QST." In it he suggests the use of a "doublet" with its flat top so dimensioned as to tune approximately to the wavelength or narrow band of wavelengths on which reception is particularly desired.

While the scheme may not provide any advantages where reception is to be attempted on all short-wave broadcasting wavelengths, it would appear to be of value in cases where it is desired to improve the reception of any one station, say, for instance, W6XN. With the aerial built to tune to that station's wavelength it is probable that background noises could be decreased and signal strength increased to such an extent as to make the special aerial thoroughly justified.

The "doublet" aerial mentioned consists of a wire not quite half a wavelength long and divided into two halves by an insulator at the centre. On each side of this insulator a feeder wire is attached, the feeder taking the form of a pair of twisted flexible wires—ordinary lamp cord would serve. This feeder should be at least half as long as the aerial proper, and is connected to a primary coil inductively coupled to the grid coil of the receiver.

The required total length of the two halves of the aerial proper can be found readily by multiplying the wavelength on which reception is desired by 1.56, the answer being in feet. For receiving W6XN, as an example, the aerial would have a total length of 36 ft. 5 in., approximately. It would be divided at the centre, and would have a feeder at least 19 feet long.

Transmitter Valve Amplifiers

MODERN practice in radiotelephone transmission, both on the broadcast band and the short wave, calls for the use of a highly stable oscillator feeding a series of amplifiers. Modulation is introduced at some point in the chain of amplifiers removed from the oscillator by at least one amplifier stage. The aim in doing this is to avoid the modulation affecting the frequency of the oscillator. The amplifiers of such a transmitter are operated in different fashions, depending upon their location in the circuit, and in order to de-

Curves Ahead

The
Experimenters
Department
of Technical
Progress..
Conducted by
ROSS A. HULL
M.I.R.E.

scribe their mode of operation some new terminology has been introduced with which the student of transmission might well be familiar.

The first of the amplifier types is that in which the wave form of the output is essentially the same as that of the input voltage. It is now known as a Class A amplifier. A parallel of it is the ordinary power amplifier in the broadcast receiver, on which the grid bias is so adjusted that operation is limited to a relatively straight portion of the grid voltage-plate current characteristic. Plate current flows at all times, and a reading of it on a D.C. meter is quite steady when the normal audio frequency excitation is being applied to the grid. The efficiency of such an amplifier is low on account of the small permissible grid swing. Excessive grid swing results in an increase in the second harmonic, and, if the grid should go positive, the flow of grid current.

Amplifiers of the Class A type are used in the radio frequency end of a radiotelephone transmitter between the valve being modulated and the aerial. They are also, of course, to be found in the speech amplifiers, while the modulator valve is another example.

Class B amplifiers are those in which the bias voltage has been increased to the point where no plate current flows when the valve is not being excited—biased to "cut-off" is the term used. In this case the output is proportional to the square of the exciting grid voltage, and the efficiency is higher than in the Class A type. The Class B amplifier is used in a push-pull radio frequency stage, coming after the modulated valve.

The Class C amplifier is one in which the bias has been carried to approximately twice the value necessary to secure plate current cut-off. The chief characteristics of such amplifiers include very high efficiency and an output which varies approximately as the square of the plate voltage. In the transmitter an amplifier of this type would be the valve being modulated, or one of the radio frequency amplifiers immediately following the oscillator. Operation with this high bias results in a definite increase in the amplitude of the second harmonic. This feature may be used to advantage in a radio frequency stage if it is desired to double the output frequency of the oscillator or preceding amplifier.

The study of the amplifiers in the 'phone transmitter is one of great interest and value, as is the examination of modern methods of modulating. Amateurs throughout the world are making considerable strides in the technique of short-wave 'phone transmission by employing modern methods.

It is rather surprising that those responsible for our broadcasting stations have not already followed suit.

The Superheterodyne

MR. C. M. STEPHENSON, of Townsville, Queensland, has some interesting comment concerning his experiences with the super-het type of receiver. He writes:

"I was most interested in the latest receiver, the a.c. super-heterodyne. I built two receivers very like this one fifteen months ago, except that they were battery-operated sets, the s.g. a.c. valve, as far as I am aware, was not available at that time. I did not use a s.g. valve as a second detector; the first detector was also an ordinary three-element valve. The i.f. amplifier was a two-stage affair, with UX222 valves in a tuned impedance circuit. The inductances were tuned with midget condensers to about 450 k.c. Each and every stage was shielded in heavy-gauge brass shields. There was a stage of s.g. tuned r.f. ahead of the first detector. The two-stage audio wound up with two 171's in push-pull. I wound all the inductances, including the r.f. chokes, altogether 17 in number, and this, I think, you will agree, was some job. The oscillator dial I could never get to track properly with the dial tuning the r.f. and first detector circuits, as the oscillator condenser would have to be specially constructed because of the difference in frequency of the two circuits involved. I had a small amount of regeneration applied to the second detector, and, as this valve is operating on a fixed frequency, the reaction condenser, once set for best results, could be left alone. The regeneration control was inside the detector can, so that it could not be monkeyed with. Each circuit was of the shunt-feed type. I like this best, as it keeps the plate voltage off the variable condensers, and saves the batteries in case of the plates ever fouling, and, in the absence of any proper measurements, seem to give as good results, providing a choke of the proper characteristics is used in the circuit."

"Both of the sets mentioned gave extraordinary results, and I feel sure you would be interested to know that someone else has had a crack at something similar to the set described by you. I am very interested in your set, because it is the first time I have ever seen a super. described that was anything like the ones I built. The high i.f. is a great advantage, because of the possibility of tuning it after the set is assembled, and also it eliminates the signals from being tuned at more than one place on the dial."



MANILLA,
PHILIPPINES

2 NEW CHAMPIONS

Champion Power Amplifier UX-245



POWER Amplifier designed particularly for A.C. operation and long life. Its output impedance is low enough to work into present dynamic speakers. It is essential with this valve that some sort of a coupling device be used to keep the high D.C. plate current out of speaker windings. The undistorted power output at maximum rated conditions for this valve is approximately twice that of the present 171A. NOTE: this valve cannot be interchanged with 171A unless special changes are made in set for lower filament voltage.

30/- each

Champion Radio Frequency Amplifier UY-224



A VALVE built to work with A.C. filament. Its particular advantage is in radio frequency amplification, when, due to the shield grid, no neutralising or stabilising devices are necessary, with the result that the amplification per stage of radio frequency is many times that of the ordinary three electrode valve. It can also be used as an intermediate audio amplifier where the power handled is not too large. In either of above uses special circuit arrangements are necessary.

32/6 each

Champion Valves are built to last longer and give better reception free from tube noises

Send For Free Catalogue

International Radio Company Limited,
229 CASTLEREAGH STREET, SYDNEY, N.S.W.
FACTORY REPRESENTATIVES

Explaining the Short-Wave Receiver

WE have seen how valves detect, amplify, and oscillate. The prime factor in reception is the first of these, i.e., detection.

For the reception of continuous waves oscillations must be generated in the receiver. When the detector produces the oscillations the receiver is said to be an "autodyne." The detector produces weak oscillations of nearly the same frequency as the incoming C.W., and the two oscillations are added together in the input circuit to the valve.

"Two tuning forks of slightly different frequency beat upon each other, alternately adding to and neutralising each other. The beats are of low frequency (the difference of the frequencies of each tuning fork).

When receiving Morse signals the receiver is in a state of oscillation, but for telephony signals the receiver may be just on the point of oscillation. If the receiver is adjusted beyond this point, the signal will be distorted.

In radio work, continuous waves are ordinarily received by the "autodyne" method. Inaudible high frequencies are combined to produce an audible beat note. When a valve is used, especially to generate the local frequency in order to beat on the incoming signal, we have the "heterodyne" method.

The standard amateur regenerative receiver discussed in last issue employs the "autodyne" method of reception. In this method one valve acts not only as an oscillator, but as an oscillator, detector, and amplifier. The ordinary Reinartz arrangement recently treated in this paper, together with notes on regeneration, detection and amplification, will help one to understand the autodyne method.

TUNING.

In all radio work, tuning is of great importance. Tuning consists of altering or adjusting the capacity and inductance of the condensers and coils in order that the circuit will respond to certain wavelengths which we desire to receive. You will remember that in earlier lessons we were told that when signals are to be received the sending and receiving stations should be tuned to the same wavelength.

Owing to the fact that the amateur wavelength bands are very narrow, tuning is very critical. For this reason it is very necessary that some method of tuning is used whereby the tuning arrangement (usually the variable condenser) is made to alter its capacity very slowly. This can be done by means of a vernier control. With an ordinary dial, one revolution will cause one complete revolution of the variable plates, but with a vernier dial the knob may be turned round sometimes 100 times before the rotor plates of the condenser have completed the full 180 degrees. This would be termed a 100-1 ratio vernier. The higher the ratio of the vernier, the better control we shall have over sharp tuning.

By using a small variable condenser and a number of removable coils it is possible to design a practical and efficient receiver that will cover any or all of the wavelengths used by the amateurs.

The fewer the number of controls on a radio receiver, the easier it will be to tune in a station. In a modern short-wave receiver there are only two, or at the most, three controls.

BODY CAPACITY.

Body capacity is the effect of the body on tuning. After building a broadcast receiver

Radio Proficiency

Continuing the series
of articles for the
A.O.P.C. course

one might note that movement of the hands to or from the tuning dial or dials affects the station so that it may fade away or become louder, depending on the position of the hands with respect to the dial. In the case of a broadcast receiver, there is no excuse for this, and it will usually be found that the connections to the variable condenser have been reversed. The effect is caused through the body acting as a capacity earth.

In a short-wave receiver, however, we are dealing with high frequencies, and it usually becomes necessary to screen (if not the whole receiver) the front panel. The screen is connected to the earth terminal of the receiver.

BROADCAST AND SHORT-WAVE RECEIVERS.

The chief difference between broadcast and short-wave receivers is that smaller condensers and coils are used in the latter. The broadcast band covers from 200 up to about 600 metres. The short-wave bands are spread over various wavelengths from 5 metres to 200 metres.

The method of tuning any radio receiver is the same. If of the oscillating type, the reaction control (which may be a variable condenser arranged so as to feed back energy to the grid circuit, as discussed last week), or any other of the methods treated previously, is so adjusted that the receiver is in an oscillating condition. The receiver is most sensitive when it is just past the oscillation point. One can tell when the receiver is so adjusted, because movement of the reaction control causes a swishing noise in the telephones or loud-speaker. If a loud pop is heard as the receiver goes in and out of oscillation, there is something wrong with the reaction part of the set, or the plate of the detector valve is being overloaded by using too much plate voltage.

The construction of a short wave receiver is relatively a simple affair compared with a broadcast receiver. It is nothing for the short wave listener to hear G5SW (London, England) on three, or two, or even one valve.

With a detector and two audio stages it is quite common to receive the same station on the loud-speaker early in the morning. No three-valve broadcast receiver would receive such a distant station at the same volume. This can be explained by saying that the short waves are not absorbed to such an extent as are the broadcast waves (long waves).

An interesting story by Mr. A. L. Budlong in the A.R.R.L. handbook shows how amateurs started on 1000 metres. Later regulations forced them down to 300 metres, and they were surprised at the distances worked. Again they were sent down to 100 metres, with even more surprising results, and even later well below that figure. Amateurs to-

day work on wavelengths down as low as 5 metres, and some experimenters are working on a fraction of a metre.

AMATEUR BANDS.

There are five narrow "slices" allotted to amateurs. Between these are large gaps, on which many commercial stations may be heard.

In order to save a lot of unnecessary tuning over these gaps, and in order to cover satisfactorily all amateur wavelengths, a coil is generally used for each waveband. The condenser allows one to tune slightly above and below the band.

The commercial stations are often a splendid guide to the location of the amateur bands, since usually they are allotted frequencies near the limits of the territory in which amateurs are permitted to operate. One of the problems involved in putting an amateur receiver into operation is in the adjustment of the coils and tuning condenser, so that the various bands will be covered. However, with a knowledge of the code, it is usually possible to locate some of the high-powered commercial stations, and from them the approximate locations of the amateur bands.

The wavebands allotted by the International Radiotelegraph Conference for amateur use are:

7496 metres to .7477 metres. 5-5.36 metres. 10-10.71 metres. 20.83-21.43 metres. 41.1-42.9 metres. 75-85.7 metres, and 150-175 metres.

The five last-mentioned wavebands have proved most useful in carrying on actual communication over great distances. The experimenter is most interested in the first two wavebands, about which least is known.

Certain effects are noticed on the different bands. Some bands are better than others for night work. Other bands are better for summer than for winter work.

All the bands are in approximate harmonic relation, although, as will be seen from the list given above, some bands are wider than others. The widest band is the 160 metre band. The harmonic relation is not exact and holds true only for certain sections.

The 40 and 20 metre bands have proved best for low power work over long distances both day and night. 20 metres is excellent for DX (long distance) in daylight. At night, many records have been made on the 160, 20, 40, and 20 metre bands. The 28 mc. (megacycle) band has proved itself very useful for long and moderate distance communications on different occasions.

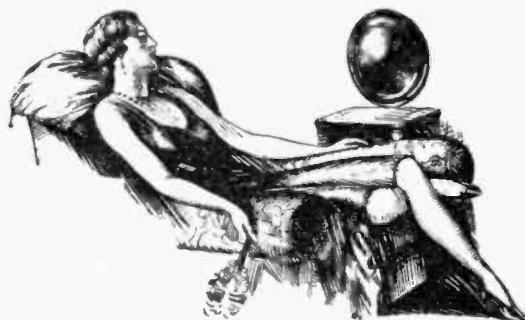
The 80 metre band is regarded as best for all consistent domestic communication, as it is good all the year round except for a few summer months. It is good for moderate distances, say 1000 miles.

The 160 metre band is a popular one for telephony, and is also open for amateur television and picture transmission.

Next week we will proceed to discuss in detail the practical considerations involved in the short-wave amateur receiver.



NO AERIAL . . . NO WIRES . . . NO BATTERIES



THOUSANDS are changing their out-of-date-sets for this entirely new Auto-electric because of its compactness, its tidiness . . . because it has no aerial, no batteries, no wires . . . because it operates automatically in any room on any voltage, direct from light or power point . . . because of the new purity and realism of its tone and its amazing range of volume . . . because of its permanence. There are many other reasons why everywhere people are changing their sets for the New Astor-Aladdin Auto-electric — the Super Radio. Ask your Astor Dealer!

Handsome Console model with antique figured-steel cabinet by Butler, in four optional colours of Jade Green, Brown, Peacock Blue and Copper. New Triplex Junction ensures automatic precision in selecting stations. Solo-dial control. Safety dial lamp. Many entirely new features. Current consumption less than that needed for an extra house light. 12 months' guarantee. Price: 35 gns., absolutely complete. Nothing extra to buy. Terms to suit you. Weekly payments from 9/6 to 14/3 weekly. Deposit from

£3:15

The NEW

ASTOR-ALADDIN

AUTO-ELECTRIC
Super Radio

With the Magical New
Philips' Wonder Valves

There's an Astor Set
for Every Purse.

See and Hear it

At any Astor Dealer or
the N.S.W. Distributors:

AMPLION AUST. LTD., Bradbury House, 53 York Street, Sydney

A.A.G.J./29.W.

A Simple Heavy Duty OUTDOOR PUSHER

Constructional details for a model 'plane for early beginners.

By NORMAN LYONS

AT the request of many beginners, who complain that the delicate, sensitive models which have been published are too exacting in construction, this model is suggested. It is easy to construct, and yet will give a short flight of 150 to 200 yards. It is a single-screw monoplane, and it flies with the propeller behind.

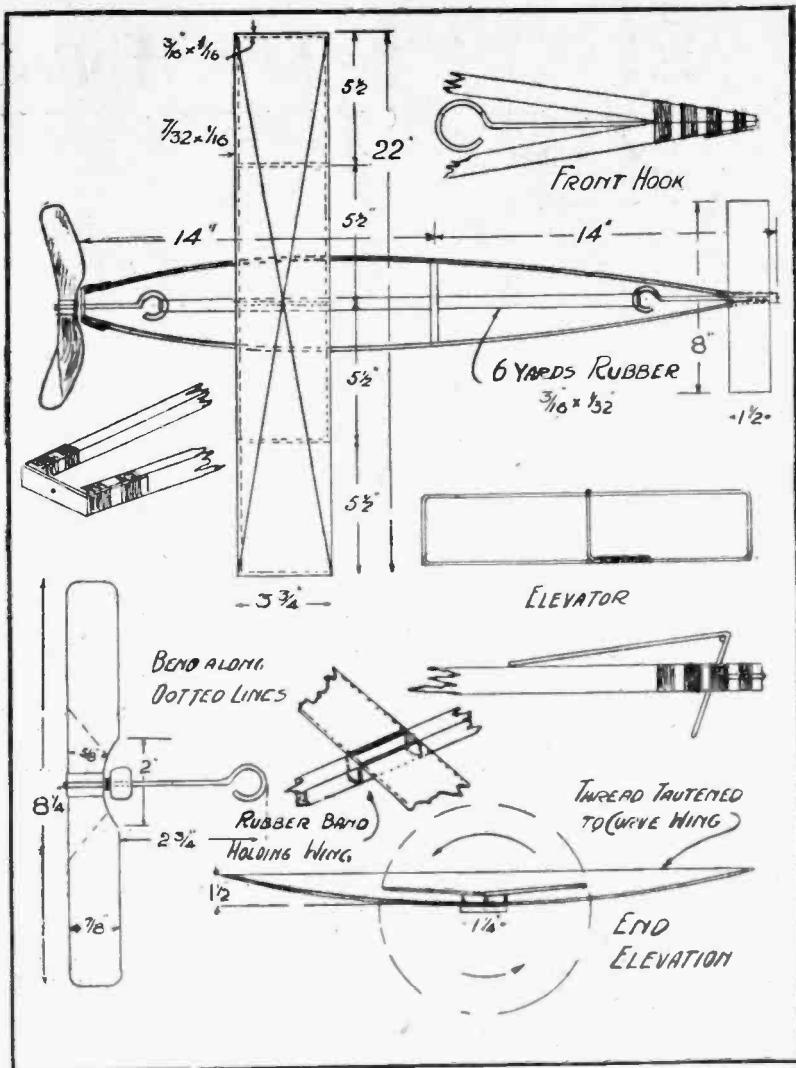
The first thing that a beginner must do is to study the drawings, locate each part, and memorise it, so that, when constructing the model, the shape and the reason for the shape are thoroughly understood.

FUSELAGE.—The two fuselage sticks are 3-16in. x $\frac{1}{8}$ in., the 3-16in. being the depth. Care must be employed to see that both pieces are of exactly the same length and section. This can be assured if one piece of timber is prepared, and, when finished, cut down the centre, making two spars. These can be sand-papered smoothly, using No. 0 sand-paper.

The next step is to prepare the combined thrust bearing and bracket. It should be a piece of brass 1 $\frac{1}{8}$ in. x 3-16in. x 1-32in., bent so that the two lugs will engage the fuselage sticks as shown in sketch. A hole to take the propeller-shaft must be drilled in the centre. If a drill is not available punch a hole through with a gramophone needle. The bearing is to be tightly bound to the fuselage sticks and then coated with A.C. adhesive. Now bend a hook to the shape shown in the sketch. Before the two ends are brought together they must be cut at an angle to ensure a good joint. But before they are lashed together the front hook must be placed in position, and the whole is then coated with adhesive in the same manner as the thrust bracket.

We now have the bearing and the hook fixed in position. It only remains to bend the frame to complete the fuselage. This is effected by fixing a cross-spar in position, as shown in the sketch, firmly lashing and cementing it. The whole should now receive a couple of coats of Double-A dope to strengthen and to proof the wood and lashing against moisture.

WING FRAME.—Now that the fuselage is finished, the main plane may be constructed. This is built of thin strips of pine or spruce cemented together as shown. It is advisable to set out the wing shape to size on a board, so that the wing spars and ribs may be placed in the correct position, remembering that the ribs are placed on top of the spars. The frame is now complete, and should be cemented and left to harden. When thoroughly set the edges may be carefully sand-papered to remove any sharp or rough places.



ELEVATOR.—The elevator frame is made from piano-wire, and is made in one piece, as shown in detail. It will be noticed that the centre rib continues over the leading edge, and is bent downwards and backwards, as shown in the sketch. This projecting arm provides the means of securing the elevator to the fuselage, as it is passed through a hole drilled in the nose of the frame. The elevator arm should fit the hole nicely, and when bent back at an angle causes the trailing edge of the elevator to bind on to the spar. It will be found that no further security is necessary, as the elevator will remain quite rigidly in place during a flight.

It is necessary that the joint in the wire frame, which, it will be seen, is at the back, or trailing, edge, must be bound with fine tinned wire (florists' wire will answer the purpose splendidly) and lightly soldered. Of course, it is also necessary that the centre rib should be soldered where it passes over the front (or leading) edge and continues downward to form the adjusting arm. When complete, it should be placed on a flat surface, and, with a pair of pliers, all signs of warp or twist must be taken out until it lies quite flat.

At this stage the wing and elevator are ready to be covered. They may be covered with either Cellaero tissue or light-weight Jap. silk. Although Jap. silk is much heavier

than tissue, for the beginner it will be found more serviceable, standing very much harder wear than the tissue, which is easily punctured.

Before attempting to cover the wing frame, it must be given one coat of dope to prepare it for the fabric. While the frame is drying cut the fabric out to size, allowing sufficient to pull underneath the spars, so as to present a neat top appearance. Cement it in position to the under surface of either of the two end ribs, and leave to dry. When set, pull the fabric tautly over the frame, so that the latter bends up slightly, as shown in the end view, and cement along under the second end rib. The bowing up of the frame, it will be noticed, has a tendency to prevent this end from sticking, so spring paper clips or spring clothes-pegs must be used to keep the fabric in position until the adhesive has set. Finally, stretch the fabric over the leading and trailing edges of the wing, using the spring clips as before, taking care that all wrinkles in the fabric are effaced. When thoroughly set, all rough edges should be cut away with a safety-razor blade, care being exercised that the wing surface is not damaged.

To give the wing a dihedral or upward angle of 13°, it is diagonally braced with linen thread.

The elevator, it will be found, is quite easily covered by cutting the fabric a little

over size, pinning it tautly in position and then sewing it with an over-and-over stitch.

The wing and elevator are now ready to be "doped." It must be thoroughly understood that the fabric should be quite airtight, and, viewed after the first coat of dope for pores, as it is upon the presence or otherwise of those pores that the necessity for a second coat depends. Cellulose dope should be used for preference; but if unprocureable a good dope may be made from carriage varnish slightly diluted with turpentine. This mixture should be thinly and evenly applied with a flat brush, one or more coats being applied according to the appearance after the first. When thoroughly dry, the wing is held in position by the use of thin rubber bands, as shown in sketch.

Now place the elevator in position, with its leading edge about one-eighth of an inch off the frame.

PROPELLER.—This is the most important part of the model, as on its efficient working the success of the machine depends. As so much has been written regarding carved propellers, little remains to be said. It can be carved from a block 8 $\frac{1}{2}$ in. x 2 x 2, or cut from a very thin piece of veneer, 8 $\frac{1}{2}$ in. x $\frac{3}{4}$ in. x 1-16in., to the shape as shown in sketch. Around the centre of the blank a tin strip is to be soldered to both sides. To bend the blank, hold the blades in a jet of steam, and gently twist along the dotted lines, shown in the drawing, until it remains where twisted. Only twist one blade at a time, and when finished see that each is bent to exactly the same degree. The propeller should revolve in the direction as indicated by the arrows in the end elevation of the model. When satisfied that the propeller is quite true, the tips may be sandpapered down to 1-32 of an inch, and may now receive a couple of coats of dope.

Before the propeller shaft is passed through the thrust bearing, place a small, smooth glass bead on the shaft to act as a washer. Cover the hooks at both ends with a piece of valve tubing to prevent them from cutting through the rubber motor.

To power this model, six yards of 3-16in. x 1-32in. flat rubber is required, looping it over the hooks and tying the ends in a square knot. It is advisable, before the rubber is wound, to smear it with rubber lubricant. This prevents the rubber strands from adhering to one another, and also enables more turns to be given to the skein, which, of course, means more power.

Before attempting to fly the model, it must be glided to adjust its balance. Hold it about level with your head, the left hand supporting the front and the right grasping the propeller. Give it just a gentle forward thrust with the right hand, and, of course, at the same time releasing the left. If everything is in right position it will gently glide to the earth, but if, on the other hand, it has a tendency to rise move the main plane a little to the rear, not more than 1-16th of an inch at a time. Never attempt to fly the model until it glides perfectly. The model may now be tested in actual flight by giving the propeller 150 turns in the correct direction. Otherwise, it will attempt to fly backwards, and, needless to mention, fail miserably.

To launch the model, grasp the propeller in the right hand and support the nose with the left. Face the wind, and send the model away gently. If you have everything set correctly the model will rise and fly steadily for about 150 to 200 yards.

Should the model under power tend to "stall" (rise too sharply and fall back on its tail) or dive, then similar adjustments are necessary, just as you made when gliding the model.

The maximum number of turns will be about 350, and should be gradually worked up to, but not until you are quite certain the model is correctly adjusted.

New Apparatus Tested & Approved



The Ferranti AF5cc

At last there has appeared on the market a "double" or intermediate push-pull audio frequency transformer—as far as we are aware, the first of its kind. It is, of course, fitted with a centre-tapped primary, as well as a centre-tapped secondary, and is designed to be used between a low-powered push-pull stage and the higher-powered push-pull output stage. In the ordinary two-stage amplifier, where the pair of output valves have an undistorted rating of two or three watts, it is rarely necessary that the valve of the first amplifying stage should have to operate with a grid swing greater than three or four volts. In such cases, therefore, a single low-powered amplifying valve is often entirely satisfactory. When the output of the final valves is to be much greater than two or three watts, however, it is necessary for the grid of the preceding amplifier to take care of much greater input voltages. A single fairly high-powered amplifier will then serve the purpose, in the same way that a single valve can serve in the output stage; but at the same time it is a distinct advantage to be able to use a pair of valves in push-pull. It is this that the new transformer makes possible. For amplifiers to be used for outdoor work or in halls or auditoriums the AF5cc should be of very great value.

Of course, there should be a field of application for it even in the relatively low-powered amplifiers, such as are used for electrical reproduction from a "pick-up." Some of the pick-ups are capable of an output of at least two volts on the loud passages, and when exciting the first amplifier through a transformer this means that the grid swing might well be in the vicinity of five or six volts. The usual general purpose type of valve incorporated in this first stage is capable of handling this input when the plate voltage is at the maximum rating of the valve, but a push-pull stage in its place would give all of the advantages for which push-pulling is noted.

We need say little concerning the transformer itself. It is distinguished by high-grade workmanship so typical of Ferranti apparatus, and, very clearly, there is the same sound engin.

the AF5cc in a three-stage (five valve) amplifier with completely satisfactory results.

World-wide Short-wave Coils

Owners of the well-known Cossor "Melody Maker" will be pleased to hear that a set of two short-wave coils are now available with which the set can be converted for work on wavelengths between 20 and 40 metres. The coils are wound on bakelite tubing, and are provided with pins so arranged as to fit into the coil sockets provided in the "Melody Maker." It is to be expected that the tuning on the short-waves will be extremely sharp, but entirely satisfactory operations can be obtained with the new coils, provided due care is taken with the tuning.

New Aerial Protector

Aerials, as well as telephone and telegraph wires, can be protected against over-voltages caused by atmospheric discharges (a result of thunderstorms, rain, etc.) in a very simple and reliable way by using a new rare gas over-voltage protector which Messrs. Philips Radio are placing on the market under the name of the "Aerial Cop."

Before the voltage becomes so high that it is dangerous the charge is conducted to earth. The advantage is that the rare gas fuse remains permanently ready for use, and is able to lead off a new charge immediately. At a certain voltage, referred to as a starting voltage, discharge commences. As soon as the voltage is reduced to a certain

value, called the extinguishing point, the discharge ceases. No switches are necessary with this device, as the aerial is always automatically protected. The rare gas cartridge is supplied in a weatherproof glass tube with a covering of porcelain cowl for protection against inclement weather, insects, etc.

JOIN THE M.A.C.A.

Aeroplane model building and flying is the best way to become air-minded. WIRELESS WEEKLY has arranged with the Model Aeroplane Club of Australia to enrol boys without charge. Simply fill in the coupon below and send it to the M.A.C.A., c/o WIRELESS WEEKLY, Phillip Street, Sydney. Send the coupon now. If desired, the M.A.C.A. Badge will be forwarded for 1/-, post free.

MODEL AEROPLANE CLUB OF AUSTRALIA,
C/o National Broadcasting Company,
Market Street, Sydney.

I wish to enrol in the M.A.C.A., sponsored by WIRELESS WEEKLY.

(Your name printed clearly.)

Age Address

Town State

Please forward Club Badge, for which I enclose Postal Note for 1/-.
(Cross out if not required.)

OUT IN FRONT



PHILIPS Laboratories — the design of the Valve — the results they give—all are OUT IN FRONT—unquestionably years ahead of competitors.

It is to Philips that credit must be given for the introduction of the Pentode five element valve, and the A.C. Screen Grid tube—both of such revolutionary design that it was made possible for three valves to do the work of five.

PHILIPS

VALVES AC AND DC

Local Programmes, Friday, October 18

2FC

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and meteorological information for the man on the land.
- 7.3: This morning's news, from the "Daily Guardian."
- 7.8: Austradio musical reproduction.
- 7.45: Mails and shipping.
- 7.48: What's on to-day?
- 7.50: Children's birthday calls.
- 8.0: Music from the studio.
- 8.15: Close.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
- 10.32: To-morrow's sporting events, by Oscar Lind.
- 10.45: Price Dunlavy at the Grand Organ.
- 11.0: Household Helps: Cooking, by Miss Ruth Purst.
- 11.10: Cables (copyright), A.P.A. and "Sun"—"Herald" news service.
- 11.15: Morning devotion.
- 11.30: Austradio musical reproduction.
- 11.53: British official wireless press.
- 12.0: "Big Ben"; Stock Exchange, and metal quotations.
- 12.5: Francis Jackson will speak on "The Tragedy of Macbeth."
- 12.20: Midday weather forecast, and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
- 12.30: Close.

THE LUNCH HOUR—1 to 2.30 p.m.

- 1.0: Lunch-hour music.
- 2.0: Stock Exchange, second call.
- 2.2: A glance at the afternoon "News."
- 2.7: Popular education; Captain L. Roberts will speak on "Zululand in Peace and Character."
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: The 2FC Instrumental Trio.
- 2.40: Doris Lascelles, monologues—"Stage-struck" (Foster).
- 2.51: Phillipa Scheidel, pianist—
 - (a) "Arabesque in G" (Debussy).
 - (b) "Juba Negro Dance" (Dett).
- 2.58: Florence Yates, contralto—
 - (a) "Mighty Like a Rose" (Nevin).
 - (b) "Vorrei" (Tosti).
- 3.5: The 2FC Instrumental Trio.
- 3.17: Doris Lascelles, monologues—"All About Beaux and All About Belles" (Dixon).
- 3.24: Phillipa Scheidel, pianist—
 - (a) "Old Vienna" (Godowsky).
 - (b) "Seguidillas" (Albeniz).
- 3.31: The 2FC Instrumental Trio.
- 3.38: Florence Yates, contralto—Songs from Song Cycle, "The Little White House" (Arundale).
- 3.45: The 2FC Instrumental Trio.
- 4.0: "Redgum" will speak on "Gardening."
- 4.15: The 2FC Instrumental Trio.
- 4.28: Stock Exchange, third call.
- 4.30: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" stories, told by the "Hello Man," assisted by Aunt Elly.
- 6.45: Dinner-hour music.
- 7.30: A.B.C. sporting service.
- 7.37: Special country session; Stock Exchange resume; markets; weather forecast; late news service from the "News"; truck bookings.
- 7.58: To-night's programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- 8: The feature of 2FC's programme to-night is the talk by W. A. Oldfield—"My Impressions of English Cricket While Abroad." There is also organ music, concerted numbers by the Harmony Four, harp solos, a snappy talkie short. At 9.15, 3LO Melbourne's programme will be relayed. Through 2BL we have a night of classic song groups by Marjory Allomes, Mimi Gressier and Jack Kinson. Well known selection by the National Broadcasting Orchestra, and at 10 o'clock Wallace Nelson will continue his series: "Humor of Parliament," and his subject to-night "A Politician in a Fix" will provide an amusing interlude.
- 8.0: From Christ Church St. Laurence—

Organ recital, arranged by Christian Hellemann—

- (a) "Scherzo" (Lemaigre).
- (b) "Chansonette" (Sanderson).
- 8.7: From the studio: The Harmony Four—
 - (a) "The Comrade's Song of Hope" (Adam).
 - (b) "A Spring Song" (Pinsuti).
 - (c) "Lullaby" (Mote).

8.17: From Christ Church St. Laurence—Organ recital, arranged by Christian Hellemann—

- (a) "Serenade" (Jensen).
- (b) "Benedictus" (Mackenzie).
- (c) "Gavotte" (Thomas).
- (d) "Grand March" (Wagner).

8.40: From the Studio: Joyce Lang, harpist—

- (a) "Sans la Feville" (Thome).
- (b) "Waltz in A Flat" (Brahms).

8.47: The Harmony Four—

- (a) "O Who Will O'er the Downs So Free" (Pearshall).
- (b) "Moonlight and Music" (Pinsuti).
- (c) "When Evening's Twilight" (Hatton).

8.53: Joyce Lang, harpist—"Chanson Sans Paroles" (Fubes).

9.0: The country man's weather session—

- (a) "New South Wales Forecasts."
- (b) "Inter-State Weather Synopsis."

9.1: W. A. Oldfield—

- "My Impressions of English Cricket While Abroad."

9.16: Relay from 3LO Melbourne.

10.15: From the Studio: Announcements. Late official weather forecast.

10.20: From the ballroom of the Oriental: Sydney Simpson's Syncopaters.

11.30: National Anthem. Close down.

2BL

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. chimes and announcements.
- 8.16: Music for every mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and shipping information.
- 8.50: Memory melodies.
- 9.0: This morning's story.
- 9.30: A musical interlude.
- 9.40: British Official Wireless press.
- 9.45: New music.
- 10.5: News from the "Daily Guardian."
- 10.10: Austradio musical reproduction.
- 10.40: The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.

11.0: G.P.O. chimes. Close down.

MIDDAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
- 12.2: The National Broadcasting Orchestra.
- 1.0: Afternoon news from the "Evening News."
- 1.5: Studio music.
- 1.15: Women's Interest Talk—Mrs. Meredith-Atkinson, "Incidents of Travel."
- 1.30: Austradio musical reproduction.
- 2.0: J. Knight Barnett at the Wurlitzer.
- 2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business Efficiency Talk—Major Sandford Morgan will speak on "A Visit to the Zeddees."
- 2.45: The Magic Carpet Series—"Stammering and How to Treat It" by V. C. Bell.
- 3.0: From the Oriental: Sydney Simpson's Syncopaters in dance music.
- 3.12: From the Studio: The Two Lornas in popular songs—
 - (a) "The Toyemaker's Dream" (Golden).
 - (b) "Broadway Melody" (Brown).
 - (c) "You Were Meant for Me" (Brown).
- 3.19: New music.
- 3.22: From the ballroom of the Oriental: Sydney Simpson's Syncopaters in dance music.
- 3.32: From the Studio: Laurel Mather, popular vocalist—
 - (a) "I'll Always be in Love with You" (Stept).
 - (b) "When My Dreams Come True" (Berlin).
- 3.39: Songs of to-day.
- 3.42: From the Ballroom of the Oriental: Sydney Simpson's Syncopaters in dance music.

3.52: From the Studio: The Two Lornas in Popular Songs—

- (a) "Sweetheart of All My Dreams" (Lowe).
- (b) "Sleepy Valley" (Hanley).
- (c) "Dance of the Paper Dolls" (Siras).

4.0: From the Ballroom of the Oriental: Sydney Simpson's Syncopaters in dance music.

4.12: From the Studio: Laurel Mather, Popular Vocalist—

- (a) "Bye and Bye, Sweetheart" (Valentine and Ford).
- (b) "The Sun is at My Window" (Meyer).

4.19: Radio rhythm.

4.30: From Liverpool: The Chairing of The King's winner.

4.45: The Trade Hour—Demonstration Music.

5.45: Weather information. Close down.

THE DINNER HOUR—6.15-7.55 p.m.

6.15: The Dinner Music Session.

6.45: The "Younger Set" Session: Boy Scouts' Club, conducted by Mr. Norman Lyons.

7.5: General Sporting Talk by Claude Corbett.

7.15: The Country Man's Market Session. Wool, wheat, stock, farm produce, fruit, and vegetable markets.

7.30: Austradio musical reproduction.

7.55: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30.

2BL offers listeners to-night well-known song groups, popular selections by the National Broadcasting Orchestra, piano forte recital of immense interest with foreword by C. N. Baeyeritz, Jack Kinson singing rollicking ballads with orchestral accompaniment, and at 9.36 Wallace Nelson in his series, "Humors of Parliament"—"A Politician in a Fix" will supply a pleasantly humorous interlude.

8.0: Marjory Allomes, contralto—

- (a) "Lavender Days" (Drummond).
- (b) "O, Could I but Express" (Maishken).

(c) "Jeunesse" (Barry).

8.7: Vincent Asprey, violinist—

- (a) "The Hunt" (Chabrano-Cortier).
- (b) "Tambourin" (Rameau-Kreisler).

8.15: National Broadcasting Orchestra—Overture, "Undine" (Sertzing).

8.22: Mimi Gressier, soprano.

8.30: Lily Price, piano forte recital, with foreword by C. N. Baeyeritz. Three Preludes—

- (a) "No. 3 in G Major" (Chopin).
- (b) "No. 4 in E Minor" (Chopin).
- (c) "No. 21 in B Flat Major" (Chopin).

8.42: Jack Kinson, baritone—with orchestral accompaniment—

- (a) "Devonshire Cream and Cider" (Sanderson).

(b) "The Song of Triumph" (Anderson).

8.49: Vincent Asprey, violinist—

- (a) "Rondo" (Schubert).
- (b) "Aloha Oe" (Liliuokalani).

8.56: Marjory Allomes, contralto—with orchestral accompaniment—

- (a) "I Did Not Know" (Trottere).
- (b) "Enchanted Glade."

9.3: National Broadcasting Orchestra—Selection, "Tom Jones" (German).

9.15: Mimi Gressier, soprano.

9.22: Lily Price, piano forte recital—

- (a) "Menuet Celebre" (Mozart—transcribed by Palmgren).

(b) "Wedding Day" (Grieg).

9.34: Weather information for the man on the Land.

9.36: Wallace Nelson continues his series—Humor of Parliament: "A Politician in a Fix."

9.51: National Broadcasting Orchestra—Selection of Squire's Popular Songs."

10.1: Jack Kinson, baritone—with orchestral accompaniment—

- (a) "The Company Sergeant Major" (Sanderson).

(b) "Trooper Johnny Ludlow" (Temple).

10.8: National Broadcasting Orchestra—

- (a) Military Overture, "Private Orthoris" (Annell).

(b) Selection, "The Fortune Teller" (Herbert).

10.25: Late news from the "Evening News." Late weather forecast.

10.30: National Anthem. Close.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session by Mrs. D. J. Steizer. 11.30: Music. 11.45: Close down. 1.30: Speeches from Musical Association. 2.0: Music. 2.5: Women's Radio Service by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Address by Miss Mary Rivett. 3.30: Close down. 5.15: Children's session by Uncle George. 7.0: Music. 8.0: Miss Gwen Simonsen, contralto. 8.7: Symphony orchestra. 8.15: Madame Betts-Vincent in an illustrated talk on music. 8.30: Mr. Clement Hosking, baritone. 8.37: Mr. Jack Win and Mr. Heath Burdock, humor. 8.42: Instrumental Trio. 8.50: Miss Dorothy Rose, soprano. 9.0: Weather report. 9.3: Address. 9.15: Symphony Orchestra. 9.20: Miss Gwen Simonsen, contralto. 9.30: Mr. Jack Win and Mr. Heath Burdock, humor. 9.35: Mr. Clement Hosking, baritone. 9.45: Instrumental music. 9.50: Miss Dorothy Rose, soprano. 10.0: Instrumental music. 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 261 Metres).

MIDDAY SESSION

12.30: Request numbers. 1.0: Chimes. Music. 1.15: Talk on Homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme.

EVENING SESSION

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request numbers. 8.0: Popular music of the moment. 9.0: Chimes. Comments on Foreign Affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

MORNING SESSION.—10.0: Tune in to the ticking of the clock. 10.3: Popular fox-trots. 10.15: Hawaiian steel guitar selections. 10.30: Women's session—home hints and information, Mrs. Gray. 11.0: A few laughs. 11.5: Pianoforte selections. 11.15: Calls and announcements. 11.20: Musical interlude. 11.30: Request numbers. 11.40: Music and vocal items. 11.55: Where to go to-night. 12 noon: Closing announcements. **CHILDREN'S SESSION**.—6.0: Birthday calls; request numbers and kiddies' entertainment, Aunt Jemima and Uncle Bert. **EVENING SESSION**.—7.0: Musical interlude. 7.5: Birthday calls. 7.15: Sporting feature, turf topics; review of candidates and their prospects for to-morrow, Mr. Geo. A. Davis. 7.40: Request numbers. 8.0: Hawaiian steel guitar selections. 8.15: Women's information service, Mrs. Gray. 8.30: Music and vocal items from the studio. 9.10: Sporting feature presented by Tooth and Co., Ltd., Kent Brewery, from ringside of McHugh's Leichhardt Stadium; full description of main 15-round event. 10.0: Closing announcements.

2UE

Broadcasting Station 2UE—Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION

7.15: Breakfast time hour orchestral music. 8.0: Clock and chimes. 8.1: Orchestral music. 8.30: Weather forecast. Close down.

MIDDAY SESSION

11.30: Old-time musical selections. 12.30: Announcements; conclusion of midday session.

AFTERNOON SESSION.

1.0: Vocal and instrumental selections. 1.45: Organ recital. 2.0: Music. 2.30: Close down.

EVENING SESSION.

7.15: Orchestral dinner music. 7.55: Programme announcements. 8.0: Clock and chimes. 8.1: Overture, "Morning, Noon and Night," by Suppe. 8.11: Vocal and instrumental concert. 10.15: National Anthem.



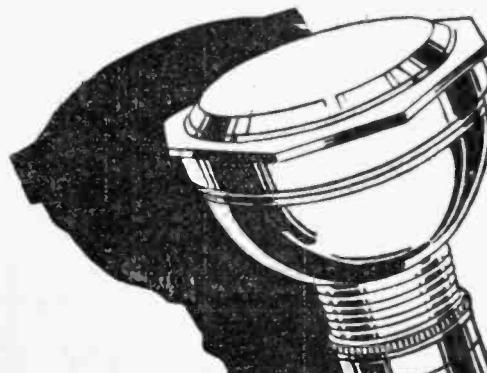
DANGER LIES IN DARKNESS

Groping blindly in the dark, tripping, stumbling over unseen obstacles, burning your fingers with dull matches with their attendant risk of fire! Truly, danger lies in darkness in many forms, lurking unseen because of the absence of light.

Take advantage NOW of the definite and everlasting protection that a genuine British "Ever-Ready" Lamp or Torch provides. Choose the model you prefer to-day and light up ELECTRICALLY for safety—instantly, surely and at little cost. Obtainable from all electrical and radio houses. Wonderful range of models priced from 2/9.

N.S.W. Wholesale Distributors:
THE EVER-READY CO. (Gt. Britain), LTD.
163 Pitt Street, Sydney

And, of course, you are quite familiar with the famous "Ever-Ready" Radio Batteries. Their popularity as QUALITY "Ever-Ready" products is evidenced by the demand for them throughout the Commonwealth.



EVER-READY LAMPS & TORCHES

Interstate Programmes, Friday, October 18

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0: Melbourne Observatory time signal. 7.1: Shipping news. 7.3: Physical exercises to music. 7.20: Reproduced music. 7.40: Mail notices. 7.42: What's on To-day? 7.45: Market reports. 7.53: Weather forecasts. 7.55: News service. 8.0: Melbourne Observatory time signal. 8.1: Arrival times of express trains. 8.2: Musical interlude. 8.15: Close down.

MORNING SESSION.

10.30: Current happenings in sport, by Mel Morris. 10.45: Musical reproduction. 11.30: Morning sales, Melbourne Stock Exchange; metal prices. 12.0: Melbourne Observatory time signal. 12.1: Musical reproduction. 12.15: News service, British official wireless news; Corn Exchange, midday report; Newmarket stock sales; Associated Stock and Station Agents' official report. 12.30: Close down.

MIDDAY SESSION.

1.0: Melbourne Observatory time signal; Stock Exchange information, meteorological data; weather forecasts for Victoria, New South Wales, South Australia, and Tasmania; ocean forecast; river reports; rainfall. 1.15: Comments on the day's news. 1.30: Musical interlude.

EDUCATIONAL SESSION.

2.0: Strange People of Strange Countries—Mr. H. J. G. Esmonde. 2.15: Musical interlude. 2.20: Gems of English Literature—Hans Andersen's Fairy Tales. Prof. G. H. Cowling, M.A., 2.35: Musical interlude. 2.40: A Talk in German—Mr. G. E. Green, M.A., Dip. Ed. 2.55: Musical interlude.

THE RADIO MATINEE.

3.0: Melbourne Observatory time signal. 3.1: Studio Light Orchestra—"Marche Mignonne" (Poldini); Nolette, "Dainty Miss" (Barnes). 3.6: "The Arist" Quartette—Ensemble; Violin, "Valse Triste" (Sibelius); "Shepherd's Dance" (German); Baritone, "Still as the Night" (Bohm), "The Pixie Piper Man" (Elliott); Piano, "Sonata in C Minor" (Beethoven), First Movement; "Waltz in D Flat" (Chopin); Ensemble. 3.36: Rita Hilton, entertainer—Songs at the piano. 3.44: Studio Light Orchestra—"Suite Melodique" (Friml). 3.51: A comedietta—"The Ninth Waltz," by R. C. Carton. Produced by Catherine Neil. 4.0: Her Edward Cathcart, She: Catherine Neil. 4.6: Bertha Jorgenson, violin—"Sicilienne" (D'Ambrosio); "Gondolas" (Pierini). 4.12: Rita Hilton, entertainer—Songs at the piano. 4.20: The Studio Light Orchestra—Selection. "You're in Love" (Friml). 4.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Plain Peter" and "Rollingstone Rita" are here again, and will sing some nonsense songs, and tell some funny stories. "Plain Peter" says "Many Happy Returns" to the lucky ones, then well have some music, and then he has a story for the older children.

EVENING SESSION.

6.34: Musical interlude. 6.40: What's wrong with your radio?—Mr. H. Kingsley Love. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's Session—Stock Exchange information; Corn Exchange report; Associated Stock and Station Agents' official report; mines and metals; fish and rabbit prices; farm and dairy produce report, supplied by the Inter-State Dairy Produce Committee; wholesale fruit prices, supplied by the Wholesale Fruit Merchants' Association; retail fruit prices, supplied by the Victorian Fruitgrowers' Association; fruit prices, supplied by the Victorian Central Citrus Association; weather synopsis; river reports; rainfall data. 7.25: Gardening hints—Rose Culture, Mr. James Allen. 7.40: The "Herald" news service. 7.45: To-morrow night's events at the Stadium, Cecil H. J. Williams. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: Half an hour of Old French Music, arranged by Mary Campbell.

SOMETHING LIGHTER.

8.30: Collingwood Citizens' Band (Conductor, F. C. Johnson)—Novelty number, "Slidin' Thro' the Rye."

8.31: A Piano Recital of Interest, Lloyd Powell, the famous Welsh pianist, will play "Concerto in A Minor" (Schumann). Accompanied by the National Broadcasting Orchestra.

9.0: An Interval of Hilarity—The Graham Howatt Entertainers present a burlesque musical sketch—"The Goosefied Presentations." We are now switching over to the Goosefield Town Hall, where a concert and presentation are to be tendered to Lord Goosefield, on his retirement from politics. The Lions of the Borough who are present include Sir Blinckaby Owlibus, the Honorable Herbert Pitt-Gizard of the Fifth Lancers, Mr. Jorkins, Town Clerk of Goosefield. Mr. Drake, Mr. Duckworth, Colonel Gander, and the Rev. Slocum. Among the ladies are Lady Owlibus, Miss Clementina Merrythought, Lady Liverwing, and Miss Gosling. Musical items will be rendered by the Goosefield Quartette.

9.20: St. Augustine's Band—Selection, "The Trovatore" (Verdi).

9.28: Mally Mackay, soprano—"The Star" (La Forza).

9.35: A.B.C. String Quartette—Movement from Quartette No. 15 (Mozart). 9.45: A Mystery Story—J. Howlett Ross, "The Tragic Watch."

10.0: St. Augustine's Band—"Picador" (Spousa); Scotch Romance—"Sandy's Frolic" (Raymond).

10.8: Sporting interlude—Eric Welch will speak on "To-morrow's Races at Caulfield."

10.28: "The Rex" Dance Band.

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 384 Metres).

EARLY MORNING SESSION.

8.15: Musical reproduction. 8.45: Weather. 8.0: Chimes. 9.1: News. 9.5: Musical reproduction. 10.0: Chimes. 10.1: British official wireless news. 10.10: Announcements. 10.30: Arnold Coleman on the Wurlitzer. 10.50: A message for the day. 11.0: Close down.

MIDDAY SESSION.

12.0: Chimes. 12.1: Famous women—Vestris, the First Actress Manager, Miss Lucy Abon, B.A. 12.15: Syncopation, 12.30: Luncheon music, supplied by Paul Jeacle and his Band. 2.0: Chimes.

AFTERNOON SESSION.

2.1: Duet, Layton and Johnstone. 2.8: Studio Light Orchestra—Selections with the Deck! (Yesterdays), 2.16: Melody, Hawaiian South Sea Islanders. 2.24: Comedy, Moran and Mack. 2.32: Studio Light Orchestra—"Squirrels' Dance" (Smith). "La Cinqutaine" (Marie). 2.40: Duet—Vaughan de Leath and Frank Harris. 2.48: Piano, Victor Arden and Adam Carroll. 2.54: Band, Debroy Somers Band. 3.2: Request numbers. 3.20: A chat by a prominent woman. 3.35: Musical interlude. 3.40: Home Management—A Sane Spring Cleaning, Miss Kathleen Benningfield. 3.55: Musical interlude. 4.0: A Woman's Wanderings—Through the Empire, Miss Frances Fraser. Traders' Demonstration Session. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by Paul Jeacle and his Band. 7.30: What's on the Air To-night? 7.32: Sporting results. 7.35: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION.

8.1: Australian Problems in Economics—Reciprocal Trade with Great Britain, Dr. W. Kent Hughes. Community Singing. 8.15: Transmission from Geelong—Conductor, W. Sampson. 10.20: Weather information and "Herald" news. 10.30: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (355 Metres).

MORNING SESSION.

11.0: Royal Guards Band—"Coronation March." 11.30: "La Vouge," "The World's Fashions and Foibles," 11.35: Dora Labette, "Rose Softly Blooming." 12.0: London String Quartette, "Nocturne." 12.30: Market reports. 12.35: Terence Casey, "Broken Dreams." 1.0: Walkiki Stone Wall Boys, "Panana Waltz." 1.30: Paul Whiteman and his Band, "Calinda." 1.45: Close down.

AFTERNOON SESSION.

2.15: Bournmouth Municipal Orchestra, Overture, "Zampa." 2.30: The Revelers, "Comin' Home" 3.0: Sponsored Session. 4.0: Close down.

EARLY EVENING SESSION.

5.0: Sponsored Session. 5.30: Dixie (piano accordion), "Romeo and Juliet." 6.0: Grace Hayes, "Did You Mean It?" 6.30: Anna Case, "My Laddie." 7.0: Royal Philharmonic Orchestra, "Fax Vobiscum." 7.15: Market reports. 7.30: De Groot's Orchestra, "The Merry Widow." 10.40: News. 11.0: Close.

EVENING SESSION.

8.0: Scotch College annual concert, transmitted from the Town Hall. 9.0: Nat Shilkret and his Orchestra, "Because I Know." 9.30: John Coates, "O, Mistress Mine." 10.0: Fritz Kreisler (violin), "La Vida Breve." 10.30: Rudolfo Melo, "La Paloma." 10.40: News. 11.0: Close.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 384 Metres).

MID-DAY SESSION.

1.0: Market reports and weather. 1.30: Lunch hour music. 2.0: Close.

AFTERNOON SESSION.

3.0: Records. 3.30: Mail train running times. 3.31: Records. 4.15: News. 4.30: Close.

EARLY-EVENING SESSION.

6.0: Dinner music. Mail train running times; mail information; shipping news. 6.25: Commercial announcements. 6.30: Bedtime stories, conducted by "The Sandman." 7.0: News in brief. 7.5: Stock Exchange. 7.6: Metal quotations. 7.7: Market reports. 7.23: Stock report. 7.30: Weather. 7.40: Announcements. 7.45: Train signals. 7.45: To-morrow's sporting fixtures reviewed.

NIGHT SESSION.

To-night's programme will comprise the relaying of a concert by 4QG artists, to entertain the citizens force troops at camp at Enoggera.

8.0: From Enoggera Camp—The Rhythm Rascals. In popular numbers.

8.10: Joe Dwyer and his pal Jerry—entertainers. 8.25: Harry Green and Mark Solomon—two boys in a band.

8.35: The Anglo Male Quartette—popular melodies.

8.45: Pete—the entertainer.

9.0: From the Studio—metropolitan weather forecast; week-end road information for motorists, officially supplied by the R.A.C.Q.

9.15: From Enoggera Camp—Joe Dwyer and Jerry, a discussion.

9.25: The Anglo Male Quartette—popular numbers.

9.35: Harry Grundon—at the piano.

9.40: The Rhythm Rascals—popular music.

9.50: Dick Pike (bass)—"Sergeant of the Line."

9.55: The Rhythm Rascals.

10.0: News; weather; close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION.

11.15: Chimes. 11.16: Recordings. 11.45: Kitchen Craft and Menu Talk. 12.1: Recordings news. 12.40: Recordings. 12.52: Railway Stock Exchange, and meteorological information. 1.0: Chimes; recordings. 1.50: Meteorological. 2.0: Close.

AFTERNOON SESSION.

3.0: Chimes. 3.1: Programme review and announcement. Studio concert. 3.30: "Australia" will tell an original story entitled "The Golden Lead." 3.45: Studio Concert. 4.15: An educational talk.

EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings, correspondence, songs and stories by "Miss Wireless"; Gwenda Bissett, child vocalist, will sing. 6.15: Request numbers. 6.30: "Happy Birthday" greetings. 6.45: Chimes. 7.1: Senior Birthday League greetings. 7.45: S.C. Ward's sporting service—"Silius" will give a special late review of the Caulfield Cup and other events to be decided at Caulfield and Gawler to-morrow. S. C. Ward and Co.'s Stock Exchange information. General market reports. 7.20: Mr. A. E. Whittenbury will speak on "To-morrow's Poultry Show." 7.35: Mr. E. Brinkman will speak under the auspices of the Royal Automobile Association. 7.45: Mr. A. Grenfell-Price, M.L.A., F.R.G.S., will speak on "Pioneer of Australia."

NIGHT SESSION.

8.0: Chimes. 8.5: Inspector F. J. Gartrell will speak on "The Torrens Valley Schools' Exhibitions." 8.10: Magill Vice-Regal Band—Quickstep, "Holyrood over the Hills." 8.15: Magill Vice-Regal Band—Grand Selection, "The Iron Division."

EVENING SESSION.

8.30: 5CL Vocal Championship. 9.0: Chimes. 9.1: Meteorological, including Semaphone tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Magill Vice-Regal Band—Quickstep, "Our Director" (with chimes). 9.6: Magill, soprano—"Castilian Lament" (Terese del Reijo). 9.45: Magill Vice-Regal Band—"The Lost Chord" (Sullivan); soloist, C. J. Emery; popular number, "Sunny Boy."

NIGHT SESSION.

10.0: Mary Edson, soprano—"Deeper My Love" (Terese del Reijo). 10.4: Magill Vice-Regal Band—Grand selection, "Der Freischütz."

10.15: News and weather. 5CL's Sporting Service "Silius" will give a special late review of the Caulfield Cup and other races to be decided at Caulfield.

CLOSE DOWN.

11.0: Modern dance recordings.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 345 Metres).

EARLY MORNING SESSION.

7.45: Chimes; weather. 7.55: Music. 8.30: Close. MORNING SESSION—TRADESMEN'S DEMONSTRATION—10.0: Chimes. 10.1: Music. 10.15: Women's interest talk, by Dorothy Graham. 10.30: Organ recital. 11.0: Close. MID-DAY SESSION—12.30: Chimes. 12.31: Music. 12.45: News. 12.50: Items of interest. 12.58: Weather. 1.0: Chimes. 1.1: Lunchtime music. 1.30: Close. THE RADIO MATINEE—3.30: Chimes. 3.31: Music. 3.45: Talk of interest to women. 4.0: Chimes.

4.1: Concert. 4.45: Features of this evening's presentation. 5.0: Close down. EARLY EVENING SESSION—5.45: Chimes. 5.46: Children's good-night stories, by Uncle Bas and Aunty Maxine. 6.15: A.B.C. Young Set Session—Telling Strange But True Stories. 6.30: Weather. 7.30: Weather. 7.31: News. 7.35: Market reports. 7.40: Stock Exchange.

7.42: Review of to-morrow's sporting fixtures. 7.57: Features of to-night's programme.

EVENING SESSION—8.0: R.S.L. Band. 8.20: James Conarty, garden expert. 8.35: R.S.L. Band. 8.45: A.B.C. racing observer. 9.0: Chimes; weather. 9.2: R.S.L. Band. 9.17: Ringdale description of wrestling contest. 9.30: Russian Sandeman. 10.0: Chimes. 10.17: Temple Court Dance Band, conducted by Merv. Lyons. 10.57: Features of to-morrow's programme. 11.0: Chimes.

7ZL

Tasmanian Broadcasters Pty. Bursary Bldgs., Elizabeth Street, Hobart (Wavelength, 516 Metres).

11.30: Recital. 11.34: Weather. 11.35: Recital. 11.55: Weather. 12.0: Chimes. 12.1: Shipping information; mail notices; housewives' guide. 12.6: Recital. 12.30: News; announcements. 13.40: Close. 13.5: British official wireless news; always auction.

14.0: Record recital. 14.30: Close. 14.35: Chimes. 1.3: Recital. 1.4: Weather. 1.5: Children's Corner, with "Uncle David." 7.10: Recorded music. 7.25: News session. 7.30: A studio concert by 7ZL artists (interspersed with instrumental numbers). 7.40: Duets—Rene Dyer, contralto, and Mary Green, soprano, selected. 7.49: Record recital. 7.59: Rene Dyer, contralto, and Mary Green, soprano. Selected. 8.0: Record recital. 8.27: Duet. Rene Dyer, contralto, and Mary Green, soprano. Selected. 8.31: Record recital. 8.45: James Counsel, "The History and Development of Music." 9.45: News session.

10.0: Chimes; close down.

**PROTECT YOUR RADIO
WITH A PHILIPS "AERIAL COP"**

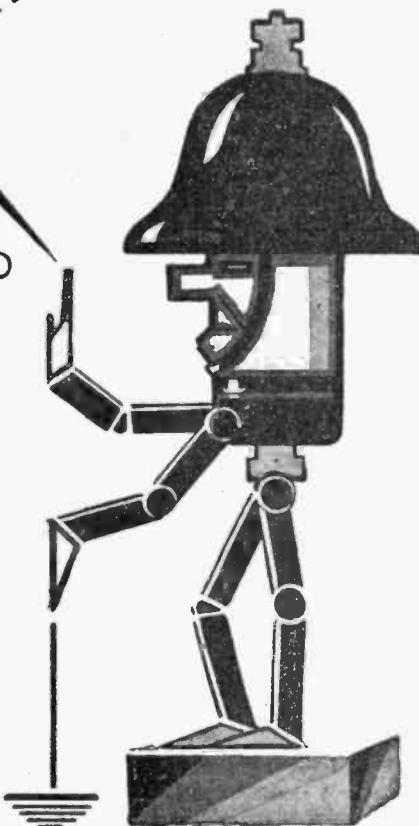


HE CLEARS THE WAY TO YOUR RADIO

HEED every vicious crackle coming from your radio as a danger signal—high voltages are in the air which might damage your receiver.

The "Aerial Cop" a combination of a Rare Gas Fuse and Lightning Arrester, will bring you safety when installed on the outside wall of the house. 'Twixt aerial and earth he clears the way to your radio, ever on duty and ready for any emergency.

The "Aerial Cop" also makes an excellent lead-in insulator.



10/-
at your nearest radio dealer.

PHILIPS
for better radio



Local Programmes, Saturday, October 19

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and meteorological information for the man on the land.
- 7.3: This morning's news from the "Daily Guardian."
- 7.8: Austradio Musical Reproduction.
- 7.45: Mails and shipping.
- 7.48: What's on to-day?
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: Close.

MORNING AND AFTERNOON SESSIONS

- 10.30: Announcements.
- 10.32: A.B.C. Racing Observer.
- 10.45: Studio music.
- 11.0: Household Helps—Week-end suggestions by Miss Ruth Furst.
- 11.10: Cables (copyright)—A.P.A. and "Sun"—"Herald" News Service.
- 11.15: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben"; Stock Exchange and metal quotations.
- 12.5: Austradio Musical Reproduction.
- 12.20: Midday weather forecast and weather synopsis.
- 12.30: Studio music.
- 12.50: From Randwick—Description of City Tattersall's Meeting in the running. During the intervals between the races musical items will be given from the Studio. Note.—The Caulfield Cup and Windsor Cup, run at Caulfield, Victoria, will be relayed through 3LC, Melbourne.
- 4.35: From the Studio: Complete sporting resume.
- 4.45: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" Stories told by the "Hello Man" assisted by Aunt Willa and Cousin Gwen.
- 6.45: Dinner hour music.
- 7.25: A.B.C. Sporting Service.
- 7.37: Special country session. Stock Exchange resume. Markets. Weather forecast. Late news from the "News."
- 7.58: To-night's programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- In these days more than ever is the cry reiterated. "There is nothing new under the sun," but 2FC's programme to-night proves the fallacy of this oft-repeated axiom. We are going to take our listeners for a moonlight excursion by radio! We will say no more—wait until to-night—it will be unique. Through 2BL Service a bright and varied programme is offered by the Sydney Operatic Society—droll humor by Sibley and Sayles, the two Sad Sunbeams, and exciting descriptions from the Speedway Royal to complete a popular offering.
- 8.0: Come with us for a moonlight excursion by radio! You will not be disappointed.
- 10.15: Announcements. Late official weather forecast.
- 10.20: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
- 11.30: National Anthem. Close.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 333 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. chimes and announcements.
- 8.16: Music for every mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and shipping information.
- 8.50: Memory melodies.
- 9.0: This morning's story.
- 9.30: A musical interlude.
- 9.40: British Official Wireless Press.
- 9.45: New music.
- 10.3: News from "The Daily Guardian."
- 10.10: Austradio musical reproduction.
- 10.40: Mr. Cooper will talk on "Gardening."
- 11.0: G.P.O. chimes. Close down.

MID-DAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
- 12.2: The National Broadcasting Orchestra.

INDEX

To Local Programmes

FRIDAY, OCTOBER 18.

2FC, 2BL	32
2GB, 2UW, 2KY, 2UE	33

SATURDAY, OCTOBER 19.

2FC, 2BL 2GB, 2UW, 2KY, 2UE	36
-----------------------------------	----

SUNDAY, OCTOBER 20.

2FC, 2BL 2GB, 2UW, 2UE	40
------------------------------	----

MONDAY, OCTOBER 21.

2FC, 2BL	44
2GB, 2UW, 2KY, 2UE	45

TUESDAY, OCTOBER 22.

2FC, 2BL	48
2GB, 2UW, 2KY, 2UE	49

WEDNESDAY, OCTOBER 23.

2FC, 2BL 2GB, 2UW, 2UE	52
2KY	58

THURSDAY, OCTOBER 24.

2FC, 2BL 2GB, 2UW, 2UE	56
2KY	58

To Interstate Programmes

FRIDAY, OCTOBER 18.

3LO, 3AR, 3DB, 4QG, 5CL, 6WF, 7ZL	34
---	----

SATURDAY, OCTOBER 19.

3LO, 3AR, 3DB, 4QG, 5CL, 6WF	38
7ZL	42

SUNDAY, OCTOBER 20.

3LO, 3AR, 4QG, 5CL, 6WF	42
-------------------------------	----

MONDAY, OCTOBER 21.

3LO, 3AR, 4QG, 5CL, 6WF	46
-------------------------------	----

TUESDAY, OCTOBER 22.

3LO, 3AR, 4QG, 5CL	60
6WF	68

WEDNESDAY, OCTOBER 23.

3LO, 3AR, 4QG, 5CL, 6WF	54
-------------------------------	----

THURSDAY, OCTOBER 24.

3LO, 3AR, 4QG, 5CL, 6WF	58
-------------------------------	----

1.0: Afternoon news from "The Evening News."

- 1.5: Studio music.
- 1.18: Austradio musical reproduction.
- 2.0: J. Knight Barnett at the Wurlitzer.
- 2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

2.30: 2BL Instrumental Trio.

- 2.42: Marjorie Pride, in popular ballads—
(a) "Happy Songs" (Del Riego),
(b) "I Pass your Garden Singing" (Wynne).

2.49: 2BL Instrumental Trio.

- 3.0: Frank Leonard, entertainer—
(a) "The Rich Man Rides By" (Weston-Lee).

3.7: 2BL Instrumental Trio.

- 3.17: Eva Newbury, contralto—
(a) "From the Land of Sky Blue Water" (Cadamian).

(b) "When the House is Asleep" (Haigh).

3.24: 2BL Instrumental Trio.

- 3.34: Marjorie Pride in popular ballads—
(a) "Pale Moon" (Logan),
(b) "Homing" (Del Riego).

3.41: Frank Leonard, entertainer—
(a) "I'm Afraid of Love" (Seyler),
(b) "International Homes" (Weston-Lee).

3.48: 2BL Instrumental Trio.

- 4.0: Eva Newbury, contralto—
(a) "Fairy Roses" (Taylor),
(b) "Fat 'lil Feller" (Gordon).

4.7: 2BL Instrumental Trio.

4.17: Austradio musical reproduction.

5.0: Complete sporting and racing resume.

5.15: Close down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15: The Dinner music session.

- 6.45: The "Younger Set" session: The captain to his comrades.

7.5: The A.B.C. sporting resume.

7.17: Austradio musical reproduction.

7.55: What's on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 12.

The programme to-night is, as usual, on popular lines. Between 8 and 9 a bright entertainment has been arranged by the Sydney Operatic Society. There will be exciting descriptions from the Speedway Royal

and a humorous presentation by Sibley and Sayles. Through 2FC, perhaps the most unique programme in radio is being offered—"A Night on Sydney Harbor." Have you ever been for a moonlight excursion "on the air"? Then come with 2FC on Saturday, the 19th!

- 8.0: The Sydney Operatic Society—
(a) "Opening Chorus."
(b) "Click Clack" (Scott Gatty).
(c) "Waters of Minotona" (Laurence).
(d) "The World went very well then" (Spurr).
(e) "Venetian Song" (Tosti).
(f) "De Old Banjo" (Scott Gatty).
(g) "Meanderings of Monty" (Hay).
(h) "Seregent Major on Parade" (Godard).
(i) "Regular Royal Queen" (Sullivan).
(j) "Hawaiian Melodies."
(k) "My World" (Jordan).
(l) Recitation.
(m) "Eight Bells."
(n) "Sea Chanties" (Scott Gatty).
(o) "Serenade" (Gounards).
(p) "Monologue."
(q) "Old Time Choruses."
(r) Nursery Rhymes (Talbot).
(s) Finale.

9.0: From the Speedway Royal: Description of the races.

9.15: From the studio: 2BL Instrumental Trio—

- (a) "Canzone d'Amere" (Lowitz).
(b) "An Old Adobe" (Schertzinger).

9.23: Sibley and Sayles, entertainers—
"The Two Sad Sunbeams" present "A Hotch-Potch of Humorous Hokum."

9.31: Weather information for the man on the land.

9.33: 2BL Instrumental Trio—
"Princess Charming" (arr. Higgs).

9.43: Sibley and Sayles, entertainers—
(a) "The Two Sad Sunbeams" present "A Further Hotch-Potch of Humorous Hokum."

- (b) Song number, "Like the Big Pots Do."

9.50: From the Speedway Royal: Description of the races.

10.10: 2BL Instrumental Trio—
(a) "The Girls of Gottenburg" (Monckton).

- (b) "Canzon di Maggio" (Michilli).

10.25: Late news from "The Evening News." Late weather report.

10.30: From the ballroom of the Oriental, Sydney Simpson's Syncopaters in dance music.

12.0: "National Anthem." Close.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

3.0: Musical session.

5.15: Children's session by Uncle George.

7.0: Request hour.

8.0: Dance music.

10.30: Close down.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 267 Metres).

5.30: Children's Hour, conducted by Uncle Jack.

6.30: Close.

7.0: Musical programme and request numbers.

10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

CHILDREN'S SESSION.—6.0: Birthday calls, request numbers, and kiddies' entertainment. Aunt Jemima and Uncle Bert.

EVENING SESSION.—7.0: Musical interlude.

7.5: Birthday calls.

7.15: Sporting feature: turf topics; how they ran to-day.

7.50: Request numbers.

10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

7.15: Breakfast time hour orchestral music.

8.0: Chimes.

8.30: Close.

EVENING SESSION.

7.15: Orchestral dinner music.

7.59: Programme announcements.

8.0: Chimes.

8.1: Overture, "Maritana."

8.11: Orchestral and vocal items.

10.30: Close.



The Safety Valves of A.C. Radio

WHEN you buy RADIOTRONS you buy with safety . . . buy with the knowledge that they are the accepted standard valves for A.C. Radio . . . that they were the first A.C. Valves to be made, and that they are used and recommended by the world's leading manufacturers of Radio Sets. Such well-known sets as Stromberg Carlson, Atwater Kent, Majestic, Crossley, Radiola, King Quality, Fada, are all designed for use with Radiotron Valves. They are tested and initially equipped with Radiotrons, and the makers specify Radiotrons for replacement.

Radiotrons are, therefore, the real safety valves for your set.

Obtainable at all good Radio Dealers.

AUSTRALIAN GENERAL ELECTRIC
Australian General Electric Company Ltd.
93-95 CLARENCE STREET, SYDNEY.

53 King Street, Civic Centre, 821 Dean Street, Keen Street,
NEWCASTLE CANBERRA ALBURY LISMORE

A.C. RADIOTRONS.

RADIOTRON UX227

is a General purpose Valve, which permits A.C. operation. It acts as Detector, Radio, or first stage Audio Frequency Amplifier.

RADIOTRON UX280

is a half valve Rectifying Valve for use in all-electric Sets operating from Alternating current.

RADIOTRON UX281

is a half wave Rectifying Valve. Full wave rectification is accomplished by using two of these Radiotrons.

A.C. RADIOTRONS.

RADIOTRON UX226

is an Amplifier Valve, and can be used for Radio or Transformer coupled Audio Frequency Amplification. Not suited for Detection.

RADIOTRON UX171A

is a Power Amplifier Valve, designed to supply large undistorted volume. It is intended for use in the last stage of Audio Frequency Amplification.

RADIOTRONS UX250-UX245

Super Power Valves for supplying exceptionally large undistorted volume. Use only in last stage of an Audio Frequency Amplifier.

RCA ~ Radiotron

Interstate Programmes, Saturday, October 19

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

7.0 to 8.15: See Friday.

MORNING SESSION.

10.30 to 12.30: See Friday.

MIDDAY SESSION.

1.00: Time. 1.1: Stock Exchange; weather, etc. 1.15: Comments on the day's news. 1.27: Description of Oby Hurdle, 2 miles 1 fur. 65 yards. V.A.T.C. races at Caulfield, by Eric Welch.

AFTERNOON SESSION.

2.0: St. Vincent de Paul's Band (Conductor, Les Hoffman)—Suite, "A Rustic Holiday"; No. 1, "In the Cornfields"; No. 2, "Thro' the Meadows"; No. 3, "By the Old Church." 2.10: Freda Northcote, contralto—"Lament of Isis" (Bantock); "My Little Garden World" (Carroll). 2.17: Gordon Ireland, "The Apostle of Peace"; Entrée—"The piano"; St. Vincent de Paul's Band—Serenade, "Anita." 2.20: Description of Owyn Henry, five furlongs. V.A.T.C. races at Caulfield. 2.35: Ernest Wilson, baritone, and Freda Northcote, contralto—Duet, "Garden of Happiness" (Wood). 2.38: Headley and Bartlett—Musical Novelties. 2.45: Ernest Wilson, baritone—"Pagan" (Lohr). 2.52: St. Vincent de Paul's Band—Entrée: "Evening Bells" (Rimmer); Fox-trot, "When Springtime Comes" (Hoffman). 3.0: Time signal; sporting results. 3.3: Description of Vjuna Steeplechase, 2m. 3t. V.A.T.C. races, at Caulfield. 3.10: Ernest Wilson, baritone, and Freda Northcote, contralto—"Verdian Song"; "Tostie." 3.14: Description by Mel Morris of the finish of the Grand Prix Cycling Race at the Exhibition Building, Melbourne. 3.40: Description by Eric Welch of the Caulfield Cup, 1½ miles. V.A.T.C. races, at Caulfield. 4.0: Time signal; sporting results. 4.3: Headley and Bartlett—Instrumental novelties. 4.10: Gordon Ireland. 4.17: St. Vincent de Paul's Band—"Gems of Harmony" (Rimmer), Cornet solo, selected. 4.28: Description of Burwood Handicap, nine furlongs. V.A.T.C. races, at Caulfield. 4.35: Close down.

EARLY EVENING SESSION.

5.0: Time signal; sporting results. 5.8: Description of Windsor Handicap, six furlongs. V.A.T.C. races, at Caulfield. 5.15: Sporting results, continued. 5.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Little Miss Kookaburra" will tell the Tiny Kookaburrites about "Toddlers and the Baa-lamb." There will also be further entertainment of "The Guides at Calamity Hill." And then the birthday greetings from "Little Miss Kookaburra." 6.20: Stamp collecting—Mr. G. R. Franklin.

EVENING SESSION.

6.40: Sporting results. 6.55: Musical Interlude, 7.0: Melbourne Observatory time signal. 7.1: Countryman's Session—Stock Exchange report; Corn Exchange report; Associated Stock and Station Agents' official report; Wool Exchange report; mines and metals; fish and rabbit prices; farm and dairy produce report, supplied by the Inter-State Dairy Produce Committee; wholesale fruit prices, supplied by the Wholesale Fruit Merchants' Association; retail fruit prices, supplied by the Victorian Growers' Association; citrus fruit prices, supplied by the Victorian Central Citrus Association; weather synopses; river reports; rainfall. 7.25: Stories of our Mining Fields—Mr. Mundell. 7.40: The "Herald" news service. 7.45: Come with Us Round the World—Two Thousand Miles by Dog Team. Mr. W. J. G. Esmonde. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

SATURDAY NIGHT VARIETY.

8.0: Brunswick City Band (Conductor, Hugh Niven)—Overture, "The Barber of Seville" (Rossini).

8.8: J. Howard King, bass-baritone—"In Sheltered Vale" (D'Alequin), "To-morrow" (Keel).

DRAMATIC INTERLUDE.

8.15: A Dramatic Interlude, "Orensal Green" (from the Grand Guignol Series), played in London by Sybil Thorndike, produced by J. Beresford Fowler. Cast: Lorna Latchmere, Thora Coxhead; Chelot Chase, Douglas Caddy, Anthony Moore, J. Beresford Fowler.

8.30: Brunswick City Band—Selection, "Bobby Burns" (Hume).

8.38: Molle Mackay, Soprano—"The Rose and the Musk" (Jalowicz), Selected.

8.45: A special programme has been arranged. 9.50: National Broadcasting Orchestra—"Dance of the Hours" (Ponchielli).

10.0: Half an hour in a Maori Pah.

NEWS SESSION.

10.30: British official wireless news; items of information; meteorological information; sporting results.

FROM GRAVE TO GAY.

10.40: Brunswick City Band—"The Miserere," from "Il Trovatore" (Verdi).

10.50: Molly Mackay, Soprano—"Before the Crucifixion" (La Forze); "Love and Sleep," with viola obligato by Dorothy Roxburgh (Samoghi).

10.57: Brunswick City Band—Cornet solo, "Ora pro Nobis."

11.0: The A.B.C. String Quartette—Movement from Sonata (Handel).

11.10: J. Howard King, Bass-baritone—"Tom Browne" (Aubrey); "Five Eyes" (Armstrong Gibbs).

11.17: National Broadcasting Orchestra—Selection, "The Chocolate Soldier" (Strauss).

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION.

8.15 to 11: See Friday.

MIDDAY SESSION.

12.0: Chimes. 12.1: Syncopated music. 12.30: Luncheon Music. 2.0: Chimes. 2.1: The Idylls of the King—Orpheus and Lynette, Rec'd. W. Bottomley. 2.15: Musical Interlude—2.20: Projects of the Jungle—Mr. A. D. Downs. 2.35: Musical Interlude. 2.40: Personal Adventures While Exploring—Lt. Col. Eldred Pottinger, D.S.O., F.R.O.S. 2.55: Musical Interlude. 3.0: G.P.O. chimes.

THE RADIO MATINEE.

3.1: Paul Jeacle and his Band—"Medley Waltz" (Jeacle), "Stockholm Stomps" (Petts). 3.6: John Donovan, baritone—"Isobel" (Bridge), "At Greenwich Fair" (Marie). 3.13: Charles Short—Violin solo, selected. 3.18: Mae Seaton, soubrette—"Out of the Dawn" (Donaldson). 3.19: "It's a Bamboo Garden" (Donaldson). 3.24: Paul Jeacle and his Band—"Brain Storm" (Sanders) Popular Melodies. 3.30: Violet Jackson, soprano—"Fiddle and I" (Weatherley), "Fairings" (Martin). 3.37: Paul Jeacle—Saxophone selected. 3.40: John D. Sullivan, tenor, and John Donovan, baritone—Duet, "The Moon Hath Raised My Lamp Above." 3.45: "In This Solitary Hour" (Brown). 3.52: Paul Jeacle and his Band—"Broadway Melody" (Brown). 3.55: "You Were Meant for Me" (Brown). 3.58: One-act play, "Wealth and Wisdom" (Oiphant Downs), (produced by Winifred Moyerly). Characters: Peggy Keenan (owner of a small dairy farm), Winifred Moyerly; Jim Wyman (a young Englishman), J. Alexander Browne. Scene: A small dairy in a small Irish village. Time: The present. 4.8: Paul Jeacle, G. Bodley, and C. Jeacle—Saxophone Trio, selected. 4.12: John D. Sullivan, tenor—"Avucchella" (Tosti). "Dear Love, Remember Me" (Marshall). 4.19: W. Sheehan—Trumpet solo, "Sweet Surprise" (Lindley). 4.22: Mae Seaton, soubrette—"Jeaninne" (Oliver) and Wilkrecht ("Where the Shy Little Violets Grow"). 4.28: Paul Jeacle and his Band—Popular melodies. 4.34: Violet Jackson, soprano—"Strawberries" (Oliver), "Down Vauxhall Way" (Oliver). 4.42: Claude Jeacle—"Love Sings a Song in My Heart" (Chernavsky). 4.47: Bruce White, piano—"Nickel in the Slot" (Confrey). 4.52: Edouard Lambert, violin—(Oliver). 5.0: G.P.O. chimes. 5.1: Musical reproduction. 5.30: Weather. 5.35: Musical reproduction. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music supplied by the Studio Light Orchestra. 7.30: What's on the Air To-night? 7.32: Sporting results. 7.40: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION.

8.1: National Broadcasting Orchestra—Overture, "Oberon" (Weber). 8.10: Mary Mack, contralto—"June Music" (Trent). "Flutes of Arendy" (Head). 8.17: Edouard Lambert, violin—"Cavatina" (Raff), "Gavotte" (Gosset).

8.25: One-act Play—"The Camberley Triangle" (A. A. Milne). (Produced by Terence Crisp). Characters: Kate Camberley, Ruby May; Cyril Norwood, Eric Donald; Dennis Camberley, Terence Crisp. It is an evening of 1919, in Kit's drawing-room.

8.45: National Broadcasting Orchestra—"Les Preludes" (Liszt).

8.55: Mary Mack, contralto—"The Leaves and the Wind" (Leigh); "Life's Epitome" (Rae).

9.0: Joe Barrille—Flute Solo.

9.5: J. Howard King, bass-baritone—"Myself When Young" (Lehmann). "Three" (Aylward).

9.13: National Broadcasting Orchestra—"Two Sketches" (Frommel), "In An Old Fashioned Town" (Squire).

9.20: Charles O'Mara, Irish entertainer—Song, "Bally Hooley"; Monologue, "The Devil's Trip."

9.27: Betty Brown, cello—"Simple Aveu" (Thome).

9.34: National Broadcasting Orchestra—Selections from the Musical Comedy, "Katinka" (Frilm).

9.44: J. Howard King, bass-baritone—"The Curfew" (Gould), "Requiem" (Homer).

9.51: J. Geary, trumpet—"Come, Sing To Me" (Thome).

9.55: Pat McLean—Child impersonations.

10.2: Weather information and "Herald" news.

10.12: Mabel Nelson, piano—"Seguidillas" (Albeniz).

10.18: Charles O'Mara, Irish entertainer—Song, "Bally Mooney's Conversazione." Irish stories.

10.25: Pat McLean—Will entertain with her ukulele.

10.30: "Mao and Tosh," Scottish entertainers— "Nancy Lee."

10.45: Rex Dance Band.

12.0: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (355 Metres).

AFTERNOON SESSION.

2.0: Grenadier Guards Band, "Old Panama." 2.30: Aileen Starley, "You Wanted Someone." 3.0: A. Robert Poole, "Here Is the Quiet Hill." 3.30: Zez Confrey and his Orchestra, "Jack in the Box." 3.45: Layton and Johnstone, "Was it a Dream?" 4.30: Red Nichols and his Orchestra, "Five Pennies." 5.0: Sponsored Session. (During the afternoon progress reports and results of all sporting events will be given.)

EARLY EVENING SESSION.

6.0: Jean Leusen and his Orchestra, "Vivelle Chanson Espagnole." 6.30: Sporting news. 6.45: Dolcina Giannini, "Madre Pletora." 7.0: Denza Dance Band, "I Love You Truly." 7.50: Harold Bauer, "In the Night."

EVENING SESSION.

8.0: Sponsored programme—Victorian Professional Orchestral Concert transmitted from Auditorium. 9.0: Debroy Somers Band, "Laughing Marjorie." 9.30: Ignace Paderewski, "Minuet." 10.0: Jack Lumdsdale, "You're a Real Sweetheart." 10.30: Salesbury Singers, "When for the World's Repose." 10.40: News. 11.0: Close down.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

EARLY MORNING SESSION

7.30: News. 8.0: Records. 8.15: News. 8.30: Close down.

MORNING SESSION.

11.0: The complete morning service will be relayed from the Seventh Day Adventist Church at Buranda. 12.0 noon: Close down.

AFTERNOON SESSION.

3.0: Records. 3.30: Mail running times. 3.31: More records. 4.15: News. 4.30: Close down.

EARLY EVENING SESSION.

6.10: News. 6.30: Bedtime stories, conducted by "Uncle Ben." To-day's sporting news. 7.0: To-day's races in detail. 7.20: General sporting notes. 7.30: Sailing notes by Mr. Fred Smith.

NIGHT SESSION.

A classic programme under the conductorship of Mr. George Sampson, F.R.C.O.

8.0: From the Studio—St. John's Cathedral Choir—"Hear My Prayer" (Mendelssohn). Mary Jefferies, cellist, Andante from "Andante" (Grieg). A thought for today (Will H. Lister). "Butterflies" Instrumental Trio—Vada Jefferies (Violin), Mary Jefferies (cello), Adeline Colledge (piano)—"Andante and Variations" (Tschaikowsky). Beatrice Pugh (soprano)—"Caro Nome" (from "Rigoletto"—Verdi). Vada Jefferies (violiniste)—"Andante" (Sgambati). St. John's Cathedral Choir—"The Wilderness." Eric Hayne (violin), Archie Day (piano)—"1st Movement" (Beethoven). B. and M. Major (Mazurka). Beatrice Pugh (soprano), Fred Homer (baritone)—"Open Thy Blue Eyes" (Massenet). "Go Not Happy Day" (Somerville). Eric Hayne (violinist)—"La Capricciosa" (Relis). Adeline Colledge and Archie Day (pianists)—"Duet for two pianos, "Valse" (Rachmaninoff).

10.30: Weather; close down.

Note: At a suitable time during the evening, the final of the trophy race from the Davies Park Speedway will be broadcast.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION.

12.0: Chimes. 12.1: Late selections for Caulfield. 12.3: Probable starters and selections for races at Gawler. 12.15: News. 12.35: Gawler—Riders and positions for Handicap, seven and a half furlongs. 12.50: Gawler—Running description of Handicap by Mr. Arnold Treloar. 1.0: Caulfield race result. 1.15: Gawler—Riders and positions for Third Class Plate, about seven and a half furlongs. 1.30: Gawler—Running description of Third Class Plate. 2.55: Gawler—Riders and positions for Barossa Hurdle Race, about two miles and twenty yards. 2.0: Caulfield race result. 2.10: Gawler—Running description of Barossa Hurdle Race. 2.35: Gawler—Riders and positions for Spring Handicap, one mile and a quarter. 2.50: Gawler—Running description of Spring Handicap. 3.0: Caulfield race result. 3.15: Gawler—Riders and positions for Second Class Plate, about seven and a half furlongs. 3.30: Gawler—Running description of Second Class Plate. 3.55: Gawler—Riders and positions for Jumpers' Flat Race, one mile and three furlongs. 4.0: Caulfield race result. 4.10: Gawler—Running description of Jumpers' Flat race. 4.35: Gawler—Riders and positions for First Class Plate. 5.0: Results of Caulfield race results; resume of Gawler race results; dividend on First Class Plate. 5.5: Close down.

EVENING SESSION.

6.0: Chimes. 6.1: Children's Happy Moments. 6.15: Request numbers. 6.30: Dinner session. 7.0: Chimes. 7.1: Senior Birthday League greetings. 7.10: Rev. G. E. Hale, B.A., will speak on "Can We Get Something for Nothing?" 7.24: Mr. C. G. Riley will speak on "Items of Interest." 7.40: 5CL's sporting service, including Caulfield and Gawler race results; country sporting; and other sporting results.

NIGHT SESSION

8.0: Chimes. 8.10: A special programme has been arranged. 10.20: 5CL's sporting service, including Caulfield and Gawler race results; country sporting; and other sporting results.

10.30: Modern dance recordings.

11.0: Close down.

(6WF and 7ZL continued on page 42.)

EMMCO'S BIG 8

SUPER STRAT CONDENSER

Highly efficient Condenser for base or panel mounting.
PRICE .0005 12/6
 .00025 and .00035 .. 12/-



VELMO VERNIER DIAL

High-grade Vernier Dial, at a most reasonable price.
PRICE 6/-
 BABY VELMO 5/-



PURATONE TRANSFORMER

Wonderful Value, maximum volume, no distortion.
PRICE 15/6



TRICKLE CHARGER

New Type Charger. Dry Plate system. Guaranteed 5000 hours.
PRICE £3/10/-

ALL FULLY GUARANTEED

A SET IS ONLY as good as its component parts allow.

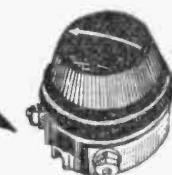
Therefore, the basis of perfect reception is only formed with the adaptation of really high-grade parts.

Emmco's Radio Products are embodied in a most comprehensive range of some 200 parts, which are positively unsurpassed by any imported make; each and every part is covered by the usual Emmco Guarantee.

Remember the basis of perfect reception—Emmco Radio Parts.

BAKELITE RHEOSTAT

New Bakelite Rheo. 6, 10, 20, and 30 ohms.
PRICE 4/6
 Potentiometer, 400 ohms.
PRICE 5/6



EMMCO HEADPHONES

Splendid quality Headphones, spring headband easily adjusted, comfortable to wear.
PRICE 21/-



MAXUM B. ELIMINATOR

Maxum "B" Socket Power, an improved "B" Eliminator.
PRICE £8/15/-



A-SOCKET POWER SUPPLY

"A" Socket Power Supply. Eliminates the "A" Battery.
PRICE £12/12/-

Made By Electricity Meter Mfg. Co. Ltd.

Sole Factory Representatives:

Manufacturers Products Pty. Ltd.

Sydney. 137 Clarence St., 'Phone BW1328

Melbourne. Sugden Place, 'Phone F2355

Local Programmes, Sun., Oct. 20

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 451 Metres).

THE CHURCH HOUR—10 a.m. to 12.30 p.m.

10.0: Announcements.

10.5: Studio music.

10.30: This morning's news, "Sunday News," "Sunday Times," "Truth," and British official wireless press.

10.45: Musical items.

11.0: From St. John's Church of England, Balmain—morning service, conducted by Rev. A. G. Rix. Organist and choirmaster, Herbert Sheppard.

Organ voluntary—"Berceuse" (Faukes).

Hymn—A. and M. 273.

Exhortation, Confession, and Absolution.

Responses (Tallis).

Venite and Psalm.

First Lesson.

Te Deum—(Mauder, in B Flat).

Second Lesson.

Benedictus, Chanted (Troutbeck).

Creed, Responses, and Prayers.

Anthem—"Send Out Thy Light" (Gounod).

Prayers.

Hymn—A. and M. 304.

Sermon—"Is Sydney Pagan or Christian?"—Rev. A. G. Rix.

Contralto solo—Annie Payne—"Love Not the World" (Sullivan).

Hymn—A. and M. 228.

12.15: Studio music.

12.30: Close.

AFTERNOON CONCERT—3 to 4.30 p.m.

3.0: From the North Shore Bridge, now under construction, description of this vast undertaking will be given by Dr. Bradfield and Messrs. Norman Lyons and C. R. Hall. Microphones have been installed at various points, through which the description will be given, and listeners will have an opportunity of hearing many details which have not previously been made known in regard to this great national undertaking.

4.0: Australadio musical reproduction.

4.30: Close.

EVENING PROGRAMME—6 to 10.30 p.m.

6.0: Maynard Wilkinson, organ solos—

(a) "The Swan" (St. Saens).

(b) "Humoresque" (Dvorak).

(c) "Serenade" (Schubert).

6.10: Peggy Dunbar, contralto—

(a) "He Shall Feed His Flock" (Handel).

(b) "He Was Despised" (Handel).

6.17—Maynard Wilkinson, organ solos—

(a) "Berceuse de Jocelyn" (Godard).

(b) "Barcarolle" (Bath).

6.24: Peggy Dunbar, contralto—

(a) "Had You But Known" (Denza).

(b) "O, Lovely Night" (Ronald).

6.31: Maynard Wilkinson, organ solos—

(a) "Peace and Happiness" (Goodhart).

(b) "Piece Heroique" (Cesar Franck).

6.40: The Hon. D. R. Hall will speak on "Prisons and Prisoners."

7.0: An hour of Jewish music—

Synagogue composition—"Father of Mercies."

Folk Song—"When the Rabbi Walks."

"When the Messiah Comes."

Synagogue composition—"The Song of Moses."

Folk Song—"The Cobbler."

Folk Song—"A Ditty."

Folk Song—"The Truant." Solo by Bernard Lassen.

Folk Song—"A Cantor for the Sabbath."

Solo by Bernard Lassen.

Folk Song—"The Rabbi Crossed the Sea."

Folk Song—"The Cottage in the Village." Solo by Betty Vinograd.

Folk Song—"What a Pretty Girl I Am."

Solo by Betty Vinograd.

Folk Song—"Deep in the Forest."

Folk Song—"I Sit Down and Cry." Solo by Beth Sampson.

Folk Song—"Listen." Solo by Beth Sampson.

Folk Song—"Rabbi David."

Folk Song—"Let's Be Happy."

Synagogue composition—"By the Waters of Babylon."

Folk Song—"Long May He Live."

8.0: A studio concert programme, arranged by Albert Cazabon, musical director of the Prince Edward Theatre.

10.0: Meditation music.

10.30: National Anthem. Close.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 333 Metres).

MIDDAY SESSION—10.55 to 3 p.m.

10.55: Announcements.

11.0: From Chalmers Street Presbyterian Church: Morning Service, conducted by Rev. D. F. Brandt.

12.15: From the Studio—Musical items.

12.30: News from the "Sunday News," "Sunday Times," and "Truth."

12.38: A specially arranged programme of instrumental music.

2.15: Cheer-up Session, conducted by Uncle Frank.

2.30: Australadio musical reproduction.

3.0: Close down.

LATE AFTERNOON—4.30 to 6 p.m.

4.30: A Celebrity Recital arranged by Madame Evelyn Grieg: "Schubert's Unfinished Symphony."

5.0: C. N. Baeyertz continues his series on "Greek Philosophy."

5.20: Continuation of musical programme by Madame Evelyn Grieg.

EVENING SESSION—6 p.m. to 10 p.m.

6.0: For Children in Hospital—conducted by Uncle Steve and Aunt Goodie.

6.50: Organ recital.

7.0: From the Lyceum.

8.30: The First Broadcast Appearance of the young Sydney pianist, Allen McCristal—

(a) "Andante with Variations" (Haydn).

(b) "The Prophet Bird" (Schumann).

8.42: Vocal Quartette arranged by G. Vern Barnett—

Song Cycle, "Wind Flowers."

9.5: Peter Sutherland, basso—

(a) "The Lord is My Light" (Allitsen).

(b) "Down Here" (Brahe).

9.12: Ernest Long, violinist—"Caprice" (Kreisler).

9.19: Vocal Quartette arranged by G. Vern Barnett—

Song Cycle, "Flora's Holiday."

9.43: Allen McCristal, pianist—

(a) "Romance in F Sharp" (Schumann).

(b) "Sileuses" (Barton).

9.54: Ernest Long, violinist—

"Variations" (Kreisler).

10.0: Close. National Anthem.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

9.0: Address by Miss Mary Rivett—"The Crock of Gold." 9.30: Address by Mr. Victor E. Cromer—"The Spanish Mystics." 10.0: Music from Studio. 10.15: Organ music from St. Alban's Church, Regent Street, Sydney.

10.30: Morning service from St. Alban's Church. 12 noon: Music from Studio. 12.30: Close down. 3.0: Musical session, 5.30: Children's session by Uncle George. 7.0: Address from St. Alban's Church. 7.35: Address from Adyar House. 8.15: Sacred concert. 9.45: Close down.

2UW

Radio Broadcasting, Ltd., Faling's Building, Ash St., Sydney (Wavelength, 267 Metres).

10.30: Music and request items. 1.0: Close.

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Musical programme.

10.30: Close.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

MORNING SESSION.

9.40: Mass from St. Michael's Church, Daceyville. 10.30: Orchestral and vocal music.

12.30: Studio announcements. Close down.

EVENING SESSION.

6.0: Music from Catholic studio. 6.5: Rev. Father T. Walsh, S.J., conducting session of instruction. 6.30: Music. 6.40: "Question Box" talks by Dr. L. Rumble, M.S.C. 7.45:

Evening devotions from St. Michael's Church, Daceyville. 8.15: Music. 8.20: Overture.

"Dance of the Hours." 8.31: Vocal and instrumental concert. 10.15: National Anthem.

FORMO
ARTHUR PRENT & CO LTD

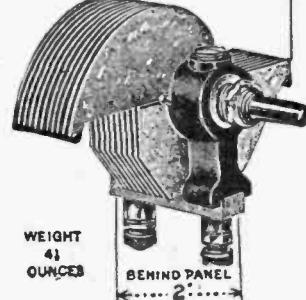
BRITISH MADE
VARIABLE

CONDENSER

IS THE SMALLEST, LIGHTEST, MOST
EFFICIENT Obtainable

SPAN FULLY OPEN

3 1/2"



THE PRICE IS RIGHT.

.0005—9/-; .00035—8/6;

.00025—8/-.



COMBINATION L.F. UNITS

"TRUE SCALE" 45/- (Dual Impedance).

"TWO STAGE" 52/6 (Resistance-Transformer).

"TRANSFORMER" Output Filter CHOKE" .. 45/-

ASK YOUR DEALER FOR
CATALOGUE.

DISTRIBUTORS

for New South Wales,

O. H. O'BRIEN,

37-39 Pitt Street;

MURDOCH'S, LTD.,

Park Street;

ELECTRIC UTILITY

SUPPLY CO.,

617 George Street

Factory Representative

WHITELAW AND WOOD

PTY., LTD.,

CATHCART HOUSE,

11c Castlereagh St., Sydney

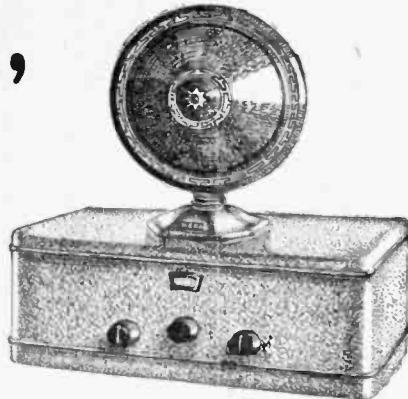
312 Flinders St., MELBOURNE.

GRACE BROS

"TOWER 3"

Self-Contained Battery Receiver

New, compact, battery-operated Receiver, with all accessories completely contained in Ducoed metal Cabinet. Simply controlled with a single tuning dial, it is warranted to receive all local stations at an excellent speaker strength. Ample volume is obtained with a new type cone speaker, whilst its faithful reproduction of both music and speech will delight even the most critical. It is fully equipped with Cone Speaker, genuine Mullard Valves, Oldham 4-volt Accumulator, "B" and "C" Batteries and Aerial Accessories. Ready for immediate use—Nothing further to buy.



PRICE
COMPLETE— £9'15'.

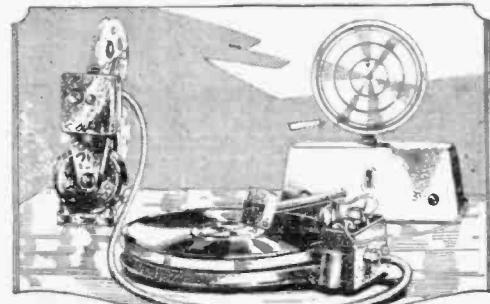
HOME - TALKIES

Attaches to any 16 mm. Projector.

PLAYS THROUGH ANY RADIO SET.

THE HOME TALKIE UNIT gives perfect synchronization of pictures and sound. It plays through the Amplifier of any good Radio Set, similar to a Phonograph Pick-up. It sings, plays, acts, and talks with a quality equal to the finest talking pictures shown in the theatre. Simple, portable, easy to operate, a marvel of mechanical ingenuity, and a distinct social asset. A Diversified Group of Home Talkie Film Productions available. Come along and hear and see them for yourself.

Price of Unit only, Fitted £20



HOME-TALKIE UNIT SHOWN CONNECTED TO PROJECTOR AND RADIO SET.

RADIO COMPONENT SPECIALS

"Durola" Cone Speakers	23/6
Genuine Western Electric 4000 Ohm Head Sets. Pair	15/-
Genuine Siemens' 4000 Ohm Head Sets. Pr.	12/6
Bakelite UX Valve Sockets. Each	1/3
Radio Soldering Sets with Flux and Solder	1/3
"Calophos" 45-volt Tested "B" Batteries	9/6
"Gracevolt 45" Heavy Duty "B" Batteries	19/6
"Dutch" 9-volt Tested "C" Batteries	2/-
"Dutch" 90-volt Tested "B" Batteries	14/6

Peto & Radford 6-volt 40 A.H. Dagebite Batteries	60/-
Peto & Radford 2-volt 30 A.H. Celluloid Batteries	14/6
Peto & Radford 2-volt 40 A.H. Celluloid Batteries	17/6
Coloured Insulated Hook-up Wire, 10ft. coils	9d
Hoosick .0005 Low Loss Condensers	4/9
Switch Arms, highly polished knob. Each	3d
Contact Studs with Nuts. Doz.	2d

RADIO DEPARTMENT, BASEMENT, GEORGE ST. WEST BUILDING

BROADWAY **GRACE BROS LTD** SYDNEY

You'll Appreciate these BETTER Radio Components

If you are one who believes that only the best is good enough for your radio, you will follow the example of thousands of engineers and set builders by installing only ELECTRAD components of PROVED quality.

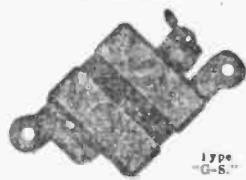
The "ELECTRAD" Rheostat.



THE resistance element is the finest material known. Its value is guaranteed within 5 per cent. High-grade Bakelite insulation. Metallic bearings. Oversized contact arm of phosphor bronze. Milled shaft with square hole in contact arm prevents shaft or knob from turning without moving contact arm.

Single or three-hole mounting. For three-hole mounting, the base is tapered, eliminating the use of nuts behind panel. Construction provides greatest radiation without loss of mechanical strength.

"ELECTRAD" Certified Mica Fixed Condensers.



SUBSTANTIALLY made of quality materials. Ingenious riveting and binding fastens parts securely at six different points and exerts even pressure upon the largest possible surface. Of scientific design ensuring perfect electrical contact always.

Type "G.S." with grid link clips for attaching direct to socket terminal.

Standard, Type "S." with soldering lug and binding strap in one piece.

Obtainable at all Radio Dealers

Amalgamated Wireless
A/asia, Ltd.,

47 York Street,
Sydney

SPECIFY!

175 Varick St., New York, N.Y.
ELECTRAD

Interstate Programmes, Sun., Oct. 20

3LO

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 371 Metres).

MORNING SESSION.

10.0: Time signal. 10.1: Musical reproduction. 10.20: Express train information. British official wireless news; items of interest. 10.30: Bells of St. Paul's Cathedral. 10.45: Recital of sacred music. 11.0: Morning service from Scots Church, Collins Street, Melbourne.

AFTERNOON SESSION.

3.0: Pleasant Sunday afternoon, from Wesley Church Central Mission, Lonsdale Street, Melbourne. 4.30: Close down.

CHILDREN'S CORNER.

5.45: "Brother Bill's" talk this week is called, "Get These Behind Me." Birthday greetings by "Billy Bunny" & St. Paul's Choir Boys—"The Flag Song," by Dr. A. E. Floyd, "Because" "Listen to the Voice of Jesus."

EVENING SESSION.

7.0: Edward Lambert, violin; Raymond Lambert, piano; "Sonata No. 1, Op. 12" (Mozart); for violin and piano. 7.20: Madame Lambert, soprano; "Air des Dragons de Villars" (Maillyard). Dramatic stories from the Bible. 7.27: J. Howlett Ross; "The Dream of Nebuchadnezzar." Piano recital. 7.42: Raymond Lambert—(a) "The Sea" (Palmgren); (b) "Hark, Hark, the Lark" (Schubert-Liszt), (c) "Nalla Valse" (Delibes), (d) "Liebertraum" (Liszt). 7.54: Madame Lambert, soprano—(a) "La chère maison" (Daloze), (b) "Le coeur de ma mie" (Dalcroze), (c) "Air de la coupe de Galathée" (Massé), (d) "Mimi Pinson" (Leoncavallo), (e) "The Flower Song," from "Faust" (Gaumont).

NIGHT SESSION.

8.0: Stan. Porter and His Orchestra, and company of vocal and instrumental artists. 10.15: Weather, etc. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 404 Metres).

MORNING SESSION.

11.0: Service from the Baptist Church, Collins Street, Melbourne. Sermon by Rev. W. D. Jackson, B.A., subject, "The White Feather Anthem, 'Awake, Thou That Slepest,'" Solo, "See Ye First the Kingdom of Heaven," Madame Ella Kingston.

MIDDAY SESSION.

12.30: A studio programme of specially selected reproduced music. 2.0: Arnold Coleman at the Wurlitzer, with assisting artists. 3.0: Close down.

AFTERNOON SESSION.

4.30: Symphony No. 3, "Erotica," in E flat, Op. 55, Sir Henry Wood, and the Queen's Hall Orchestra. 5.26: The work of the Australian Inland Mission; Dr. George Simpson. 5.41: "Flower Song" from "Carmen." "An Little Thought the Maid" (Thomas). Charles Bennett, 5.49: A traditional voluntary, brass and organ (Purcell). Solemn Melody, "cello and organ" (Sir Wilford Davies). 5.57: "Abide with Me" (Liddel). "God Shall Wipe Away all Tears" (Sullivan), Dame Clara Butt. 6.5: Piano recital, Walter Oleszinski. 6.20: A recital of request numbers. 6.45: What's on the air to-night? 6.47: St. Paul's Cathedral bells.

EVENING SESSION.

7.0: Service from Wesley Church, Melbourne. Sermon, Dr. F. W. Boreham, subject, "The real significance of dress."

NIGHT SESSION.

8.30: Transmission from Sydney, relayed from 2BL. The programme will feature two good song cycles. 9.58: Weather. 10.0: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

MORNING SESSION.

11.0: The complete morning service will be relayed from the Albert Street Methodist Church. 12.15: Close.

AFTERNOON SESSION

3.15: A programme by the Brisbane Citizens' Band. 4.30: Close down.

TRANSFORMERS

Power Pack Transformers.

"B" Eliminator Transformers.

Transformers Rewound and Repaired.

240-110 Volt Power Transformers, all sizes manufactured. Transformer Iron, cut to size, 1/8 lb.

F. T. S. O'Donnell Griffin & Co.
Limited

M2991. 51-53 Druitt Street, Sydney.

EARLY EVENING SESSION.

6.0: An hour for little listeners.

NIGHT SESSION.

7.0: The complete evening service will be relayed from Albert Street Methodist Church.

At the conclusion of the church service, the concert by the Brisbane Municipal Concert Band will be relayed from Wickham Park.

9.30: Close.

5CL

Central Broadcasters, Ltd., 111 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION.

10.45: Carillon of bells from Adelaide Town Hall. 11.0: Chimes. 11.1: Service from Parkside Baptist Church. Minister, Rev. B. E. C. Tuck; organist, Miss Gertrude Coudrey. 12.10: News. 12.15: Close.

AFTERNOON SESSION.

3.0: Chimes. 3.1: A pleasant Sunday afternoon service from Maughan Methodist Church. 4.0: Close.

EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings. 6.45: Church choir numbers. 7.0: Chimes. 7.1: Senior birthday League greetings. 7.2: Service from Bethan Lutheran Church. Minister, Rev. W. Roehrs; preacher, Rev. Director Loche; organist, Mr. Clem Geyer, A.M.U.A.

NIGHT SESSION.

8.0: Announcements. From Bethan Lutheran Church, sacred concert: organ recital by Mr. Clem Geyer, A.M.U.A.; vocal and instrumental numbers, and a short address. 9.55: News. 10.0: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

MORNING SESSION—10.40: Sporting resume. 10.50: News service. 11.0: Wesley Church service. 12.30: Reproduced music. 1.0: Close down.

AFTERNOON SESSION—3.0: Chimes. 3.1: Lecture on Christian Science, by the Hon. W. E. Brown, C.S.B. 4.15: Band items, broadcast from Government Gardens. 5.0: Close down.

EVENING SESSION—6.30: Children's Session, conducted by Mr. Charles Schwab, L.C.M. 7.0: Orchestral music (reproduced). 7.30: Church service, Trinity Congregational Church. 8.45: Special musicale, arranged by Bert Howell, broadcast from Ambassadors' Theatre, including Ambassadors' Orchestra, Les Waldron at the Console of the Grand Organ, and vocalists. 10.30: Close down.

Saturday, October 19

(Continued from page 38)

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

For morning session schedule see Friday.

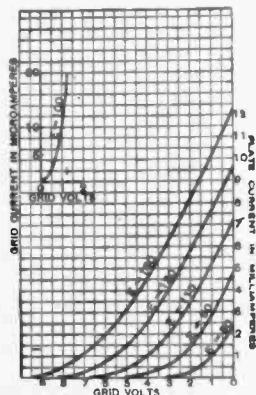
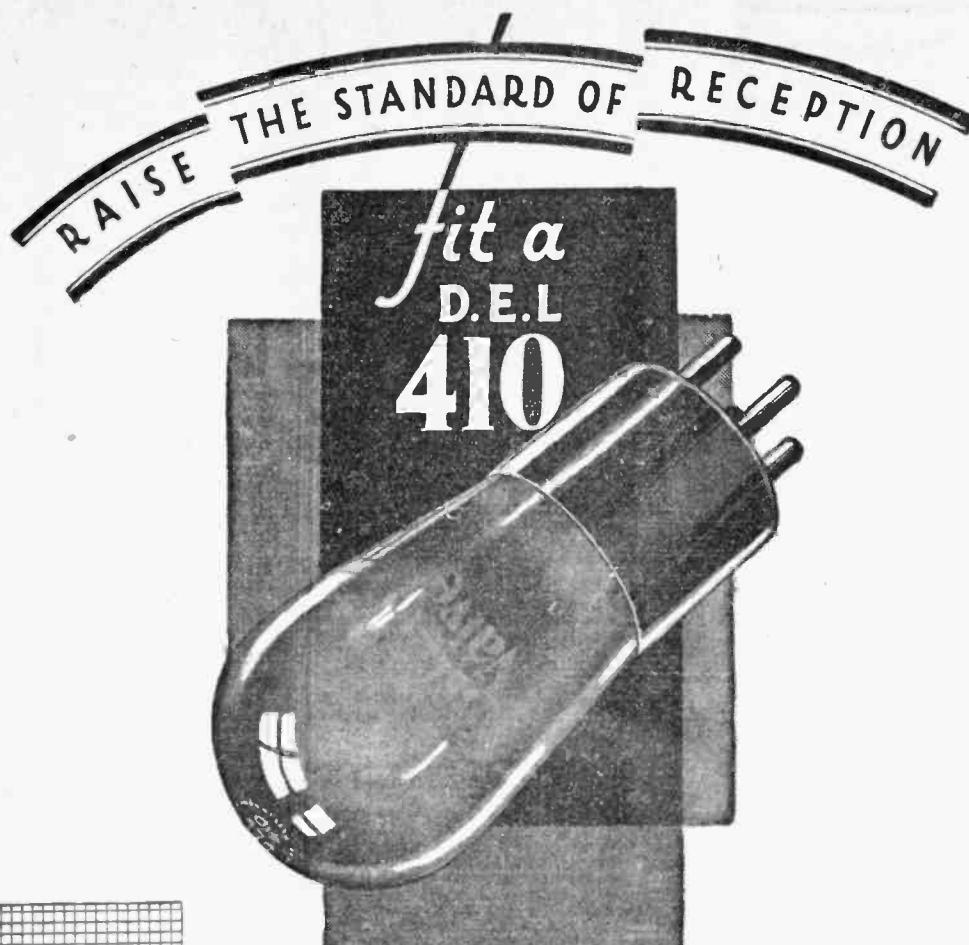
During the afternoon results and sporting information will be broadcast immediately received. 3.30: Chimes. 3.31: Music. 3.45: Sporting results and progress information. 4.0: Chimes. 4.1: Music. 4.55: Features of to-night's presentation. 5.0: Close. EARLY EVENING SESSION—6.45: Chimes. 5.46: Children's "Good-night" stories, by Uncle Bas. and Aunty Maxine. 6.0: Dinner music, by the National Broadcasting Orchestra. 7.30: Weather. 7.31: News. 7.35: Market reports. 7.40: Complete resume of today's racing, with results of all athletic fixtures. 7.48: The A.B.C. Sporting Observer's impression of today's game. 7.57: What's on the air to-night?

EVENING SESSION—During the evening trotting results will be broadcast immediately received. Spectral Dance Night—8.0: Harmony Girls. 9.0: Chimes. 9.1: Weather. 9.2: Harmony Girls. 10.0: Chimes. 10.1: Temple Court Dance Band, conducted by Merv. Lyons. 11.0: Chimes.

7ZL

Tasmanian Broadcasters Pty., Bursary Bldg., Elizabeth Street, Hobart (Wavelength, 316 Metres).

11.30: Selections. 11.34: Weather. 11.35: Selections. 11.36: Weather. 12.0: Chimes. 12.1: Shipping. 12.8: Selections. 12.30: News. 12.40: Selections. 1.5: British official wireless news; railway auction sales. 1.10: Selections. 1.30: Close down. 3.0: Chimes. 3.1: Selections. 4.50: All sporting results to hand. 5.0: Close down. 6.10: All sporting results. 6.30: Children's Corner, with "Uncle David." 7.10: Recorded music. 7.30: News session. 7.40: Roy Johnson will speak on "Mannix Training." 7.45: James Cagney will speak on "Europe's Affairs." 8.0: G.P.O. clock chimes the hour. 8.1: Selections. 8.15: Transmission from the R.S.S.I.L.A. Club, Macquarie Street, Hobart—Annual Smoke Social for Limbless Soldiers of Tasmania. 9.30: News—British official. 9.35: A request programme of popular records specially arranged by Patin's Music Warehouse. 10.20: Close down.



Filament Volts ... 4.0 max.
Current 0.1 amp.
Plate Volts ... 150 max.

Amplification Factor 15
Impedance ... 8,500 ohms.
Normal Slope ... 1.77 ma/volt.

Ask for it by number—
and say OSRAM
Made in England

Your "B" Batteries last longer,
when used with "Osram Valves."
Ask your dealer for the Osram
Valve Guide, free on request.

Osram Valve

Low Power Consumption

Here is a general purpose valve which consumes only one-tenth of an ampere. It is ideal for strong reception of weak signals and better reception of good ones.

Osram D.E.L. 410 is equally useful for R.F. amplification, sensitive detection, and first stage audio.

Put it in your set for better results.

BRITISH GENERAL ELECTRIC CO., LTD.

Head Office and Public Showrooms: 104-114 Clarence Street, Sydney.
Branches at Newcastle, Melbourne, Adelaide, Perth, Christchurch, Wellington, Auckland.
Sole Agents at Brisbane and Hobart.

Local Programmes, Monday, October 21

2FC

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 151 Metres).

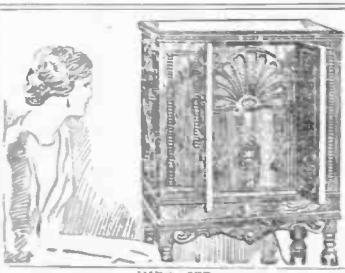
EARLY SESSION—7 to 8.15 a.m.
 7.0: "Big Ben" and meteorological information for the man on the land.
 7.3: This morning's news from the "Sydney Morning Herald."
 7.8: Austradio Musical Reproduction.
 7.45: Mails and shipping.
 7.48: What's on to-day?
 7.50: Children's Birthday Calls.
 8.0: Music from the Studio.
 8.15: Close.

MORNING SESSION—10.30 to 12.30 p.m.
 10.30: Announcements.
 10.32: A.B.C. Racing Observer.
 10.45: Price Dunlavy at the Grand Organ.
 11.0: Household Helps—Cooking, by Miss Ruth Furst.
 11.10: Cables (copyright)—"Sun"—"Herald" and A.P.A. News Service.
 11.15: Morning devotion.
 11.30: Austradio Musical Reproduction.
 11.53: British Official Wireless Press.
 12.0: "Big Ben": Stock Exchange and metal quotations.
 12.5: V. C. Bell will speak from "The Public Forum".

12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land supplied by the State Marketing Board.
 12.30: Close.

THE LUNCH HOUR—1 p.m. to 2.30 p.m.
 1.0: Lunch hour music.
 2.0: Stock Exchange, second call.
 2.2: A glance at the afternoon "Sun" and "News".

2.7: An afternoon story.
 2.27: Announcements.
THE RADIO MATINEE—2.30 to 4.30 p.m.
 2.30: The 2PC Instrumental Trio.
 2.42: Edith Allen Taylor, contralto—
 (a) "Thy Beaming Eyes" (MacDowell).
 (b) "Author of All My Joys" (Gluck).



FADA Radio

Built in Dynamic
Speakers—Push-pull Power
Amplifiers—Radio Phono-
graphic Combination.

All Electric Sets that leave nothing to be desired by lovers of Radio. Before buying any set call and listen to the full range of Fada models. Compare the Tone—Selectivity—Price—Quality.

7-8-9 VALVE RECEIVERS

Special Plugs for Using Gramophone Pickup.
OPEN FRIDAYS TILL 9 P.M.

Winkworth's

George Street (nearly opp. Martin Place).
SYDNEY: and at 160-161 Parramatta Rd.
ANNANDALE

- (c) "The Wild Rose" (Schubert).
 2.49: The 2PC Instrumental Trio.
 3.0: Educational session under the auspices of the Department of Public Instruction—A. G. Hamilton will speak on "Our Birds."
 3.10: R. G. Henderson, English Examiner—Birds of Poetry.
 3.20: H. F. Treherne, Supervisor of Music—Birds of Music.
 3.30: Fosse Brakell, contralto—
 (a) "With a Swan-like Beauty Gliding" (Mozart).
 (b) "The Violet" (Mozart).
 3.37: The 2PC Instrumental Trio.
 3.53: Edith Allen Taylor, contralto—
 (a) "She Wandered Down the Mountain Side" (Clay).
 (b) "Sleepy Hollow June" (Kountz).
 4.0: W. S. Bray will speak on "The Gay and Tender Goldsmith." 4.15: Fosse Brakell, contralto—
 (a) "Hands and Lips" (Clark).
 (b) "Butterfly" (Clark).
 (c) "Gentle Dame Priscilla" (Clark).
 4.22: The 2PC Instrumental Trio.
 4.28: Stock Exchange, third call.
 4.30: Close.
- EARLY EVENING SESSION—5.45 to 7.55 p.m.**
- 5.45: Kiddies "Goodnight" Stories told by the "Hello Man" assisted by Aunt Eily and Mary Stevens, who will sing "The Lilac Tree" (Tartian) and "The Wide Awake Sky" (Rowley).
 6.45: Dinner hour music.
 7.30: A.B.C. Sporting Service.
 7.37: Special country session. Stock Exchange resume. Markets. Weather forecast. Late news from the "Sun" and "News". Truck bookings.
 7.58: To-night's programme.
- THE EVENING PRESENTATION—8 to 11.30 p.m.**
- 2FC's Classic Night—Monday—has formed a different impression in the minds of listeners who appreciate the better class of music. Through 2BL Monday holds just as great a significance, only the appeal is made to listeners of quite a different type—sporting enthusiasts—for the vivid wrestling description by the A.B.C. Wrestling Expert holds the undivided interest of many hundreds.
- 8.0: From the Conservatorium of Music—Reunion of the Music Groups of Australia—Address by Lady de Chair.
 Conservatorium Choir—
 "English Folk Songs" (Arr. Vaughan Williams).
 "Sonata for two Violins and Piano" (Handel)—Miss Margaret Chalmers. Mr. Henri Staell, Mr. T. H. Kelly. Two piano solos—Dorothy Gibbs and Bessie Coleman. Oliver King will speak on Club Movement. Community singing—"My Own Countree" (Londonerry Air). John Peel.
 8.45: From the Studio—The National Broadcasting Orchestra—Overture "Preciosa" (Weber).
 8.52: Senia Chostakoff, tenor—late of the Don Cossack Choir—Russian Group. orchestral accompaniment—
 (a) "The Northern Star" (Glinka).
 (b) "Russian Gipsy Romance—Beautiful Eyes" (Folk Song).
 9.2: Muriel Lang, cellist—
 (a) "Prière" (Squire).
 (b) "Melodeon" (Gluck).
 9.16: Fraser Coss, baritone—
 (a) "A Song Remembered" (Coates).
 (b) "The Company Sergeant Major" (Sanderson).
 9.23: The National Broadcasting Orchestra—Fantasie. "The Flying Dutchman" (Wagner).
 9.38: Senia Chostakoff, tenor—orchestral accompaniment—
 (a) Italian "Ah, che la morte" from "Il Trovatore" (Verdi).
 (b) English "A Dream" (Bartlett).
 (c) Italian "La Donna e mobile" from "Rigoletto" (Verdi).
 9.45: Muriel Lang, cellist—
 First Movement of Grieg Sonata.
 9.52: Fraser Coss, baritone—
 (a) "The Ginchy Road" (Edwards).
 (b) "Song of the Clock" (Burchell).
 10.0: F. H. Raward will speak on the Scottish War Memorial.
- 10.15: Announcements. Late official weather forecast.
 10.20: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 11.30: Close. National Anthem.
- 2BL**
- Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 351 Metres).
- OPENING SESSION—8.15 to 11 a.m.**
- 8.15: G.P.O. chimes and announcements.
 8.16: Music for every mood.
 8.40: Meteorological data for the country.
 8.45: Mails and shipping information.
 8.50: Memory melodies.
 9.0: This morning's story.
 9.30: A musical interlude.
 9.40: British Official Wireless press.
 9.45: New music.
 10.5: News from the "Sydney Morning Herald".
 10.10: Austradio musical reproduction.
 10.40: The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.
 11.0: G.P.O. chimes. Close down.
- MIDDAY SESSION—12 noon to 2.30 p.m.**
- 12.0: G.P.O. chimes. Announcements.
 12.2: The National Broadcasting Orchestra.
 1.0: Afternoon news from "The Sun" and the "Evening News".
 1.5: Studio music.
 1.15: Women's Interest Talk—Matron M'Millan. "Plunket Mothercraft".
 1.30: Austradio musical reproduction.
 2.0: J. Knight Barnett at the Wurlitzer.
 2.12: Studio music.
- AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.**
- 2.30: Business Efficiency Talk—C. R. Hall will speak on "Australian Manufacturers' Conference".
 2.45: The Magic Carpet Series—C. Price Conigrave: "Dr. Leichhardt—Brisbane to Port Essington".
 3.0: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 3.12: Patricia Crosby, in popular songs—
 (a) "High Upon a Hill Top" (Whiting).
 (b) "I'll Always be in Love With You" (Stept).
 3.19: The Melody Makers—
 (a) "I'll Get By" (Turk).
 (b) "Some Sweet Day" (Shilkret).
 3.26: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 3.32: Kathleen Roe pianist—
 (a) "Giles Farnaby's Dream" (Farnaby).
 (b) "Tove" (Farnaby).
 (c) "Allegro" (Mozart).
 3.39: Patricia Crosby in popular songs—
 (a) "You Were Meant for Me" (Brown).
 (b) "Love Boat" (Brown).
 3.46: The Melody Makers—
 (a) "That's You Baby" (Conrad).
 (b) "Beloved" (Kahn).
 3.53: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 4.0: Kathleen Roe pianist—
 (a) "Barcarolle" (Paderewski).
 (b) "Prelude" (Rachmaninoff).
 4.7: Radio rhythm.
 4.12: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 4.22: The Melody Makers—
 (a) "Just a Memory" (De Sylva).
 (b) "Marie" (Berlin).
 4.32: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
 4.45: The Trade Hour—demonstration music.
 5.45: Weather information. Close down.
- THE DINNER HOUR—6.15 to 7.35 p.m.**
- 5.15: The Dinner Music Session.
 6.45: The A.B.C. Younger Set Session—Boys' Aero Club, conducted by Mr. Norman Lyons.
 7.5: A Talk on "Health Week" Dr. Arthur—Correct Diet for Children.
 7.15: The Country Man's Market Session—Wool, wheat, stock, farm produce, fruit and vegetable markets.

7.30: Australadio musical reproduction.
7.55: What's on the Air To-night?

TO-NIGHT'S PRESENTATION—8 to 10.30.
Our Sporting Programme to-night: Description of the big wrestling contest at the Stadium provides sharp contrast to 2FC's Classic Music. Each service caters for the individual case of our many listeners.

8.0: Hal Stead, novelty pianist—
(a) "I Must Be Dreaming" (Sherman).

(b) "Sleepy Valley" (Hanley).

8.7: Bert Gilbert continues his famous Hopcroft Series.

8.23: Grace Quine, popular ballads—

(a) "I've Never Seen a Smile Like Yours" (Frazier).

(b) "Old Pals are the Best Pals After All" (Rose).

8.30: From the Stadium: Description of to-night's wrestling contest, by Frederick Johns.

10.0: From the Studio: Hal Stead, novelty pianist—
(a) "I'm Crying 'Cause I'm Losing You" (Friend).

(b) "Weary River" (Silvers).

10.7: Grace Quine, in popular ballads—

(a) "Love Dreams" (Axt).

(b) "Happy Days and Lonely Nights" (Fisher).

10.15: Australadio musical reproduction.

10.20: Late news from "The Sun" and "News." Late weather forecast.

10.30: National Anthem. Close.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session by Mrs. W. J. Stelzer. 10.15: Address by Mrs. Jordan. 11.30: Address by Miss Mary Rivett—"Ideals and Education." 11.45: Close down. 2.0: Music. 2.5: Women's Radio Service by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Music. 3.30: Close down.

5.15: Children's session by Uncle George. M-G-M Radio Movie Club session. 7.0: Music. 7.45: Feature story. 8.0: Miss Molly Long, contralto. 8.7: Symphony Orchestra.

8.15: Mr. John Muirhead, tenor. 8.22: Instrumental Trio. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Doris Robinson, soprano. 8.45: Address. 9.0: Weather report. 9.1: Symphony Orchestra.

9.10: Miss Molly Long, contralto. 9.20: Mr. Heath Burdock, Shakespearian recital. 9.30: Mr. John Muirhead, tenor. 9.40: Instrumental Trio. 9.50: Miss Doris Robinson, soprano.

10.0: Instrumental music. 10.30: "God Save the King."

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION

12.30: Request numbers. 1.0: Chimes Music. 1.15: Talk on Homecraft, by "Pandora." 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme.

EVENING SESSION

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request numbers. 7.45: Radio Talk by Mr. E. Homfray. 8.0: Piano recital. 9.0: Chimes. Comments on Foreign Affairs by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney (Wavelength, 280 Metres).

MORNING SESSION and CHILDREN'S SESSION.—See Friday, EVENING SESSION.

—7.0: Musical interlude. 7.15: Dance music. 7.45: Militant Women's Group. 8.0: Overture. 8.8: Tenor solos, Mr. A. Hillman. 8.15: Dance music. 8.30: Request numbers. 8.45: Soprano solos, Miss Wright. 9.0: Novelty Interlude. 9.10: Request numbers. 9.30: Selection of latest Brunswick, Columbia, Parlophone, Regal, and Golden Tongue records. 10.10: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

7.15: Breakfast time hour orchestral music. 7.58: Announcements. 8.0: Clock and chimes. 8.1: Orchestral selections. 8.30: Weather forecast. Close down.

COMPARE

THE THICKNESS OF THEIR PLATES

SEVEN STAR FEATURES

1. Every V. D. is charged ready for immediate use at the factory.
2. The plates are laminated for extra strength and to permit the free circulation of the electrolyte.
3. The plates are welded together in sets of three with a generous space between the positive and the negative. This eliminates interaction.
4. Large coloured terminals with dissimilar threads.
5. The Lamminode plate is the equivalent of the thick plate, but the electrolyte can flow through it immediately and get to work upon its several surfaces without hindrance. Any V. D. can be recharged within eight hours—speedy charging will not harm its plates.
6. The glass cell is crystal clear and robust, with ample mud space at the bottom.
7. Plates made under the Special Activation Process. This process, because it produces a plate active right through, not merely on its surfaces, ensures a length of service which is truly remarkable.

NOYES BROS
SYDNEY, LIMITED. (MELBOURNE) PTY., LIMITED.

Sydney: 115, Clarence Street
Newcastle: J. Watt Street
Brisbane: Perry House
Perth: J. R. W. Gardam & Co.

Melbourne: 495, Bourke Street
Adelaide: 119, Pirie Street
Hobart: 36, Argyle Street
Launceston: 59, George Street

Interstate Programmes, Monday, October 21

3LO

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 311 Metres).

EARLY MORNING SESSION.

See Friday.

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

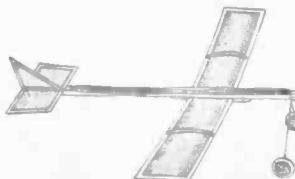
EDUCATIONAL SESSION.

2.0: Boys and Girls of Other Days—Miss D. Bulington. 2.15: Musical Interlude. 2.20: Scene in Every-day Life—Mr. Loftus Hill. 2.30: Music of Australian Writers—E. Wilmet and Furnley Maureen. Mr. Percival Serlin. 2.55: Musical Interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: Paul Jeacle and His Band—"Wagoneer" (Black). "I'm Just a Vagabond Lover" (Feist). 3.6: Chas. Stevens, tenor. 3.13: Sylvia Nelson, entertainer. 3.20: Paul Jeacle, saxophone solo—"Pauline" (arr. and composed by Paul Jeacle). 3.24: Winifred Greer, contralto—"All Joy Be Thine" (Sanderson). "Doubt You Mind the Sorrows" (Hollister). Paul Jeacle and His Band—"Just a Night for Meditation" (Young). "When My Dreams Come True." 3.37: Syd. Hollister, entertainer—"Just for Fun." 3.47: Paul Jeacle, piccolo solo—"You Picco" (arr. Paul Jeacle). 3.51: Winifred Greer, contralto—"My Dear Soul" (Sanderson). "My Ships" (Barrett). 3.58: Sylvia Nelson, entertainer. 4.5: Paul Jeacle and His Band—"The Girl from Hungary" (Black). 4.11: Syd. Hollister—"A Little Merriment" (Black).

WARNEFORD MODEL FLYING AEROPLANES



With Swivel double bearing Shock-absorbing Chassis. The Propeller and Chassis turn under machine on alighting, and prevent propeller breakage.

THE "MOTH." 18in. x 18in. span 6/6

THE "DEMON." 25in. x 28in. span 11/6

THE "SWIFT." 30in. x 28in. span 13/6

THE RACER.

A twin-gear Model, with shock-absorbing Chassis. 12in. Propeller. 3in. Fuselage. 21in. wing span.

PRICE, 30/-.

Postage on above Models, 1/3.

MATERIALS FOR BUILDING MODELS.

14in. Flat Rubber, 4d per yd.

1-16in. Square, 3d; Min. sq., 6d yd.

Proofed Silk, 7/6 yd.: Extra Light, 8/6.

Plain Silk, 2/6 yd.: Dope, 1/8 bottle.

Aero Wire, 18 gauge 6d, 20 gauge 4d, 16 gauge 6d, 30 gauge 3d per ft. coll.

Aluminium Landing Wheels, 14in. 1/- pr. 2in. 1/6 pr., 3in. 2/3 pr.

Winders for Double-gear'd Planes, 3/6.

SPRUCE WOOD IN 4ft. LENGTHS.

5/8 x 3/8	1/-	5/8 x 4/8	6d
5/8 x 1-1/8	5d	1/2 x 5-1/2	8d
5/8 x 3-1/8	10d	1/2 x 4/8	1/2
5/8 x 1-1/8	3d	1/4 x 3/8	1d

Postage must be added to above.

Please state length of Fuselage Stick so that we can cut Spruce Wood for Packet or Parcel Post.

WALTHER & STEVENSON LIMITED

THE BOYS' MODEL SHOP,
395 George St. (opp. Dymock's) Sydney

Chas. Stevens, tenor. 4.28: Paul Jeacle and His Band—"A Trip Around the World." descriptive (Paul Jeacle). 4.34: Close down.

THE CHILDREN'S CORNER.

5.45: "Humpty and Dumpty," 6.35: "Nick and Nack"—"How to Make Music Out of 'Nick-nacks'?"

EVENING SESSION.

6.40: Evening Activities—Mr. E. G. Taylor. 6.55: Musical Interlude. 7.0: Time signal. 7.1: Countryman's session. 7.25: Recent Discoveries and Inventions—Mr. R. H. Willmott. 7.40: News service. 7.45: The World's Kaleidoscope—Prof. K. H. Bailey. M.A., B.C.L. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

Old-time Dance Night. Dancing from 8 till 11 p.m. Old-time musical items and choruses, with Mrs. Campbell at the piano. Master of Ceremonies—Mr. R. H. Spaven. Bendall and Aumont's Orchestra. Dance—1. Waltz—"They All Love Jack." 2. Schottische—"Grandfather's Clock." 3. Quadrille—"Scotland, for Ever." 4. Valetta—"Old Sir." 5. Waltz, "Blue Danube." 6. Lancers—"Harlequin." 7. Barn Dance—"Sweet Marie." 8. Polka—"Cows Are In the Corn." 9. Alrets, Old Popular Tunes. 10. Waltz—"Eileen Alannah." 11. Polka Mazurka—"Bella." 12. Royal Irish—"Rolloking Irish." Note.—At 10.30: Meteorological information: British official wireless news; items of interest.

11.0: "The Rex" Dance Band.

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 484 Metres).

MORNING SESSION.—See Friday.

MIDDAY SESSION.—See Friday.

AFTERNOON SESSION.

2.1: Orchestral. Sir H. Wood and the New Queen's Hall Orchestra. 2.8: Baritone, Len Maurice. 2.12: Violin, Toscha Seidel. 2.16: Comedian, Milton Hayes. 2.20: Band music—Robertson's Guards and Grenadiers. 2.24: Comedians, The Trix Sisters. 2.30: Piano, Adam Carroll. 2.36: Baritone, Len Maurice. 2.40: Comedian, Milton Hayes. 2.44: Organ, Milton Charles. 2.48: Band music, Regimental Band of His Majesty's Grenadier Guards. 2.52: Comedians, The Trix Sisters. 2.56: Piano, Adam Carroll. 3.0: Dress numbers. 3.0: Doreen, Your clothes in modern style. 3.20: The Grelly Girls. 3.25: Musical interlude. 3.40: You, garden, seasonable hints, Mr. H. Brunn. 3.55: Musical interlude. 4.0: Wanderings through Southern India, Miss Stella Parker. Traders' Demonstration Session. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

7.30: Dinner music supplied by the Studio Light Orchestra. 7.32: Supplying results, acceptance and position reports to the Werribee Cup meeting on Wednesday, October 23. 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION.

8.1: Recent books of note. Mr. A. A. Phillips. B.A.

8.15: National Broadcasting Orchestra—Processions, march from the ballet "Sylvia" (Delibes).

8.20: The Aristo Quartette—Ensemble (baritone, soprano, violin, and cello).

8.25: "Lieder aus der Faust" (Gounod), the Russian Folk Songs, Ballet Music from "Sylvia".

8.30: "I'm a longing for You" (Hans Niessky), "Down Hawaian Way" (Oliver), Piano, "Bird Fingers Fantasy" (Zimmermann), "Bells Across the Meadows" (Kefelby), Baritone, "In an Old Fashioned Town" (Sanders), Ensemble (baritone, soprano, violin, and cello).

8.35: Merlina Llewellyn, harp—"Fantasia" (Schubert).

8.58: J. and G. the Confidential Two—"I'm Just a Vagabond Lover," "A Bouquet of Memories," "Song of the Nile."

8.6: Gus Quinn, radio magician—Have a pack of cigarette paper, and pencil in readiness.

8.14: Betty Brown, "cello—"A Perfect Day."

8.20: Jack Houston, ventriloquist—"The Police Constable."

8.28: National Broadcasting Orchestra—"Two Novelties" (Ancliffe).

8.33: One-act play, "Post Mortem" (Charles Devine). Characters: Miss Richard Barker, Lucy Ahon: Mr. Richard Barker, John Coyne: Jimmy (the burglar), Frank Goddard, Al (Jimmy's pal), Charles Haines, Scene, backdrop.

8.48: Merlina Llewellyn, harp—"Waltz No. 15" (Brahms), "Songs Without Words, No. 4" (Mendelssohn).

9.53: Gus Quinn, more radio magic.

10.0: Weather information and "Herald" news.

10.4: National Broadcasting Orchestra—"Danse des Béchante" (Gounod).

10.15: J. and G. the Confidential Two, will entertain.

10.20: Jack Houston, ventriloquist—"The Divorce."

10.26: National Broadcasting Orchestra—Ent'reacte, "Pirouette" (Finck).

10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane
(Wavelength, 385 Metres).

For day sessions see Friday.

NIGHT SESSION.

8.0: The Studio Orchestra—Overture, "Nebuchadnezzar" (Verdi).

8.7: Mary McNeish, soprano—"A Brown Bird Singing in the Woods." The Aloha Trio—Hawaiian Instrumentalists.

RADIO PLAY.

"The Man in the Street" (by Louis N. Parker). Cast: Jabez Gover, Phillip Adair (an artist), Ernest Barry, Minnie Adair (his wife), Dulcie Scott.

8.15: Radio Play—"The Man in the Street."

8.18: Douglas Drouyn and his Trio—Featuring the electric guitar.

8.55: The Anglo Male Quartette—"Last Rose of Summer" (Parks).

9.0: Metropolitan weather forecast.

9.1: The Second Talk in connection with 4QG's "Home Flower Scheme"—"The Soil and its Preparation" by "Tecoma."

9.11: The Studio Orchestra—"Melodie in F" (Rubinstein).

9.16: "A Thought for To-night" (Will H. Lester).

9.20: "The Aloha Trio—More Hawaiian Music.

9.25: The Anglo Male Quartette—"Ole Grey Babe."

9.30: Douglas Drouyn and his Trio—Musical entertainers.

9.40: Mary McNeish, soprano—"One Fine Day" (Puccini).

9.45: Mrs. F. North, pianist—"Nocturne in E Flat" (Chopin).

9.50: The Anglo Male Quartette—"I'd Like to Go Down South" (Parks); "Southern Memories" (Coey).

9.58: The Studio Orchestra—Dance music.

10.0: News.

10.15: The Radio Rascals—Entertainers.

11.0: Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 469 Metres).

AFTERNOON SESSION.—3.0 to 4.30: See Friday.

EVENING SESSION.—6.0 to 7.30: See Friday.

7.20: Under the auspices of the South Australian Agricultural Department, Mr. R. Fowler (manager, Blackwood Experiment College) will speak. 7.25: The 5CL Twinkler Boys' Club.

NIGHT SESSION.

8.0: Chimes.

8.1: The most popular music roll of the week.

8.10: Walter Barratt and his Maison Masters of Melody—"The Wedding of the Painted Doll" (Brown).

8.16: George Horton, comedian, will entertain you.

8.46: Walter Barratt and his Maison Masters of Melody—"That's How I feel about you," "Lonely Little Thing Called Davis."

8.50: Hilda Hammond, soprano—"Forty-seven Ginger Headed Sailors" (Sarony).

8.56: Hilda Hammond, soprano—"Waltz Song" (Colley).

8.58: Walter Barratt and his Maison Masters of Melody—"You were Meant for Me" (Brown), "Love of Melody" (Ax), "Chilly Pom Pom" (Bryant).

8.36: George Horton, comedian, will entertain you.

8.46: Walter Barratt and his Maison Masters of Melody—"Bird" (Woods), "Forty-seven Ginger Headed Sailors" (Sarony).

8.56: Hilda Hammond, soprano—"Waltz Song" (Colley).

9.0: G.P.O. chimes.

9.1: Meteorological information, including Semiconductor tides.

9.2: Overseas grain report.

9.5: Walter Barratt and his Maison Masters of Melody—"A Room with a View" (Coward), "Old Rag Doll" (Ager), "Could it be you?" (Winegar).

9.17: Vocal number (selected) (Winegar).

9.21: Walter Barratt and his Maison Masters of Melody—"The Sun is at my Window" (Lewis), "Lucky in Love" (De Sylva), "Flower of Love" (D'Oyly Carte).

9.31: Hilda Hammond, soprano—"The Piper of Love" (Carey).

9.35: Walter Barratt and his Maison Masters of Melody—"Half a Moon" (Hanley), "Avlon Town" (Brown), "You're Wonderful" (Fields).

9.45: George Horton, comedian, will entertain you.

9.55: Walter Barratt and his Maison Masters of Melody—"I saw down and go Boom" (Brown), "Broadway Melody" (Brown), "Oh, What a Night" (Ellis).

10.5: Hilda Hammond, soprano—"Gather ye Rosebuds" (Sanderson).

10.9: Walter Barratt and his Maison Masters of Melody—"Carolina Moon" (Davis), "Dance of the Rag Doll" (Brown).

10.15: The "Advertiser" general news service; British official wireless news; meteorological information.

10.28: Our good-night thought.

10.30: On with the dance—Walter Barratt and his Maison Masters of Melody, request numbers.

11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 183 Metres).

EARLY MORNING SESSION, MORNING SESSION, TRADERS' DEMONSTRATION, MID-DAY SESSION.

THE RADIO MATINEE, EARLY EVENING SESSION.—See Friday.

EVENING SESSION.—8.0: Chimes. 8.1: Weather.

8.2: Revue. 8.45: Talk, by Basil Kirke. 9.0: Chimes.

9.1: Weather. 9.2: Revue. 10.0: Chimes.

10.2: Temple Court Dance Band. 11.0: Chimes. Close down.

IF YOU'VE AN EYE FOR QUALITY —
OR
AN EAR
FOR
SELECTIVITY —



Because Mullard A.C. Valves are the product of best British materials, produced by the finest British workmanship and have stood the most rigorous tests and trials to which they are always submitted, they give more volume and better tone.

A.C.4.

This is a dull emitter output stage, super-power valve of great amplification. It is suitable for use with the largest loud speakers and is a directly heated A.C. valve with U.X. base.

Max. Fil. Voltage . . 5.0 volts Impedance . . 1,450 ohms
Filament Current . . 0.25 amp. Amplification Factor . . 3.8

PRICE 19/-

Also the A.C.3 for Radio and first audio stage, directly heated, 1.5 volts, 1.1 amps, with UX base, and the 102T valve, indirectly heated, special detector, 2.5 volts, 1.5 amps, with UY base.

Mullard Speakers speak volume of Quality

Mullard

THE MASTER VALVE

Ask your Dealer for booklet describing Mullard Valves and Speakers, or write
A Beal Pritchett (Aust.) Ltd., 17 Parker Street, Sydney; or 150 Queen Street,
Melbourne.

Local Programmes, Tuesday, October 22

2FC

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

7.0: "Big Ben" and meteorological information for the man on the land.
7.3: This morning's news from the "Sydney Morning Herald."

7.8: Austradio Musical Reproduction.

7.45: Mails and shipping.

7.48: What's on-to-day?

7.50: Children's Birthday Calls.

8.0: Music from the Studio.

8.15: Close.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

10.30: Announcements.

10.32: A.B.C. Racing Observer.

10.45: Price Dunlavy at the Grand Organ.

11.0: Household Helps—Hints to housewives by Miss Ruth Furst.

11.10: Cables (copyright)—"Sun"—"Herald" and A.P.A. News Service.

11.15: Morning devotion.

11.30: Austradio Musical Reproduction.

11.53: British Official Wireless Press.

12.0: "Big Ben": Stock Exchange and metal quotations.

12.5: Illustrated musical lecturette by Florent Hoogstel.

12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land supplied by the State Marketing Board.

12.30: Close.

THE LUNCH HOUR—1 to 2.30 p.m.

1.0: Lunch hour music.

2.0: Stock Exchange, second call.

2.2: A glance at the afternoon "Sun" and "News".

2.7: F. A. McNeill will speak on "Shells."

2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

2.30: The 2FC Instrumental Trio.

2.40: A talk on Health Week—Dr. Sherwin "Sunshine."

2.50: Mab Fotheringham, soprano—

20 Stations on a One Valve Set!

THE WONDERFUL ONE

COMPLETE KIT OF PARTS, WITH BATTERIES, VALVE, PHONES, AND DIAGRAM. £2.15.—

THE NEW MAGNAVOX

SPEAKERS,

X CORE TYPE.

CALL AND HEAR THEM. THEY ARE A REVELATION.

VARTA RECHARGEABLE B BATTERIES, in 10 Volt Units 5/-

Billow Geared Vernier Dials	2/2
Walnut Vernier Dials	3/6
Diora Vernier Dials	4/6
Diora Midget Vernier Dials	3/6
Saxon S.L.F. Condensers— 00023, 00033, 0005	3/6
Geared Vernier Condensers, .0006	3/6
All American Output Transformers	5/6

BEFORE BUILDING THAT SET, COME AND LET US QUOTE YOU. ADVICE FREE.

RADIO CHAIN STORES

29 ROYAL ARCADE
PITT ST. END SYDNEY

- (a) "Love is Meant to Make us Glad" (German).
- (b) "Little Mary Fawcett" (Witty).
- 2.57: The 2FC Instrumental Trio.
- 3.7: The Ahad Duo, musical entertainers—
(a) "Sweet Honolulu" (Hopkins).
(b) "Hawaiian Foxtrot Medley" (Kahn and Whiting).
- 3.14: Horace Keats, pianist—
(a) "Evening Calm" (Sibelius).
(b) "Tempo di Minuetto" (Zanella).
(c) "Scampering Kid Goats" (Poldini).
- 3.21: Mab Fotheringham, soprano—
(a) "Woman's Way" (Roekel).
(b) "Daddy and Babsy" (Levey).
- 3.28: The 2FC Instrumental Trio.
- 3.45: The Ahad Duo, musical entertainers—
(a) "Medley" (Pearce, Nelson, Morris).
(b) "Hawaiian Frolic" (Makiki).
- 3.52: Horace Keats, pianist—
(a) "March Mignon" (Hellemann).
(b) "Mood Pensive" (Williams).
(c) "Impetuous Imp" (Williams).
- 4.0: Louise Homfrey will speak on the "Impressions of a Wanderer."
- 4.15: The 2FC Instrumental Trio.
- 4.28: Stock Exchange, third call.
- 4.30: Close.
- EARLY EVENING SESSION—5.45 to 7.55 p.m.**
- 5.45: Kiddies' "Goodnight" Stories told by Aunt Willa, assisted by Cousins Gwen and Clarice.
- 6.45: Dinner hour music.
- 7.30: A.B.C. Sporting Service.
- 7.37: Special country session. Stock Exchange resume. Markets. Weather forecast. Late news from the "Sun" and "News." Truck bookings.
- 7.58: To-night's programme.
- THE EVENING PRESENTATION—8 to 11.30 p.m.**
- It is a special night at 2FC to-night. We have an audience in the Studio—and our guests are members of the Press Association. The State-wide Radio Dance Programme is in progress—real old-time numbers, the requests of our listeners. In contrast to this popular entertainment 2BL offers a Classic Programme featuring Constance Burt, soprano.
- 8.0: The Australian Broadcasting Dance Orchestra.
- 8.12: Charles Lawrence, entertainer—
(a) "The Vulgar Dustman."
(b) "The Business Guide."
- 8.22: The Australian Broadcasting Dance Orchestra.
- 8.34: Greeting to country listeners.
- 8.36: Madame Zealandia, soprano. Three Auld Scotch Songs—
(a) "The Auld Hoose."
(b) "Jessie's Dream."
(c) "Comin' thru' the Rye."
- 8.43: The Australian Broadcasting Dance Orchestra.
- 8.58: Another greeting to the country.
- 9.0: The country man's weather session—
(a) New South Wales forecasts.
(b) Inter-State weather synopsis
- 9.15: Greetings to Fiji.
- 9.2: The Australian Broadcasting Dance Orchestra.
- 9.14: Janetski Trio, vocal with ukulele—
(a) "There's a Rainbow Round My Shoulder" (Jolson).
(b) "Giri of My Dreams."
(c) "Precious Little Thing Called Love."
- 9.24: Something new in a radio sketch.
- 9.34: The Australian Broadcasting Dance Orchestra.
- 9.46: Maggie Foster, violinist—
(a) "In the Gloaming" (Harrison).
(b) "Love's Old Sweet Song" (Molloy).
- 9.56: The Australian Broadcasting Dance Orchestra.
- 10.6: Charles Lawrence, entertainer—
(a) "Not Quite Original."
(b) "Fiction for the Fireside."
- 10.15: Announcements. Late official weather forecast.
- 10.20: The Australian Broadcasting Dance Orchestra.
- 11.30: Close. National Anthem.
- 2BL**
- Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 353 Metres).
- OPENING SESSION—8.15 to 11 a.m.**
- 8.15: G.P.O. chimes and announcements.
- 8.16: Music for every mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and shipping information.
- 8.50: Memory melodies.
- 9.0: This morning's story.
- 9.30: A musical interlude.
- 9.40: British Official Wireless Press.
- 9.45: New music.
- 10.5: News from the "Sydney Morning Herald."
- 10.10: Austradio musical reproduction.
- 10.40: The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.
- 11.0: G.P.O. chimes. Close down.
- MID-DAY SESSION—12 noon to 2.30 p.m.**
- 12.0: G.P.O. chimes. Announcements.
- 12.2: The National Broadcasting Orchestra.
- 1.0: Afternoon news from "The Sun" and "The Evening News."
- 1.5: Studio music.
- 1.15: Women's interest talk—Annie Hughes, "Actors and Actresses of To-day."
- 1.30: Austradio musical reproduction.
- 2.0: J. Knight Barnett at the Wurlitzer.
- 2.12: Studio music.
- AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.**
- 2.30: Business efficiency talk—Fred Arling-ton-Burke, "A European United States."
- 2.45: The Magic Carpet Series—Tom Gurr, "Bombay and the Great Plague."
- 3.0: Radio rhythm.
- 3.12: Edith Cowley, entertainer—
"Mrs. Harris and the Sob Stuff" (Pouly).
- 3.19: Songs of to-day.
- 3.29: Teodora Stephens, pianist—
(a) "Carnival Mignon" (Schutt).
(b) "Prelude" (Schutt).
(c) "Sadness of Solumbine" (Schutt).
(d) "Harlequin's Serenade" (Schutt).
(e) "Pierrot's Dream" (Schutt).
- 3.35: Dot Brown, popular vocalist.
- 3.42: Musical interlude.
- 3.53: Edith Cowley, entertainer—
"Keeping a seat at the Benefit."
- 4.0: The Melody memories.
- 4.12: Teodora Stephens, pianist—
(a) "On Wings of Song" (Mendelssohn-Liszt).
(b) "Rigoletto Paraphrase" (Liszt).
- 4.19: Dot Brown, popular vocalist.
- 4.26: The newest dance music.
- 4.45: The trade hour—demonstration music.
- 5.45: Weather information. Close down.
- THE DINNER HOUR—6.15 to 7.55 p.m.**
- 6.45: The A.B.C. Younger Set session—Girl Guides Club conducted by Miss Gwen Varley.
- 7.5: Studio music.
- The country man's market session—Wool, wheat, stock, farm produce, fruit and vegetable markets.
- 7.30: Austradio musical reproduction.
- 7.55: What's on the air to-night?
- TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.**
- There is a special programme in progress to-night through 2BL and 2FC. We have an audience in the studio—over 100 members of the Press Association.
- Tuesday is 2BL's classic night, and the contrasting programme through 2FC service is a real old time dance concert, featuring request melodies of "Yesterday."
- 8.0: Carlyle Kenney, pianist—
(a) "Ballade G Minor, Op. 23" (Chopin).
(b) "Impromptu in A Flat, Op. 29" (Chopin).
- 8.12: Constance Burt, soprano—
(a) "Star Vicino al Bell' Idol" (Salvator).
(b) "Deh Vieni" (Mozart).
- 8.20: Athos Martelli, cellist—
"Sonata 3" (Boccherini).
- 8.28: Leslie MacCallum, flautist—
(a) "By Ocean's Strand" (Kohler).
(b) "The Broken Melody" (Van Blene).
- 8.36: Wilfrid Thomas, basso—
Two arias from "Don Giovanni" (Mozart).
(a) "The Serenade."
(b) "The Catalogue."
- 8.44: Carlyle Kenney, pianist—
(a) "Gavotte and Caprice in B Minor" (Bach).
(b) "Eccoaise in E Flat Major" (Beethoven-Busoni).

- (c) "Fantasie impromptu," Op. 66th
(Chopin).
- 8.56: Constance Burt, soprano—
(a) "Willow Song" (Taylor).
(b) "True Love" (Brahms).
(c) "Pastoral" (Carey).
- 9.4: Athos Martelli, cellist—
(a) "Minuetto" (Becker).
(b) "Berceuse" (Godard).
- 9.12: Wilfrid Thomas, basso—
Three modern art songs—
(a) "New Year Song" (Mallinson).
(b) "So White, so soft, so sweet is she" (Delibes).
(c) "O, Mistress Mine" (Quilter).
- 9.20: Leslie MacCallum, flautist—
(a) "Adagio" (Moquet).
(b) "Andalouse" (Pessard).
(c) "Im Herbst" (Anderson).
- 9.27: Weather information for the man on the land.
- 9.30: George Black will continue his series, "In My Anecdote."
- 9.45: Charles Lawrence Radio Revue Company.
- 10.20: Late weather report. Late news, "The Sun" and "The News."
- 10.30: "National Anthem." Close.

2GB

Theosophical Broadcasting Station, 29 Bligh St.,
Sydney (Wavelength, 316 Metres).

- 10.0: Music. 10.10: Happiness talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs. W. J. Stelzer, Mrs. Goodison. Racial Hygiene. 11.30: Music. 11.45: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Music. 3.30: Close down. 5.15: Children's session, by Uncle George. 7.0: Music. 7.30: Talk by Sutton's Radio Doctor. 7.45: Feature story. 8.0: Miss Vonnie O'Sullivan, contralto. 8.7: Symphony Orchestra. 8.15: Mr. Barend Harris, baritone. 8.22: Cello solos. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Gladys Verona, soprano. 8.43: Pianoforte solos. 8.50: Miss Vonnie O'Sullivan, contralto. 9.0: Weather report. 9.3: Address. 9.15: Symphony Orchestra. 9.25: Mr. Darend Harris, baritone. 9.35: Mr. Jack Win and Mr. Heath Burdock, humor. 9.40: Cello solos. 9.50: Miss Gladys Verona, soprano. 10.0: Instrumental music. 10.30: God Save the King.

2UW

Radio Broadcasting, Ltd., Paling's Building, Asb St.,
Sydney (Wavelength, 267 Metres).

MIDDAY SESSION

- 12.30: Request numbers. 1.0: Chimes. Music. 1.15: Talk on Homecraft, by "Pandora." 1.40: Music. 2.30: Close 4.30: Musical programme.

EVENING SESSION

- 5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request numbers. 8.0: Chamber Music. 9.0: Chimes. Comments on Foreign Affairs, by Mr. J. M. Prentice. 9.10: Request numbers. 10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney
(Wavelength, 280 Metres).

MORNING SESSION and CHILDREN'S SESSION.—See Friday, **EVENING SESSION**.

- 7.0: Musical interlude. 7.15: Sporting feature; turf topics; how they should run tomorrow, Mr. Geo. A. Davis. 7.45: Request numbers. 8.0: Orchestral selections. 8.10: Women's Information Service, Mrs. Gray. 8.15: Baritone selections, Mr. Higgins. 8.30: Pianoforte selections, Mr. Hancock. 8.45: Request numbers. 9.0: Sporting feature, presented by Tooth and Co., Kent Brewery, from the ringside of McHugh's Leichhardt Stadium, results of early events and full description of main 15-round event by Herbert Beaver. 9.40: Dance music from the studio. 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra,
Sydney (Wavelength, 293 Metres).

- EARLY MORNING SESSION**, 7.15 to 8.30.
MIDDAY SESSION, 11.30 to 12.30. **AFTERNOON SESSION**, 1.0 to 2.30. **EVENING SESSION**, 7.15 to 10.15 (see Friday).

EXPERIMENTERS NOTE

We offer you, free, the experience and assistance of our experienced staff in all matters, without obligation. We will be delighted to show you how simply and cheaply you can build a most efficient wireless receiver. With our extensive knowledge in wireless matters behind you, success is assured without the slightest risk of failure.

Below is a List of Parts suitable for Building the Receiver described in this issue.

SHORT WAVE RECEIVER

	£	s	d
1 Leweos Coil Kit, including AMS2, AMS4, AMS9	2	5	0
1 Leweos R.F. Choke	12	6	
1 Igranic .0002 Condenser	13	9	
1 A.W.A. Ideal Transformer	18	0	
2 Pilot UX Sockets	6	0	
1 PM4DX Mullard Valve	1	12	6
OR 1 DEL410 Osram Valve	12	6	
1 11 Plate Radlokes Midget Condenser	5	9	
1 Radiokes three-plate cut down to two plates	4	3	
1 .00015 Sangamo Fixed Condenser	2	3	
1 5-Meg. Leak, Pilot	1	6	
1 Single Circuit Jack	1	7	
1 Terminal Board, with Terminals	2	9	
1 5-Way Battery Cable	2	6	
1 Aluminium Panel, 9 x 7 x 16 Gauge	2	2	
OR 1 Bakelite Panel, 9 x 7 x 16 Gauge	2	7	

TERMS. TERMS. TERMS.

We supply all parts, including Loud Speakers and Battery Eliminators, Battery Chargers, Power Packs, etc., etc., for Cash, or on a small Deposit, and the balance in five months or twelve months, according to the article purchased. Below is a few items which will give an idea of the Deposit and Repayments required.

Cash Price. Deposit.

	£	s	d	
Philips 3009 Eliminator	8	15	0	17/6, and 19 Weekly Payments of 8/9
Philips 3002 Eliminator	9	15	0	19/6, and 19 Weekly Payments of 9/9
Philips 3063 B and C Eliminator	10	15	0	21/6, and 19 Weekly Payments of 10/9
Emmeo Super B Eliminator	12	12	0	26/-, and 19 Weekly Payments of 12/7
Emmeo Maxim B Eliminator	8	15	0	17/6, and 19 Weekly Payments of 8/9
Philips A.C. Power Pack	12	0	0	24/-, and 19 Weekly Payments of 12/-
Emmeo Power Pack	12	0	0	24/-, and 19 Weekly Payments of 12/-
Emmeo Trickle Charger	3	10	0	7/-, and 19 Weekly Payments of 3/6
Philips Trickle Charger	3	10	0	7/-, and 19 Weekly Payments of 3/6
Colmovox A Charger	5	10	0	11/-, and 19 Weekly Payments of 5/6
Colmovox A, B. Charger	6	10	0	13/-, and 19 Weekly Payments of 6/6
R.C.A. 100B	7	10	0	15/-, and 19 Weekly Payments of 7/6
Philips P.C.J.J. Speaker	6	10	0	13/-, and 19 Weekly Payments of 6/6
Philips P.C.J.J. Junior Speaker	5	10	0	11/-, and 19 Weekly Payments of 5/6
Philips Baby Grand Speaker	3	15	0	7/6, and 19 Weekly Payments of 3/9
Magnavox Belvedere A.C. D80	11	10	0	23/-, and 19 Weekly Payments of 11/6
Magnavox Beverley A.C. D80	11	0	0	22/-, and 19 Weekly Payments of 11/6
Magnavox A.C. D80 Unit	7	15	0	15/6, and 19 Weekly Payments of 7/9

The above and any other parts may be purchased on EASY TERMS. Loud Speakers, Eliminators, and Power Packs over the value of £8 may be purchased on Terms extended to fifty-two weekly payments.

TERMS FOR COUNTRY—25 per cent. Deposit, and Balance in Five Monthly Payments.

COUNTRY CLIENTS NOTE.—Postage paid on Orders over 10/-, with the exception of Sets, Loud Speakers, Batteries, Aerial Wires, and Value Payable Parcels. All Goods sold with a Money Back Guarantee; if not satisfied, and returned within ten days, money will be refunded.

Colville-Moore Wireless Supplies Ltd.

10 ROWE STREET (Next Hotel Australia), SYDNEY

'PHONE, B2261.

'PHONE, B2261.

32 Clarence St.
The
HUB OF RADIO
TRADERS
can get many exclusive Lines
as well as all the regular
Radio Equipment
AT
ECLIPSE RADIO

The following are real Money
Makers, because they give
absolute satisfaction, and
make a friend of the customer
to whom you sell them.

The Famous
TIMMONS
Magnetic Speaker

Absolutely
the latest de-
velopment,
all the Tone
of the DY-
NAMIC with-
out the use
of current.

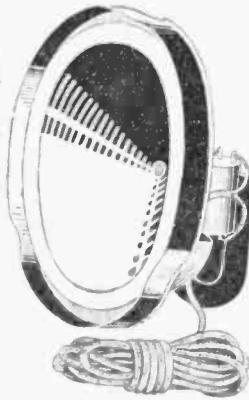
£5/5/0

Chassis

Only

£3/3/-

Less usual
discounts.



DEPENDABLE
"Saxcom"
TRADE MARK REGISTERED

RADIO BATTERY

VOLTAIC

POWERFUL EFFICIENT

Better
than
Imported

and
2 Months
Fresher.

Also,

DELMONTE SPEAKERS,
WESTERN ELECTRIC
and PARA PHONES.

GUARANTEED BY THE AGENTS

ECLIPSE
RADIO LTD
349-351 FLINDERS LANE MELBOURNE

32 Clarence Street,
SYDNEY

'Phone B2002

Interstate Programmes, Tues., Oct. 22

3LO

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 371 Metres).

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

EDUCATIONAL SESSION.

2.0: Stories from the Operas, with musical illustrations—Miss D. Babington. 2.20: Romance of the River and Gold Coast—Mrs. A. A. Downs. 2.35: Musical interlude. 2.45: Talk in French—Mons. Th. Rouet, B.A. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THEatre MATINEE.

3.0: Light Studio Orchestra—"Bacchanals," from "Samson and Delilah" (Saint-Saens). 3.6: David Hargreaves, baritone—"Friendships" (Hermann Lohr), "What the Red Hair'd Bo'sun Said" (Edith Harrhy).

3.13: Madge Sissons, piano—"Sonata Op. 10, No. 2" (Beethoven). 3.23: Jean Lewis, contralto—"Morning" (Oley Speaks). "Four Leaf Clover" (Brownell). 3.30: Arthur Johnson, violin—"Song of the Drift" (Drift). 3.35: A Comedietta, "The Tranquil Timmese," produced by Agnes St. Clair. He, Chas. Ludlow, She, Agnes St. Clair. 3.50: Studio Light Orchestra—"Ariante Cantabile from String Quartet" (Tschakowsky), "Prelude" (Jarnfeldt). 4.0: David Hargreaves, baritone—"The Windmill" (Nelson), "Tom O' Malmarsh" (Grant), "If I Were" (Richards). 4.7: Madge Sissons, piano—"Etude in F Minor" (Chopin), "Hark, Hark, the Lark" (Schubert-Liszt), "Witches' Dance" (MacDowell). 4.12: Jean Lewis, contralto—"Sunday" (Molly Carew), "That's All" (May Brueh). "My Little Old World" (Molly Carew). 4.19: Studio Light Orchestra—Selection, "Martha" (Fiotow). 4.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Bobble Bluegum," "Many Happy Returns" from "Bobble Bluegum." 6.35: Boy Scout doings—EVENING SESSION.

6.45: Careers for Our Boys and Girls—How to Become an Alman" Mr. Erie Cooper. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session, rainfall. 7.25: For the man on the land—Juvenile Farmers' Clubs, Mr. A. J. GILL. 7.40: News service. 7.45: University extension series—The Evolution of the Stars, Prof. E. J. Hartung, D.Sc. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: Sixty Minutes of Merriment—One hour of hilarity and harmony, which we will call, "An Afternoon Outing." Introducing: The National Broadcasting Orchestra, Eric Welch, Hugh Huxham, "The Wauderers," Rita Fleming, Tom Preston, Paul Jeacle and his Band, and a Boy Scouts' Brass Band.

CHORAL MUSIC.

Transmission from Australian Church.

9.0: The Melbourne Philharmonic Society. Direction, Prof. Ernestine. Pianiste, Miss Isabel Adams.

NEW CONSTELLATION IN BROADCASTING.

9.30: Jan Rubin and Adele Crane.

10.0: Something different in quartettes—The versatile Four, "Kentucky Babe," "Honey, I Want You Now."

10.7: Paul Jeacle and His Band—"Gypsy Joe," "Come West, Little Girl."

NEWS SESSION.

10.15: Meteorological information; British official news; Items of interest.

10.25: The Versatile Four—"Weary River," "That's You, Baby."

DANCE MUSIC.

10.32: "The Rex" Dance Band.

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 484 Metres).

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

AFTERNOON SESSION.

2.1: Orchestral, Capitol Grand Orchestra, ballet music from Faust. 2.16: Tenor solo, "Matiñata," Mario Chamlee. 2.24: Sextette, Sextette from Lucia di Lammermoor. 2.28: Orchestral overture, "Merry Wives of Windsor," Cleveland Symphony Orchestra. 2.32: Soprano solo, Mignon, Aria, Faust, Aria, Florencie Easton. 2.38: Piano, Alexander Brailowsky.

LIGHT MUSIC.

2.44: Part-songs, Criterion Male Quartette. 2.48: Band music, Vesella's Italian Band. 2.52: Come-dienne, Vaughan de Leath. 2.56: Syncopation, The Anglo-Persians. 3.0: Request numbers. 3.20: The Baby—Is Your Baby Over-clothed? Sister Anne Purcell. 3.35: Musical interlude. 3.40: Useful crafts at home. 3.55: Musical interlude. 4.0: The latest fashions, Madame La Mode.

TRADESMEN'S DEMONSTRATION SESSION.

4.15: Musical reproduction. 5.0: Chimes. 5.1 Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by Paul Jeacle and his band. 7.32: Sporting results. 7.35: Latest musical releases.

NIGHT SESSION.

7.45: Concert, transmitted from Bendigo. Programme: 1. Peal of bells, Mr. Arthur Cambridge—(a) The Church's One Foundation, (b) Kipling's Recessional, (c) Sweet Hour of Prayer, (d) Jesus Loves Me, (e) Nearer, My God, to Thee (Dr. Penfold). 2. Organ—Grand March from "The Mikado," Mr. W. Mansfield. 3. Solo—"It Is Enough" (Mendelssohn), Mr. Cyril Warne. 4. Solo—"The Almighty" (Schubert), Miss Hazelwood. 5. Solo—"How Lovely Are Thy Dwellings" (Liddie), Mr. Cyril Warne. 6. Anthem—"I Waited for the Lord" (Mendelssohn), St. Paul's

Choir. Soloists, Miss L. Schilling, Mrs. R. Munro. 7. Duet—"Watchman, What of the Night?" (Sergeant), Mr. Cyril Warne, Mr. Robert Pitts. 8. Organ—Overture ("Salome"), 9. Solo—"The Lord Is My Light" (W. A. Altschul), Mrs. Frank Monaghan. 10. Solo—"Honor and Loyalty," Mr. Robert Pitts. Interval. (Approximately 9 p.m.) From the studio—Romantic historical stories. Capt. Donald MacLean. Concert resumed: 11. Solo—"The Lord Is Mindful" (Mendelssohn), Miss Hazelwood. 12. Solo—"How Many Hired Servants?" (Sullivan), Mr. Cyril Warne. 13. Solo—"O, Divine Redeemer" (Gounod), Miss L. Schilling. 14. Organ—Postlude (Wely). 15. Solo—"The Dawn of Redemption" (Gray), Mr. Robert Pitts. 16. Anthem—"Hear My Prayer" (F. Mendelssohn Bartholdy). St. Paul's Choir. Obligato—Miss B. McQuiller. Organist, Mr. F. R. Sydes. Conductor, Mr. E. C. Ware.

FROM THE STUDIO.

10.15: Weather, news.

10.30: God Save the King.

4QC

Queensland Government Radio Service, Brisbane
(Wavelength, 385 Metres).

For day sessions see Friday.

NIGHT SESSION.

8.0: Mixed Octette (conductor, Sydney May)—Part song, "Hear My Prayer" (Mendelssohn). (Soloist, Nance Hicks).

8.5: Will Burch, bass—"Less Than the Dust" (Amy Woodforde-Finden).

8.15: A thought for To-night (Will H. Lister)—Colonel Robert Ingersoll.

8.14: Jill Manners, soprano—"Cupid" (Sanderson).

8.18: Mixed Octette—Part song, "Dawn of Song" (Barstow).

8.23: Miss O'Day, violinist—"Cavatina" (Raaf).

8.28: Jack Land, tenor—"Where My Caravan Has Rested" (Lohr).

8.33: Mixed Octette—"Birth of Spring" (Engelmann).

8.38: Mary L. Spanier, contralto—"Caro Mio Ben" (Glordan).

8.43: The Melodian Tria, piano, violin, banjo—(Conductor, G. Deans)—Fox-trots, "Camilie," "Thinking of You."

8.50: Jack Atkinson, baritone—"The Yeomen of England" (German).

8.55: Jill Manners, soprano, Jack Land, tenor—Vocal duet, "Love is the Sun" (Verdi).

9.0: Metropolitan weather forecast.

9.1: G. Deans, banjoist—"You and a Canoe," "Nifty Notes" (Bowen).

9.15: W. L. Burch, bass—"Up From Somerset" (Sanderson).

9.14: Nance Hicks, soprano—"The Nightingale" (Kjerulf).

9.19: Mixed Octette—"Arms and the Man" (Caryl and Monckton). (Soloist, Jill Manners).

9.25: Jack Land, tenor—"The Soft Southern Breeze" (Barstow).

9.30: The Melodians Trio—One-step, "Peter Glink."

9.35: Jill Manners, soprano—"A Young Girl's Song" (Phillips).

9.40: Jack Atkinson, baritone—"Gianniana Mia" (Primi).

9.45: Arthur Sharman, pianist—Selected.

9.50: John Steele, tenor—"Macushla" (McMurrough).

9.55: Mixed Octette—"Cycle of American Airs" (Branscombe).

10.0: News, weather information. Close.

5CL

Central Broadcasters, Ltd., 131 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION—See Friday.

AFTERNOON SESSION—See Friday.

EVENING SESSION—6.0 to 7.20: See Friday.

7.20: Under the auspices of the Workers' Educational Association, Mr. E. G. Biagioli, B.A., will speak. 7.35: Mr. H. Brewster-Jones will give a piano forte recital of "Bird Calls." 7.45: Dr. Herbert Baselow.

NIGHT SESSION.

8.0: Chimes.

8.10: Grand Boy Week demonstration by 5CL Twinkler Boys' Club. Cheerios and greetings; boys' orchestra, conducted by Miss Louise Hakendorf, L.T.C.L. Overture, Twinklerite Ken Darby (boy soprano)—Selected. Comedy sketch (written by "The Twinkler")—"Pietro is sold up." Twinklerites Hedley and Ray Smith, mandolinists—Selected duet. Captain S. A. White, C.M.B.O.U.—"A day in the life of a Magpie." The Hogan Family, mouth organ specialties. 1st Kensington Gardens Scouts and Cubs, conducted by Scoutmaster J. H. Hiles—"Campfire Songs."

8.15: Chimes.

8.22: Overseas grain report.

8.3: Announcements.

8.10: From the Exhibition Building, boys' orchestra—Selected. "The Twinkler," original stories. Tom King, pianist—Piano forte specialties. Mr. W. G. T. Goodman (Chairman of Boys' Week)—Remarks. The Hogan Family, mouth organ specialties. Twinklerite Stan Watson—Songs selected from "The Twinkler" (written by "The Twinkler"). Buffalo Bill tracks Great Hawk." Distribution of prizes, and remarks by the Lady Mayress (Mrs. Lavington Bonthony).

The Boys' Orchestra—Selected. Twinklerites, led by Vice-President W. Brett—Good-night Choruses.

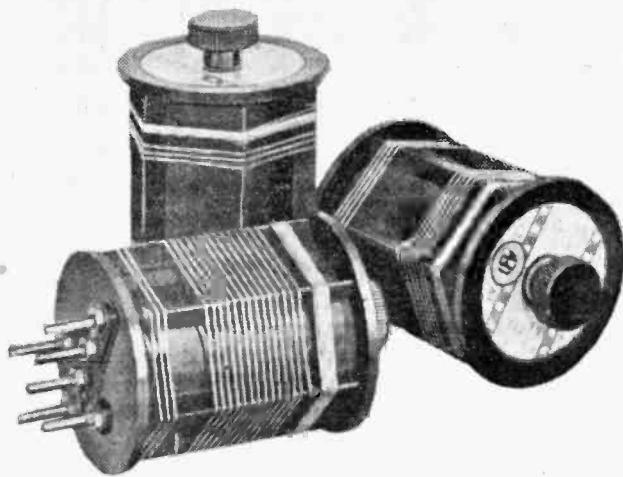
10.15: The "Advertiser" general news service: British official wireless news: meteorological information: 5CL's sporting service.

10.29: Our good-night thought.

10.30: On with the dance. Modern dance recordings.

11.0: Close.

(For GWF see page 58.)



THESE COILS WERE SELECTED

In the "INTERNATIONAL TWO," the highly efficient short wave receiver described elsewhere in this issue, three "LEWCOS" SHORT WAVE COILS are incorporated. Their constructional features make them the logical choice for best results. Every detail in the assembly of the "LEWCOS" SHORT WAVE COIL has been studied to ensure absolute efficiency. To reduce losses to a minimum, the secondary is wound with "silk insulated copper strip," giving rigidity and ultra fine tuning. Low loss design is embodied in the ribbed construction of the former. The solid construction of the "LEWCOS" SHORT WAVE COILS makes them essentially robust, so that they may be handled without risk of damaging.



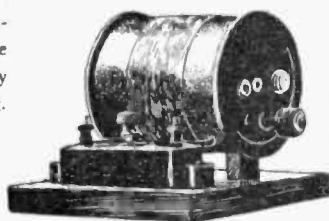
"LEWCOS" SHORT WAVE COILS

A.M.S. 2	15 to 25 metres	15/-
A.M.S. 4	20 " 45 "	15/-
A.M.S. 9	40 " 90 "	15/-
A.M.S. 25	90 " 250 "	15/-

"LEWCOS" HIGH FREQUENCY CHOKE

The Ideal Job for short wave sets. Designed to clear up reception and to prevent instability of the audio amplifier. There is no howling with the "LEWCOS" HIGH FREQUENCY CHOKE. Particularly recommended for use with screened grid receivers. May be fitted easily to your present broadcast receiver.

PRICE:
12/6



"LEWCOS" WAVE TRAP

The "LEWCOS" Wave Trap is the most efficient instrument yet designed to overcome the ever present problems of interference in broadcast reception. It is easily fitted, being simply placed in the circuit between the aerial and the aerial terminal on the receiver.

PRICE:
22/6



British & Better

OBtainable at all good radio dealers

THE LIVERPOOL ELECTRIC CABLE CO., LTD.

IN CONJUNCTION WITH THEIR ASSOCIATED COMPANY,
LONDON ELECTRIC WIRE AND SMITHS LTD.,

LEWCOS HOUSE, 233 CLARENCE STREET, SYDNEY.

TELEPHONES: M3821, MA1968.

Local Programmes, Wednesday, October 23

2FC

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.

- 7.0: "Big Ben" and meteorological information for the man on the land.
- 7.3: This morning's news from the "Sydney Morning Herald."
- 7.8: Austradio Musical Reproduction.
- 7.45: Mails and shipping.
- 7.48: What's on to-day?
- 7.50: Children's Birthday Calls.
- 8.0: Music from the Studio.
- 8.15: Close.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

- 10.30: Announcements.
- 10.32: General sporting talk by Oscar Lind.
- 10.45: Price Dunlavy at the Grand Organ.
- 11.0: Household Helps—Cooking, by Miss Ruth Furst.
- 11.10: Cables (copyright)—"Sun"—"Herald" and A.P.A. News Service.
- 11.15: Morning devotion.
- 11.30: Austradio Musical Reproduction.
- 11.53: British Official Wireless Press.
- 12.0: "Big Ben": Stock Exchange and metal quotations.
- 12.5: Michael Sawtell—"The Philosophy of a Vagabond."
- 12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
- 12.30: Close.

THE LUNCH HOUR—1 p.m. to 2.30 p.m.

- 1.0: Lunch hour music.
- 2.0: Stock Exchange, second call.
- 2.2: A glance at the afternoon "Sun" and "News."
- 2.7: Studio music.
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: Radio rhythm.
- 2.45: Florence Roache, soprano—
"The Pipes of Pan are Calling" (Monckton).
"A Thrush's Love Song" (Travers).
- 2.52: Les Harris, saxophone solos—
(a) "Supplication" (Quarante).
(b) "Dance Hongroise" (Wiedoft).
- 3.0: Song of to-day.
- 3.15: Alan E. Martin, banjoist—
(a) "Dinah's Wedding" (Pidoux).
(b) "Whistling Rufus" (Mills).
(c) "Elcapitan" (Sousa).
- 3.22: Dance music.
- 3.32: Florence Roache, soprano—
(a) "With the Pride of the Garden and Field" (Keel).
(b) "The Spring is in My Garden" (Tennent).
- 3.40: Melody memories.
- 3.53: Les Harris, saxophone solos—
(a) "Beggars of Life" (Hajos).
(b) "Saxarella" (Wiedoft).
- 4.0: Modern music.
- 4.10: Alan E. Martin, banjoist—
(a) "Fernbank Quickstep" (Oakley).
(b) "Tune Tonic" (Grimshaw).
(c) "Dream Dance" (Morley).
- 4.17: Dance items.
- 4.28: Stock Exchange, third call.
- 4.30: The newest songs.
- 4.45: Close.

THE EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" Stories told by Uncle Ted and "Sandy."
- 6.45: Dinner hour music.
- 7.30: A.B.C. Sporting Service.
- 7.37: Special country session. Stock Exchange resume. Markets. Weather forecast. Late news service from the "Sun" and "News." Truck bookings.
- 7.58: To-night's programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- Our feature to-night is the continuation of the intriguing radio serial, the "Jazz Spider," by the A.B.C. Players, followed by a pianoforte recital by Alexander Hmelnitski.
- 8.0: The State hour.
- 9.0: From the Studio—The country man's weather session—
(a) New South Wales forecasts.
(b) Inter-State weather synopsis.
- 9.2: The A.B.C. Players continue their serial, "The Jazz Spider."
- 9.40: Alexander Hmelnitski, pianoforte recital—

- (a) "Etude" (Chopin).
- (b) "Valse" (Chopin).
- (c) "Nocturne" (Chopin).
- (d) "Ballade" (Chopin).
- (e) "Scherzo" (Chopin).

- 10.5: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
- 10.15: From the Studio—Announcements. Late official weather forecast.
- 10.20: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
- 11.30: Close. National Anthem.

2BL

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 353 Metres).

OPENING SESSION—8.15 to 11 a.m.

- 8.15: G.P.O. chimes and announcements.
- 8.16: Music for every mood.
- 8.40: Meteorological data for the country.
- 8.45: Mails and shipping information.
- 8.50: Memory melodies.
- 9.0: This morning's story.
- 9.30: A musical interlude.
- 9.40: British Official Wireless press.
- 9.45: New music.
- 10.5: News from the "Sydney Morning Herald."
- 10.10: Austradio musical reproduction.
- 10.40: The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.

- 11.0: G.P.O. chimes. Close down.
- MIDDAY SESSION—12 noon to 2.30 p.m.**
- 12.0: G.P.O. chimes. Announcements.
- 12.2: The National Broadcasting Orchestra.
- 1.0: Afternoon news from "The Sun" and the "Evening News."
- 1.5: Studio music.
- 1.13: Women's Interest Talk—Miss Goodle Reeve. "Aids to Personality."
- 1.30: Austradio musical reproduction.
- 2.0: J. Knight Barnett at the Wurlitzer.
- 2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business Efficiency Talk—Dr. Harold Norrie, "Great Personalities in Australian History—Lachlan MacQuarie."
- 2.45: The Magic Carpet Series—The "Storyteller" will talk on "Heroic Tales of the Set—Frobisher."
- 3.0: 2BL Instrumental Trio.
- 3.12: Agnes McDiarmid, soprano—
(a) "Echo Song" (Bishop).
(b) "Down in the Forest" (Landon Ronald).

- (c) "When Song is Sweet" (Sans Souci).
- 3.19: Enid Conley, pianist—
(a) "Humoresque" (Bowen).
(b) "Scherzo" (Bowen).
(c) "Study" (Rosen Bloom).
- 3.27: A Talk on Health Week—Dr. Purdy.

- "The Fly and the Mosquito"
- 3.37: Essie Neal, violinist—
(a) "Idylle" (Burleigh).
(b) "Topsy" (Papini).
(c) "Liebeslied" (Kreisler).
- 3.44: 2BL Instrumental Trio.
- 3.52: Agnes McDiarmid, soprano—
(a) "Do Not Go, My Love" (Hageman).
(b) "In the Gay Olden Time" (Montague Phillips).

- (c) "The Piper of Love" (Carew).
- 4.0: Enid Conley, pianist—
(a) "Giga" (Graun).
(b) "Alr-Varie" (Matheson-Bauer).
(c) "Postlude" (Kittle-Bauer).
(d) "Minuet" (Matheson-Bauer).
- 4.8: Essie Neal, violinist—
(a) "Loure" (Bach).
(b) "Menuetto" (Milandre-Burmeister).

- 4.15: 2BL Instrumental Trio.
- 4.30: Dance music.
- 4.45: The Trade Hour—Demonstration music.

- 5.45: Weather information. Close down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: The Dinner Music Session.
- 6.45: The "Younger Set" Session: Boys Radio Club, conducted by Mr. Norman Lyons.
- 7.5: A Talk on "Bridge," by Graham Kent.
- 7.15: The Country Man's Market Session—Wool, wheat, stock, farm produce, fruit and vegetable markets.

TO-NIGHT'S PRESENTATION—8 to 10.30.

Band music is the feature of 2BL's programme on Wednesday night, which is a favorite of many listeners.

Through 2FC the A.B.C. Players, continuing their intriguing radio play, "The Jazz Spider," will prove pleasing to many who appreciate radio plays.

8.0: Salvation Army Congress Band—

- (a) March, "Golden Gate" (Broughton).
(b) Cornet solo, "O For the Wings of a Dove" (Mendelssohn).
Bandsman T. Smith—with Band accompaniment.

8.12: Molly Devine, soprano—

- (a) "Magdalene at Michael's Gate" (Lehmann).
(b) "The Piper of Love" (Carew).

8.22: Gladstone Bell, cellist—

- (a) "Cantabile" (Qui).
(b) "Ziguenerlauz" (Jeral).

8.29: Dorothy Nall, in a short sketch—

- "A Simple Girl."

8.39: The Wireless Singers.**8.49: Salvation Army Congress Band—**

- (a) March, "Congress Hall No. 1" (French).
(b) Trombone Solo, "Ora Pro Nobis" (Piccolomini).
Bandsman A. Percival, with Band accompaniment.

9.0: Molly Devine, soprano—

- (a) "The Charm of Spring" (Clarke).
(b) "In April" (Montague Phillips).

9.7: The Wireless Singers.**9.15: Gladstone Bell, cellist—**

- (a) "Berceuse Slave" (Neruda).
(b) "Alla Palaca" (Coltermann).

9.22: Salvation Army Congress Band—

- Grand Selection, "Gems from Great Masters, No. 6" (McAnalley).

9.37: Vocal duet.**9.44: Dorothy Nall, in a short sketch—**

- "A Digger's Tale" (Dennis).

9.51: Salvation Army Congress Band—

- Selection, "Jubilation."

10.0: Austradio musical reproduction.

- 10.25: Late news from "The Sun" and "News." Weather report.

10.30: National Anthem. Close.**2GB**

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

- 10.0: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs. W. J. Stelzer. Address by Mrs. Jordan. 11.30: Music. 11.45: Close down.

- 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.0: Movie Know All. 3.30: Close down.

- 5.15: Children's session, by Uncle George.

- 7.0: Music. 7.45: Feature story. 8.0: Miss Heather Kinnaird, contralto. 8.7: Violin solos. 8.15: Mr. Leslie Herford. 8.22: Symphony Orchestra. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Marjorie Cole, soprano. 8.43: Violin solos.

- 8.50: Miss Heather Kinnaird, contralto. 9.0: Weather report. 9.3: Address. 9.15: Symphony Orchestra. 9.25: Mr. Leslie Herford, baritone. 9.35: Mr. Jack Win and Mr. Heath Burdock, humor. 9.40: Instrumental quartette. 9.50: Miss Marjorie Cole, soprano. 10.0: Instrumental music. 10.30: God Save the King.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION

- 12.30: Request numbers. 1.0: Chimes. Music. 1.15: Talk on Homecraft, by "Pandora." 1.40: Request numbers. 2.30: Close. 4.30: Musical programme.

EVENING SESSION

- 5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request numbers. 8.0: Wagnerian Recital. 9.0: Chimes. Comments on Foreign Affairs, by Mr. J. M. Prentice. 9.10: Request numbers. 10.30: Close.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 303 Metres).

- EARLY MORNING SESSION, 7.15 to 8.30. EVENING SESSION, 7.15 to 10.15 (see Saturday).

(For 2KY see page 58.)

The Constructor's Loud Speaker



Standard

"Dragon"

Amplion

Type A.R. 19

£6 : 10 : 0

NOW

50'-.

Obtainable only at
LEVENSON'S

£6 : 10 : 0

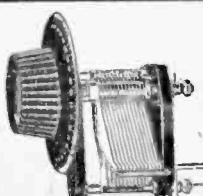
NOW 50'-.



Lissen English New Pro-cess "B" Batteries—
60 Volts, 13/6.
100 Volts, 22/6.



De Jur Rheo-
stats, 3/6.



Ormonde British Built
Variable Condensers,
00035, with 4in. Bake-
lite Dial, 12/6. Now
8/6.

Thousands of
Variable Condensers, all capaci-
ties, excepting
00005. Now 3/- and
3/6.

Silver Knight
Short Wave Coil
Kits, 35/- Now
27/6.

Silver Knight
R.F. Chokes, 5/-
Marvol Rheo-
stats, 1/9.
Amplion Loud
Speaker Units,
or Gramophone
units, 12/-
A.R. 17, Now 30/-
Worth double.

Continental Cone
Speaker Units,
13/6.

English Midget
00001 Reaction
Condensers, 3/-
Section Insula-
ted Aerol, 100ft.
box, 2/-.

De Jur Variable
Condensers De
Luxe, Best made.
00014, 10/6.
00025, 11/6.
00035, 12/6.
0005, 12/6.

De Jur Gramo-
phone Pick Up,
with volume con-
trol and adapter,
22/12/6. Tone-
arm, 7/6 extra.

Midget Neuro-
dyne Coil Kits,
13/6. Now 5/6.

De Jur Interstate
3 Coil Tuners,
best made, 15/-
De Jur 1930
Browning Drake
Coil Kits, 22/6.
Ormonde Short
Wave Variable
Condensers, tri-
ction drive, 35/-
Now 1/2-price,
17/6.

Magnus Profes-
sional Head-
phones, 35/- Now
17/6.

B.T.H. British
UX Base Valves,
2 and 6 volt Ser-
ies, 13/6. Now
8/6.

Like a Flash
Transformers, for
A.B.C. Sets, Park,
Heavy Duty, 25/-
Heavy Duty Double
Chokes, 25/-
Bell Ringing
Transformers, 7/-
U.Y. Valve Sockets,
1/9.

0005 Ball-bearing
English Condensers,
one hole mount, 5/9.

1000 Volt Test
Bypass Condens-
ers, mfd., 200 Test,
2/8.
1 1000 V. Test,
3/3.
4 1000 V. Test,
7/-.
4 1000 V. H.
Duty, 9/6.

Lissen English
Goods just ar-
rived.

Audio Trans-
formers, 12/6.

Super Audio
Transformers,
24/-.

Gramophone
Pick Ups, 15/-
R.F. Chokes, 6/6.

Loud Speaker
Units, 13/6.

Loud Speaker
Reeds, 1/-.

LEVENSON'S RADIO

"The Palace of Wireless"

226 PITT ST., SYDNEY.
Branch, 86A Pitt St., between Martin
Place and Hunter St.

**SPECIAL ATTENTION TO COUNTRY
ORDERS.**

Please add Freight.
Send 9d for new Catalog Coupon en-
closed, valued 4/-.

Interstate Programmes, Wed., Oct. 23

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 371 Metres).

EARLY MORNING SESSION.

See Friday.

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

EDUCATIONAL SESSION.

2.0: Pure Speech—Miss Alice Smith. 2.15: Musical Interlude. Sporting. 2.18: Description of Trial Handicap, 6 furlongs, Werribee Cup meeting, by Eric Welch. 2.25: Rambles in the Bush—Chas. Daley. 2.40: Musical Interlude. 2.43: Description of Three-Year-Old Handicap, 7furl., 65yds., Werribee Cup meeting, by Eric Welch. 2.50: How Our Laws Are Made—Hon. J. H. Keating, LL.B. 3.35: Musical Interlude.

AFTERNOON SESSION.

3.38: Description of Welter Handicap, 7furl., 65yds., Werribee Cup meeting, by Eric Welch. 3.15: Paul Jeacle and His Band—“Egyptian Echoes” (Black). 3.21: Chas. O’Mara, entertainer—Irish songs and stories. 3.28: Bruce White—piano solo, selected. 3.31: Ted Nelson, entertainer at the piano—songs and novelties. 3.38: Description of the “Golden Old” 6furlongs, Werribee Cup meeting, by Eric Welch. 3.45: Paul Jeacle and His Band—“Slow Gee Gee” (Bee). “She’s Funny That Way” (Whitting). 3.53: Chas. O’Mara, entertainer—Irish songs and stories. 4.0: Horace Sheehan—trumpet solo, selected. 4.4: Ted Nelson—request number. 4.8: Description of Manor Plate, 6 furlongs, Werribee Cup meeting, by Eric Welch. 4.15: Paul Jeacle and His Band—popular melodies. 4.21: Ted Nelson—songs and novelties at the piano. 4.28: Paul Jeacle and His Band—“Just Across the Street From Heaven” (Newman). 4.37: Description of Manor Purse, 6 furlongs, Werribee Cup meeting, by Eric Welch. 4.46: Close down.

THE CHILDREN’S CORNER.

5.45: “Little Miss Kookaburra” and Miss Gladys E. Horlock.

EVENING SESSION.

6.40: How to attain and retain good health. 6.55: Musical Interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman session. 7.25: Technical talks for mechanics—High-speed Tool Steel. Prof. J. Nelli Greenwood, D.Sc. 7.40: News service. 7.45: The Things We Drink—Spirits. Dr. Lottus Hillis. D.Sc. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

ARTISTIC.

8.0: An hour of music by the masters, arranged by Professor Bernard Heinz.

FROM THE SUBLIME TO—

9.0: The Ever-Bright Revue Company present a burlesque sketch, “The Nonsensical Navvies.” Scene, the construction camp at Wiregrass Dam.

SOMETHING MORE SERIOUS.

9.30: Salvation Army Band—“Jubilation” (arr. Coles). 9.38: “The Sacred Heart,” with full chorus and National Broadcasters’ Orchestra. 9.44: Madeline Knight, contralto. 9.47: Salvation Army Band—“Elliah” (Mendelssohn). 9.55: “In a Monastery Garden,” with full chorus and National Broadcasting Orchestra.

ANOTHER MERRY DASH.

10.0: Jock Kerr, Scotch comedian—“The Scottish Delegation.” 10.6: John Howard, baritone—“Quodlibet” (Simons). 10.9: Hugh and Edith Huxham, duet—“Out Little Nest on the Tree Top.” 10.12: National Broadcasting Orchestra, selection from “Lilac Time” (Clutsum).

NEWS SESSION.

10.20: Meteorological information; British official wireless news; items of interest.

DANCE MUSIC.

10.30: “The Rex” Dance Band. 11.10: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

AFTERNOON SESSION.

2.0: Orchestral—Paul Whiteman’s Orchestra. 2.4: Comedian—Johnny Marvin. 2.8: Banjoists—Reiser’s Banjo Boys. 2.12: Entertainer—Franklin Baker. 2.16: Orchestral—Paul Whiteman’s Orchestra. 2.20: Comedian—Gene Austin. 2.24: Piano—Victor Arden. 2.30: Soprano—Evelyn Strotz. 2.34: Cello—Pablo Casals. 2.38: Duet—Olara Butt and Kennerley Rumford. 2.42: Orchestral—Chicago Symphony Orchestra. 2.46: Soprano—Evelyn Scovely. 2.50: Band—His Majesty’s Coldstream Guards’ Band. 2.54: Duet—Smirnoff and Maria Davidoff. 2.58: Orchestral—Chicago Symphony Orchestra. 3.0: Request numbers.

MAINLY FOR WOMEN.

3.20: The Pre-school Child—are you valuing the most of your child’s intelligence? Miss M. Lush. 3.35: Musical Interlude. 3.40: Some recent art exhibitions—Miss Stephanie Taylor. 3.45: Musical Interlude. 4.0: Home Life in Other Countries—Suburban Towns in U.S.A. Dr. Mclellie Greig (New York). 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

Evening Session.

6.15: Dinner music, supplied by the Studio Light Orchestra. 7.32: Sporting results. 7.35: Lateau musical releases. 8.0: Chimes.

NIGHT SESSION.

8.1: Why We Behave As Human Beings—Concentration, Prof. A. J. Gunn, M.A., B.Sc., Ph.D.

8.15: Salvation Army Band—March, “Red Shield” (Gomm). Selection, “Precious Thoughts” (arr. Coles).

8.25: R. Nicholson, baritone—“The Wind Is Blind”

(Countess of Galloway), “Why Shouldn’t I?” (Kennedy-Russell).

8.38: A comedy sketch—“Make It Two.” The Man, Thomas Leslie. The Friend, Gerald Heathcote. 8.53: Salvation Army Band—(a) Cornet solo, with band accompaniment, “Silver Threads” (arr. Twitcam); (b) “Song of Hope.”

9.0: Russell Callow, tenor, and R. Nicholson, baritone—duets, “The Battle Eve,” “Sylvia” (Speaks), (by request).

9.7: A.B.C. String Quartette—Quartette (Mozart). 9.17: Russell Callow, tenor—“O, Padatido” (Feyerher).

9.31: Edouard Lambert, violin—“Gypsy Airs” (Sarasate).

9.30: Jock Kerr, Scotch comedian, will entertain. 9.38: The Hilo Duo will entertain in Hawaiian melodies.

9.46: Sylvia Nelson. 9.54: Russell Callow, tenor, and R. Nicholson, baritone—“O, Lovely Night” (Landon Ronald), “The Two Beggars.”

10.0: Weather, news.

10.10: A mystery story—“The Hypnotist.” J. Howlett Ross.

10.25: The Hilo Duo—Hawaiian melodies.

10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

For day sessions see Friday.

NIGHT SESSION.

8.0: The Studio Dance Orchestra—Dance music. 8.10: Harry Gruden and Mark Solomon—Entertainers.

8.20: Mrs. Charles Willey (contralto)—“Barbara Allen” (Old English).

8.25: The Studio Dance Orchestra—Dance music.

8.35: Monument and Harrow—An argument.

8.50: The Studio Dance Orchestra—Dance music.

9.0: Metropolitan weather forecast; movements of lighthouse steamers.

9.5: Daisy McDowell and Mrs. A. F. Stoddart—Vocal duet, “I Sing Because I Love To Sing” (Pin-suit).

9.10: The Studio Dance Orchestra—Dance music.

9.20: Mrs. Charles Willey, contralto—“Perhaps.”

9.25: The Studio Dance Orchestra—Dance music.

9.30: Harry Borradale—Entertainer.

9.45: Studio Dance Orchestra—Dance music.

9.55: Daisy McDowell and Mrs. A. F. Stoddart—Vocal duet, “The Wind and the Harp” (Olover).

10.0: News; weather.

10.15: The Studio Dance Orchestra.

11.0: Close down.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION—See Friday.

AFTERNOON SESSION—See Friday.

EVENING SESSION.

5.30: Vocal championship. 6.1: Chimes. 6.15: Children’s request numbers.

6.30: Dinner session. 7.0: Chimes. 7.1: Senior Birthday League greetings; 5CL’s sporting service; resume of Werribee race results; B. C. Ward and Co.’s Stock Exchange information; general market reports. 7.20: The 5CL Bluebird Girls’ Club, entertained by “The Bird Lady,” including a talk entitled, “From Sisters to Brothers.” 7.40: Rev. E. S. Klek, M.A., B.D., will give a talk entitled, “The Trial of Seven Bishops.” 7.55: An address to Boy Scouts.

NIGHT SESSION.

8.5: Mrs. A. C. Williams, Mandolin Band—March, “A Full Hand” (Lincoln), “Mississippi Moon.”

8.20: Luigi Patrucco, Harmonica.

8.30: 5CL vocal championship.

9.0: Operas.

9.1: Weather.

9.2: Overseas grain report.

9.3: Announcements. 9.5: Mrs. A. C. Williams’ Mandolin Band—“Presentation Melody,” “Honey.”

9.15: Luigi Patrucco, harmonica, selected.

9.22: Mrs. A. C. Williams, mandolinist—“Spanish Serenade”; “Meme Gallop.”

9.30: 5CL Vocal championship. 10.0: Mrs. A. C. Williams’ Mandolin Band—“Barcarolle” (Offenbach); “A Precious Little Thing Called Love” (Davis).

10.10: Luigi Patrucco, harmonica, selected.

10.15: News and weather; sporting, including Werribee race results.

10.30: Dance recordings. 11.0: Chimes. Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION, MORNING SESSION, TRADERS’ DEMONSTRATION, MID-DAY SESSION, THE RADIO MATINEE, EARLY EVENING SESSION—See Friday.

EVENING SESSION—A.0: Chimes. 8.1: Weather.

8.2: Ambassadors’ Theatre Symphony Orchestra.

8.5: Les Waldron at the Console of the Grand Organ.

9.12: Peter Roxby, tenor. 8.19: Zlata Kalmikoff, cellist. 8.35: Peter Roxby, tenor. 8.42: Maisie Kerr, popular vocalist. 8.49: Reuben Betts, crooning baritone. 8.56: Maisie Kerr, popular vocalist. 9.3: Weather. 9.4: Stage presentation, broadcast from Ambassadors’ Theatre. 9.25: E. O. Murphy (Dry-blower), the poet of the Golden West. 9.40: Reuben Betts. 9.47: Graham and Manning, entertainers. 10.0: Town Hall Chimes. 10.1: Temple Court Dance Band, conducted by Merv. Lyons. 11.0: Chimes.

Hear the New

JENSEN

Dynamic Auditorium Speaker

DIAMOND BATTERIES

8 WEEKS FRESHER! **45^v** Super Capacity
at all Dealers **20/-**

Agents

REG. ROSE & CO.

DIAMOND DRY CELLS
KEMBLA BLDG., MARGARET ST SYDNEY
Phone 63872

VOC

High Voltage CONDENSERS

are specified in nearly all the Talkies equipment throughout Australia and in England, and used by leading Amateurs and many “A” and “B” Class Broadcasting Stations.

2 mfd. 5000 V.D.C. Test **85/-**

Working Voltage, 2500. **22/6**

2500 V.D.C. Test **14/6**

Working Voltage, 1500. **14/6**

1500 V.D.C. Test **11/3**

Working Voltage, 800. **11/3**

mfd. 5000 V.D.C. Test **47/6**

Working Voltage, 2500. **17/3**

2500 V.D.C. Test **11/3**

Working Voltage, 1500. **11/3**

1500 V.D.C. Test **11/3**

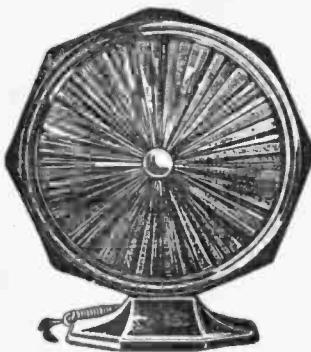
Working Voltage, 800. **11/3**

ALL RADIO DEALERS

BETTER RADIO PARTS MEAN BETTER RESULTS

IF YOU USE inferior parts and materials in your radio you cannot expect to obtain anything approaching high class results. We carry a great number of radio parts and accessories—and each is infinitely superior in its own sphere.

Get in touch with us for full particulars—you will be under no obligation.



SONOCHORDE SPEAKERS

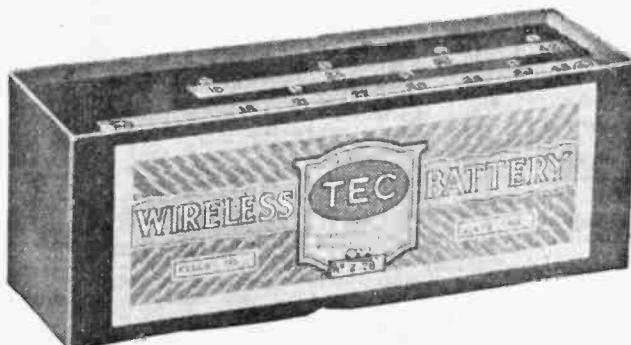
Sonochorde, new and improved Cone Speakers, are equipped with an adjustable unit, recognised as the most highly-developed tone mechanism in radio.

PRICES FROM £4.



BELLING-LEE TERMINALS

Belling-Lee Terminals, as well as improving the appearance of any set, permit simplicity, safety, and ease of connection. Discriminating buyers always ask for Belling-Lee Terminals.



Above is illustrated the Z28 Standard capacity T.E.C. British Radio Battery. T.E.C. Batteries are obtainable in various sizes—STANDARD CAPACITY, 12/6; Nos. 1 and 3, HEAVY DUTY, 23/6; and No. 2, EXTRA HEAVY DUTY, 32/6.

W. G. WATSON & Co. Ltd.
279 CLARENCE ST., (near Town Hall), SYDNEY.

*Phone: M4331 (5 lines)

29 Hunter Street, Newcastle; 200 Queen Street, Melbourne; 28 Coronadel Place, Adelaide; 931a Hay Street, Perth.
Queensland Representatives: INTERCOLONIAL HIRING CO., Ann Street, Brisbane.

Local Programmes, Thursday, October 24

2FC

Australian Broadcasting Company, Ltd., Market St.,
Sydney (Wavelength, 451 Metres).

EARLY SESSION—7 to 8.15 a.m.
 7.0 "Big Ben" and meteorological information for the man on the land.
 7.3 This morning's news from the "Sydney Morning Herald."
 7.8 Austradio Musical Reproduction.
 7.45 Mails and shipping.
 7.48 What's on to-day?
 7.50 Children's Birthday Calls.
 8.0 Music from the Studio.
 8.15 Close.

MORNING SESSION—10.30 a.m. to 12.30 p.m.

10.30 Announcements.
 10.32 A.B.C. Racing Observer.
 10.45 Price Dunlavy at the Grand Organ.
 11.00 Household helps: Domestic notes by Miss Ruth Furst.
 11.10 Cables (copyright)—"Sun-Herald" and A.P.A. News Service.
 11.15 Morning devotion.
 11.30 Austradio Musical Reproduction.
 11.53 British Official Wireless Press.
 12.00 "Big Ben" Stock Exchange and metal quotations.

12.51 A morning story.

12.20 Midday weather forecast and weather synopsis. Special produce market session for the man on the land supplied by the State Marketing Board.

12.30 Close.

THE LUNCH HOUR—1 to 2.30 p.m.

1.0 Lunch hour music.
 2.0 Stock Exchange, second call.

2.2 A glance at the afternoon "Sun" and "News."

2.7 To-day's acceptances by the A.B.C. Racing Observer.

2.17 C. N. Baeyertz—"Spoken English."

2.30 The 2FC Instrumental Trio.

2.42 Josephine Lee, soprano—

(a) "The Wren" (Lehmann).

(b) "Daffodil Gold" (Hodgson).

2.49 Neil Gale, pianist—

(a) "Two Preludes" (Chopin).

(b) "Study A flat Major" (Chopin).

(c) "Nocturne F Sharp" (Chopin).

2.56 The 2FC Instrumental Trio.

3.0 From the basement of the Town Hall.

Official opening of the Mothercraft Exhibition by Lady de Chair.

3.30 From the Studio: Rita Graham, violinist—

(a) "Rondino on a Theme by Beethoven" (Kreisler).

(b) Air Melodieux (Bohm).

3.37 The 2FC Instrumental Trio.

3.47 Josephine Lee, soprano—

(a) "Blackbird's Song" (Scott).

(b) "By the Waters of Minnetonka" (Lleurance).

3.52 Neil Gale, pianist—

(a) "Valse Chromatique" (Godard).

(b) "Waltz E Minor" (Chopin).

3.59 Two short stories by Rose Antill de Warren—"Unseeing Eyes" and "An Episode of Anzac Day."

4.14 Rita Graham, violinist—

(a) "Tambourin Chinois" (Kreisler).

(b) "Romance in G" (Beethoven).

4.21 The 2FC Instrumental Trio.

4.28 Stock Exchange, third call.

4.30 Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

5.45 Kiddies' "Goodnight" Stories told by Aunt Goodie.

6.45 Dinner hour music.

7.30 A.B.C. Sporting Service.

7.37 Special country session. Stock Exchange resume. Markets. Weather forecast. Late news from the "Sun" and "News." Truck bookings.

7.58 To-night's programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

The sharply contrasting programme through 2FC on a Thursday night is proving very popular. Here is a medley of Classic music, vaudeville, drama, and popular songs to meet the universal need.

8.0 Clement Q. Williams, baritone—Trio accompaniment—

(a) "Bells" (Hurlstone).

(b) "Blossoms" (Hurlstone).

(c) "Darkness" (Hurlstone).

(d) "Morning" (Hurlstone).

8.20 Bert Gilbert and Goodie Reeve in something different.
 8.40 Con Moreni and partner in a vaudeville vignette—

(a) "Sunshine" (Berlin).

(b) "Days Gone By."

(c) "Oh, Amelia" (Graham and Croft).

9.0 The country man's weather session—

(a) New South Wales forecasts.

(b) Inter-State weather synopses.

9.2 Scott Alexander and company will produce a powerful dramatic episode entitled "Napoleon at Waterloo," specially written for radio by Codrington Ball. Scene: "La Belle Alliance Farm."

9.20 The Peerless Four in melodies of the Sunny South—

(a) "Reception Medley."

(b) "Poor Old Joe."

(c) "In the Evening by the Moonlight."

(d) "Carry Me Back to Old Virginia."

(e) "Old Kentucky Home."

(f) "I've Gwine Back to Dixie."

9.40 Pianoforte recital arranged by Iris de Calros Rego—

(a) "Loreley" (Liszt).

(b) "In the Woods" (Liszt).

(c) "Whims" (Schumann).

(d) "Etude" (Chopin).

(e) "Gardens in the Rain" (Debussy).

(f) "Caprice" (Schubert).

10.0 From the Hotel Australia—Cec. Morrison's Dance Band.

10.15 From the Studio—Announcements.

Late official weather forecast.

10.20 From the Hotel Australia—Cec. Morrison's Dance Band.

11.30 Close. National Anthem.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 333 Metres).

OPENING SESSION—8.15 to 11 a.m.

8.15 G.P.O. chimes and announcements.

8.16 Music for every mood.

8.40 Meteorological data for the country.

8.45 Mails and shipping information.

8.50 Memory melodies.

9.0 This morning's story.

9.30 A musical interlude.

9.40 British Official Wireless Press.

9.45 New music.

10.5 News from "The Sydney Morning Herald."

10.10 Austradio musical reproduction.

10.40 The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.

11.0 G.P.O. chimes. Close down.

MID-DAY SESSION—12 noon to 2.30 p.m.

12.0 G.P.O. chimes. Announcements.

12.2 The National Broadcasting Orchestra.

1.0 Afternoon news from "The Sun" and "The Evening News."

1.5 Studio music.

1.15 Women's interest talk—Mrs. Mildred Muscio, "Child Endowment."

1.30 Austradio musical reproduction.

2.0 J. Knight Barnett at the Wurlitzer.

2.12 Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

2.30 Business efficiency talk—Miss Jean Armstrong, "Wherein Lies the Lure."

2.45 The Magic Carpet series—F. H. Raward, "Cologne—Yesterday and To-day."

3.0 The latest dance music.

3.12 Ruby Leslie, soprano—

(a) "Cuckoo Calls" (Brake).

(b) "Juno Music" (Trent).

3.19 Melodies of yesterday.

3.30 Doris Lascelles, monologues—

"The Flirt" (Haynes).

3.37 Hilda Grace, novelty pianist—

(a) "Waltz in Blue" (Banker).

(b) "Nervous Nuckles" (Elholm).

3.44 Radio Rhythm.

3.55 Ruby Lesley, soprano—

(a) "Sunflakes" (Montague Phillips).

(b) "A Brown Bird Singing" (Wood).

4.2 Hilda Grace, novelty pianist—

(a) "In the Spotlight" (Jarnagin).

(b) "The Squirrel" (Elliott Smith).

4.9 A new song.

4.19 Doris Lascelles, monologues—

"How Ruby Played" (Bagby).

4.26 Dance numbers.

4.45 The trade hour—demonstration music

5.45 Weather information. Close down.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15 The dinner music session.

6.45 The Younger Set session—Girls' Radio Club, conducted by Miss Gwen Varley.

7.5: A talk on Health Week—Mrs. Jean Gordon, "Care of the Feet."

7.15 The country man's market session—Wool, wheat, stock, farm produce, fruit and vegetable markets.

7.30 Austradio musical reproduction.

7.55 What's on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.

It is 2BL's turn to-night to feature a radio play, and the offering by Francis Jackson, who is well versed in the art of the microphone, will prove very acceptable.

Through 2FC service the contrasting programme is purposely arranged to suit every taste.

8.0 The Capitol hour.

9.0 Francis Jackson—especially prepared play for broadcasting—"At the Boar's Head, Falstaff and Prince Henry" (Shakespeare).

9.30 Weather information for the man on the land.

9.32 Dorrie Ward, soprano, with trio accompaniment.

9.39 Al Hammert, saxophone solos—

(a) "Dans Orient" (Weidoff).

(b) "Valse Erica" (Weidoff).

9.46 Jack Kinson, baritone, with trio accompaniment—

(a) "The Valley" (Gounod).

(b) "The Limetree" (Schubert).

9.53 2BL Instrumental Trio.

10.0 Dorrie Ward, soprano.

10.7 Al Hammert, saxophone solos—

(a) "The Rosary" (Nevin).

(b) "Valse Nanita" (Weidoff).

10.15 Jack Kinson, baritone, with trio accompaniment—

(a) "The Vulcan's Song" (Gounod).

(b) "Leanin'" (Bennett).

10.25 Late news from "The Sun" and "News." Late weather report.

10.30 "National Anthem. Close.

2GB

Theosophical Broadcasting Station, 29 Bligh St., Sydney (Wavelength, 316 Metres).

10.0 Music. 10.10 Happiness talk, by A. E. Bennett. 10.20 Music. 10.30: Women's session, by Mrs W. J. Stelzer. Address by Mr. T. T. Alkin. 11.30: Music. 11.45: Close down. 1.30: Speeches from Legacy Club.

2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. Address by Miss O'Keefe. 2.50: Movie Know All. 3.0: Labor-saving demonstration, from Buckingham's Ltd. 4.0: Close down. 5.15: Children's session, by Uncle George. 7.0: Music. 7.45: Feature story. 8.0: Miss Mary Neal, contralto. 8.7: Violin solos. 8.15: The New Male Voice Party. 8.30: Mr. Jack Win and Miss Nora Windle, in a humorous sketch.

8.40: Symphony Orchestra. 8.50: Miss Mary Neal, contralto. 9.0: Weather report. 9.3: Address. 9.15: Violin solos. 9.25: The New Male Voice Party. 9.40: Symphony Orchestra.

9.50: Mr. Jack Win and Miss Nora Windle, in a humorous sketch. 10.0: Instrumental music. 10.30: God Save the King.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION

12.30: Request numbers. 1.0: Chimes.

Music. 1.15: Talk on Homemaking, by "Panorama."

1.40: Music and request numbers.

2.30: Close. 4.30: Musical programme.

EVENING SESSION

5.30: Children's Hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes. Request numbers.

7.45: Garden Talk by Mr. S. H. Hunt. 8.0: Band Recital. 9.0: Chimes. Comments on Foreign Affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers.

10.30: Close.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra, Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION, 7.15 to 8.30.

MIDDAY SESSION, 11.30 to 12.30.

AFTERNOON SESSION, 1.0 to 2.30.

EVENING SESSION, 7.15 to 10.15.

(For 2KY see page 58.)

For Quick Service,
Ring
B2409,
B2410.

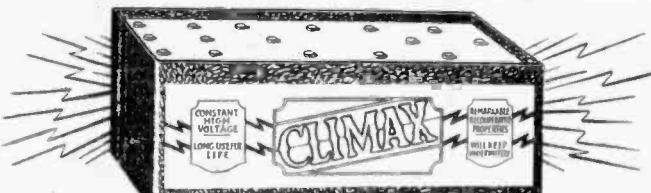


Territory open for CLIMAX BATTERIES.

"Tune in" on these Quick Sellers!

'Phone B2409-10—Write or ask us to Call!

Philips Products.
Climax Batteries.
Ever-Ready Batteries.
Columbia Batteries.
Radiotron Valves.
Mullard Valves.
Cosser Valves.
Raytheon Valves.
Amplion Speakers.
Airaone Products.
Radiokeen Products.
Wetless Products.
Ferranti Products.
Pollock Products.



CLIMAX—The Battery with Long Life!

30 Volts, 8/-.
45 Volts, 12/-.
All Sizes for Torches.

45-V. Heavy Duty Series now here.
Climax "C" Batteries. 24/-
9 Volts, 4/-.
15 Volts, 6/-.

60 Volts, 16/-.
90 Volts, 24/-.
Give your Set more power with a CLIMAX.

T.C.C. Condensers.
Grodan Products.
Advance Products.
Pilot Products.
Formo Products.
Magnavox Products.
Jackson Condensers.
Emmeo Products.
Essany Products.
Jensen Dynamic Speakers.
All other standard Radio lines.

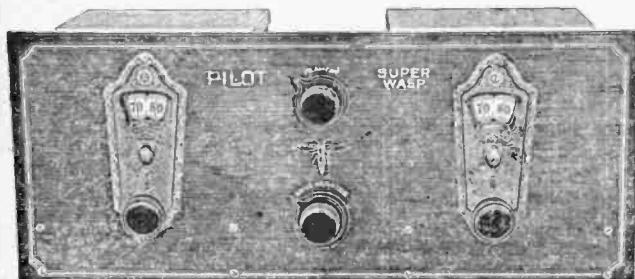
'Phone:
B2409.
B2410.

FOX & MAC GILLYCUDDY LIMITED

WHOLESALE RADIO DEALERS, MERINO HOUSE, 57 YORK STREET, SYDNEY, N.S.W.

HARRINGTONS announce the Sensational ALL-STATIONS PILOT SUPER-WASP

4 Valve Screen Grid (14-500 Metres)



AMERICA—HOLLAND—ITALY—
ENGLAND—JAPAN—FRANCE

Possible at Loud Speaker Strength

£18/10/- COMPLETE

Harringtons LTD

(Est. 40 years.)

Photo, Radio, and Cine Merchants.

386 GEORGE STREET, SYDNEY.

Branches all States and New Zealand.

Phone. MAG 6001.

The SUPER-WASP, now introduced to Australia for the first time, is the best all-round Double Duty receiver for short and long waves. Its points of superiority include—(1), increased selectivity, made possible by the tuned screen grid R. F. stage—(2), universal wave length range—(3), completely shielded—(4), easily wired and assembled from kit of parts—(5), inexpensive and—(6), ability to bring in short wave stations better than all previous receivers.

Build a Super-wasp and experience the greatest of all Radio thrills—hearing foreign stations. All necessary parts are furnished with the kit, and can be assembled and wired in one evening. Tuning tricks are easy to learn. When you are tired of your local programme, choose the foreign station you want to hear, and get it at good loud speaker strength. Call or write to Harringtons Ltd. for full details of the Super-wasp—Learn how simple it is to make this amazing receiver.

RADIAIR

All Electric Sets, Screen-grid Sets for Country
Daylight Reception.
Amplifiers for Private Dances, etc.
Repairs and Re-modelling.

THE RADIAIR WIRELESS CO.,
114 Castlereagh St., near Market St.
'Phones, M2837. Ryde 978 (night).

FOR SALE

Original Midget Screened Grid Short Wave
Receiver, described by Mr. D. B. Knock, formerly
Technical Editor, "Wireless Weekly,"
and used by Mr. H. Russet Crane for International
Telephony Reception.

Celebrated for all overseas stations.

ENQUIRIES TO V.K.E.N.O., 102 Nelson's Bay
Road, Bronte.

"EXELTRON"

B ELIMINATORS £3 15 0
A CHARGERS £3 0 0
A.B.C. POWER PACKS £5 10 0

Usually sold £6 to £12—Sold direct from
factory to you; hence these low prices. Fully
guaranteed. 12 months. Installed Free. Easy
Terms. Mail Order, add Carriage. EXELTRON
ELECTRICS, 31 Oxford Street, Sydney.

METAL CABINETS

Finished in Attractive Designs.

Made by

HARRY CRABB, LTD.,
281 RILEY STREET CITY.
'Phone, FL1887.

Tuesday, October 22
(Continued from Page 50.)

6WF

Australian Broadcasting Company, Ltd., Wellington
Street, Perth (Wavelength, 135 Metres).

EARLY MORNING SESSION, MORNING SESSION,
TRADERS' DEMONSTRATION, MID-DAY SESSION,
THE RADIO MATINEE, EARLY EVENING SESSION
—See Friday.

EVENING SESSION.—8.0: Chimes. 8.1: Weather
8.2: Perth City Band. 9.0: Chimes. 9.1: Weather
9.2: Books reviewed. "Wise and Otherwise" by
Basil Kirke. 9.17: Lionel Carter, basso. 9.24:
Thelma Nelli, soprano. 9.31: Lionel Carter, basso.
9.38: David Lyle, tenor. 9.45: Thelma Nelli, soprano.
9.52: David Lyle, tenor. 10.0: Chimes. 10.2: Temple
Court Dance Band. 11.0: Close down.

Wednesday, October 23
(Continued from page 52.)

2KY

Trades and Labor Council, Goulburn St., Sydney
(Wavelength, 130 Metres).

MORNING SESSION and CHILDREN'S
SESSION.—See Friday. EVENING SESSION.

—7.0: Musical interlude. 7.15: Sporting feature; complete review of to-day's racing, Mr. Geo. A. Davis. 7.40: Health feature. 8.0: Hawaiian steel guitar selections. 8.15: Al Rosenberg, novelty pianist. 8.30: Banjo solos, Master Harry Weir. 8.45: Contralto solos, Miss Rotter. 9.10: Sporting feature, presented by Tooth and Co. Ltd., Kent Brewery, from Sydney Stadium, full description of main 15-round event from the ringside. 9.55: Result of main 15-round event. 10.0: Closing announcements.

Thursday, October 24
(Continued from page 56.)

2KY

Trades and Labor Council, Goulburn St., Sydney
(Wavelength, 280 Metres).

MORNING SESSION and CHILDREN'S
SESSION.—See Friday. EVENING SESSION.

7.0: Musical interlude. 7.5: Birthday calls.
7.15: Request numbers. 7.30: Hawaiian steel
guitar selections. 7.45: Humorous interlude.
8.0: Orchestral selections. 8.10: Tenor solos,
Mr. G. Mason. 8.17: A humorous interlude.
8.30: Frederick Holt presents a recital of
Australian compositions, with musical and
vocal illustrations. 8.45: Selection of humor-
ous records. 9.10: Request numbers. 9.40:
Continue record recital. 10.0: Closing an-
nouncements.

Interstate Programmes, Thurs., Oct. 24**3LO**

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 311 Metres).

EARLY MORNING SESSION.

See Friday.

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

EDUCATIONAL SESSION.

2.0: Great Australians—Richard Seddon, Mr. J. Howlett Ross. 2.15: Musical interlude. 2.20: Music Explained and Illustrated, Dr. A. E. Floyd, F.R.C.O. 2.35: Musical interlude. 2.40: Romantic Stories of Australia's Early Days—Captain Donald MacLean. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: Victory Brass Band—March, "The Vedette" Overture. The Bouquet. 3.8: Whited Collier, tenor—We Know, Will You Understand? (Henry), "Kiss Me Good-bye" (Thompson). 3.15: "The Empire" Trio—Vocal—God Touched the Rose" (Brown), piano—(Chaminade), violin, "Hungarian Dance" (Koraybali), vocal, "Absence" (Easthope Martin). 3.30: Victory Brass Band—Waltz, "Estudiantina." 3.38: Jack Lowe, comedian—Swistle's Ness Milk." 3.46: Victory Brass Band—Corner solo. 3.50: W. Collier, tenor—"I'll Sing These Songs of Araby" (Clay), "To a Miniature" (Brahe). 3.57: Victory Brass Band—Selection. Old-time songs. 4.5: "The Empre" Trio—Vocal—By the Rivers, "Minuetto" (Liszt), piano—(Purcell), (Chaminade), violin, "The Rosary" (arr. by Kreisler), vocal, "Elephant" (Massenet). 4.15: Jack Lowe, comedian—"My Girl's a High-born Lady" (special request from Caulfield Hospital). 4.22: Victory Brass Band—Trombone solo, "The Parachute," A Thorne; fox-trot, "The Wedding of the Painted Doll." 4.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Bobby Bluegum" and "Clever Clarice."

EVENING SESSION.

6.35: Musical interlude. 6.40: Let's Talk About Our Animals—Protection of Birds. Mr. J. D. Jennings, B.A.Sc. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: For the man on the land—Garden Insect Pests. Mr. C. French. 7.40: News service. 7.45: Novels and Authors of To-day—Mr. A. E. McMillen.

NIGHT SESSION.

8.0: Elsie Stewart and Victor Brooks will entertain with popular numbers.

8.15: You will hear the outstanding personality of the week.

OUR DANCE NIGHT.

8.30: Paul Jeacle and His Band—dance numbers. 8.40: Jane Douglas, soprano—"Sunblaze" (Dodge). 8.43: Paul Jeacle and His Band—dance music. 8.53: Etta Bernard, contralto—"Tip Toe" (Carew). 8.56: Paul Jeacle and His Band—dance numbers. 9.6: Syd Hollister, entertainer—"A Little Non-sense."

9.10: Paul Jeacle and His Band—dance numbers. 9.20: Jane Douglas, soprano—"Gossamer" (Dodge). 9.23: Paul Jeacle and His Band—dance numbers. 9.32: Etta Bernard, contralto—"Follow the Fairies" (Baumer).

9.38: Paul Jeacle and His Band—dance numbers. 9.46: Syd Hollister will entertain.

9.50: Paul Jeacle and His Band—dance numbers. 10.0: British official wireless news; items of interest; meteorological information.

10.15: Paul Jeacle and His Band—dance numbers. 10.25: Jane Douglas, soprano—"Two Souls" (Re-sier).

10.28: Paul Jeacle and His Band—dance numbers. 10.38: Syd Hollister will entertain.

10.42: Paul Jeacle and His Band—dance numbers. 10.45: Etta Bernard, contralto—"My Heart Is Singing" (Sans Souci).

10.48: Paul Jeacle and His Band—dance numbers. 10.58: Jane Douglas, soprano—"Piper June" (Carew).

11.1: Paul Jeacle and His Band—selected and requested items.

11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St.,
Melbourne (Wavelength, 484 Metres).

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

AFTERNOON SESSION.

2.1: Band music—Band of the Royal Air Force. 2.4: Choral—The Cloister Choir. 2.8: Violin—Manuelle. 2.12: Soprano—Violin Essex. 2.16: Band—Band of the Royal Air Force. 2.20: Entertainer—George Rose. 2.24: Dance music—Corona Dance Band. 2.28: Baritone—Leu Maurice. 2.32: Band music—Band of the Royal Air Force. 2.36: Choral—The Cloister Choir. 2.40: Piano—Victor Lane, Adam Carroll, and Edgar Fairchild. 2.50: Entertainer—George Rose. 2.54: Soprano—Violin Essex. 2.58: Orchestral—Regal Orchestra. 3.2: Request numbers.

MAINLY FOR WOMEN.

3.20: A Quiet Morning at Home—Miss Hattie Knight. 3.35: Musical interlude. 3.40: Food and Cookery—Gas Cooking, Miss E. Noble. 3.55: Musical interlude. 4.0: Your Health and Appearance—Miss Evelyn N. Ellis. Traders' Demonstration Session. 4.15: Musical reproduction. 4.45: Svensson, transmitted from St. Paul's Cathedral. 5.30: Weather. 5.45: Close.

EVENING SESSION.

6.15: Dinner music supplied by the Studio Light Orchestra. 7.30: What's on the air to-night? 7.32: Sporting results; Acceptances and barrier positions for the Moonee Valley Gold Cup meeting on Saturday, October 26. 7.35: Latest musical releases.

NIGHT SESSION.

8.0: A special reproduction of "The Messiah" (Handel), by Sir Thomas Beecham and Orchestra. 10.20: Weather, news. 10.30: God Save the King.

4QC

Queensland Government Radio Service, Brisbane
(Wavelength, 385 Metres).

For day sessions see Friday.

NIGHT SESSION.**A PROGRAMME FOR MOTHER.**

To-night's programme will comprise old songs and music—an entertainment which would have delighted "Mother" years ago.

8.0: The Studio Orchestra—Characteristic, "Uncle Tom's Cabin" (Tobani).

8.7: Double Male Quartette—"Old Kentucky Home" (Foster), "Tenting on the Old Camp Ground."

8.15: C. Rice, tenor—"Absent" (Metcalfe).

8.19: Double Quartette—"The Vacant Chair," "When There's Love at Home."

8.27: The Studio Orchestra—Waltz, "Over the Waves" (Ross).

8.32: J. P. Cornwell, bass—"Asleep in the Deep."

8.37: Double Quartette—"Silver Threads Among the Gold."

8.41: J. Tyson and his Accordion.

8.46: Fred Crane, baritone—"Rocked in the Cradle of the Deep" (Knight).

8.50: Double Quartette—"Genevieve" (soloist, H. Oliver)—"With Dat Cabin So Sweet" (soloist, J. P. Cornwell)—"Carry Me Back to Old Virginny."

9.0: Metropolitan Weather forecast.

9.2: George Williamson, tenor—"The Death of Nelson" (Brahms).

9.7: Double Quartette—"Gwine to Run All Night," "Just Before the Battle, Mother" (soloist, J. Martin). "Oh, Dear, What Can the Matter Be?"

9.20: The Studio Orchestra—"A Ballad Salad" (Aston).

9.25: George Williamson, tenor—"Sally Horner."

9.30: J. Tyson and his Accordion.

9.35: Francis Lane, cello—"The Song That Reached My Heart" (Jordan).

9.40: James Martin, tenor—"Let Me Like a Soldier Fall."

9.45: Double Quartette—"Riding on a Load of Hay," "Hear Dem Bells," "Gone Where De Good Niggers Go."

9.55: The Studio Orchestra and Double Quartette—"Auld Lang Syne."

10.0: News. Close down.

5CL

Central Broadcasters, Ltd., 111 Hindmarsh Square, Adelaide (Wavelength, 490 Metres).

MORNING SESSION.—See Friday.

AFTERNOON SESSION.—See Friday.

EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings. 6.15: Request numbers. 6.30: Dinner session. 7.0: Chimes.

7.1: Senior Birthday League greetings; 5CL's sporting service, including athletic gossip and motor-cycling notes; Stock Exchange; general market reports. 7.20: Dr. G. H. Wright, M.A., will continue his series of Literature talks. 7.35: Mr. W. F. Murch, secretary of Boy Work, Y.M.C.A., will speak 7.45: Mr. A. M. Whittenbury—Hints to Poultry Breeders.

NIGHT SESSION.

8.0: Chimes.

8.10: A concert entitled, "Youthful Days." Characters: Father, Don Wildsmith; mother, Bessie Franklin; son, Jack Burgess; schoolmaster, Walter Denby; school chums, The Madrigals; prefect, Stan Brokeisha; schoolmistress, Lizette Foglia; friend of the son, Guido Giacchino.

9.0: Chimes.

9.1: Weather.

9.3: Announcements.

9.5: Concert, entitled, "Youthful Days" (continued).

10.15: "The Advertiser" general news service; British Official Wireless News; meteorological information; 5CL's sporting service.

10.29: Our good-night thought.

10.30: Dance music.

11.0: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 133 Metres).

EARLY MORNING SESSION, MORNING SESSION,
TRADERS' DEMONSTRATION, MID-DAY SESSION,
THE RADIO MATINEE, EARLY EVENING SESSION
—See Friday.

EVENING PROGRAMME.—8.0: Chimes. 8.1: Weather. 8.2: Instrumental Trio. 8.17: Talkie short.

8.32: Marjorie Hodgson, sketch. 8.42: Herbert Snelling, baritone. 8.49: Harold Newton, violinist. 8.52: Herbert Snelling, baritone. Town Hall chimes.

9.1: Weather report. 9.2: A.B.C. Instruments Trio.

9.17: Marjorie Hodgson, sketch. 9.27: A.B.C. Instruments.

9.49: Audrey Dean, pianist. 9.56: Grace Digby-Leach, contralto. 10.5: Temple Court Dance Band.

11.0: Chimes. Close.

— TRADE IT IN —

Still time to bring in that old, discordant speaker, and replace it with a new, Modern Cone Speaker—the Brandes' Ellipticon, previously selling at £6/10/- and now, by the Wireless Shop, at—

59/-	Less the Trade-in Value of Your Present Speaker.	(Say)	Leaving £1'5/-
-------------	--	-------	--------------------------

34/-	In Cash.
-------------	----------

There are Only a Few Left at This Price, and to Clear them Out (to Make Room for Stock). We Will Offer a MINIMUM ALLOWANCE ON YOUR OLD SPEAKER OF £1/-. This Offer Can't be Repeated When Present Stocks are Gone. Bring in Your Old Speaker, or Write Us, and Let us Give You an Estimate for Your Old Speaker.

CALL AND SEE AND HEAR THE NEW ONES.

THERE ARE OTHER ATTRACTIVE LINES, TOO

Bakelite-end .00025 Variable Condensers (suitable for reaction) 2/6
Hard-rubber Panel, 1-8in. thickness, 7in. wide, at 2/6 per foot.
Push-Pull Switches, Rotary Switches, Coil Mounts, per pair, all at 6d.

30 Henry 100 Mil. Chokes	10/6
Power Transformers for B Eliminators, 250 volts, 75 mils., filament winding to suit valve	25/-
2in., 2½in. Bakelite Tube 2d per inch; 3in., 3d per inch. (Not compressed cardboard—high quality Bakelite).	

Wallace B Eliminator Kit (Not a Bell-ringer Type), Only 59/6.

Wallace B and C Kit—Gives Power Plus Purity—95/-. (Convertible to ABC Power Pack for Further 10/6).
Diagrams Free with "Electrified Radio" (Making Your Set All-Electric), 1/-. Posted, 1/3.

EVERYTHING FOR RADIO

"THE WIRELESS SHOP"

*Same Day Service
for
Country Clients*

*Money Back
Guarantee*

Established 8 years.

Miss F. V. Wallace, 6 Royal Arcade, Sydney.
THE OLDEST RADIO FIRM IN TOWN

*Phone MA5543.

Two Doors from George Street, opp. Q.V. Markets.

SPECIAL ANNOUNCEMENT

SUPERHETERODYNE RECEIVERS

FOR THE INFORMATION of manufacturers, dealers, and users of Superheterodyne radio receiving sets, we would state that the well known principle of double detection employed in these receiving sets is covered by Commonwealth Patent No. 16,552/20, and is owned and controlled by Standard Telephones and Cables (Australasia), Limited.

A licence under this patent is therefore required by all manufacturers, dealers, and users of Superheterodyne radio receiving sets, full information regarding which will be supplied on application to

Standard Telephones & Cables (A/sia.) Ltd.

82/96 MYRTLE STREET, CHIPPENDALE, SYDNEY

Tel., M2336-7-8

HALF PRICE BARGAINS

Genuine Varta rechargeable "B" Batteries 6d per volt. In 10-volt glass case units—Don't miss these!

Good quality Variable Condensers, .00035 and .0005, a few left	3'6
4in. non-slip, high grade, slow motion Dials	2'2
3in. and 4in. Black Bakelite engraved Dials	1'=

Genuine Econotron four volt, dry cell type (.06) valves U.X. base, 4/10.
The latest 2amp. dry metallic Rectifiers, Now available, price 22/6.

The famous Philips Trickle Charger keeps your "A" Battery always in action, was £3/10/-,
NOW £2/15/-

*And dozens of other bargains to interest everyone as well as the finest selection
of quality parts obtainable.*

COUNTRY RESIDENTS — YOUR ORDERS SENT SAME DAY

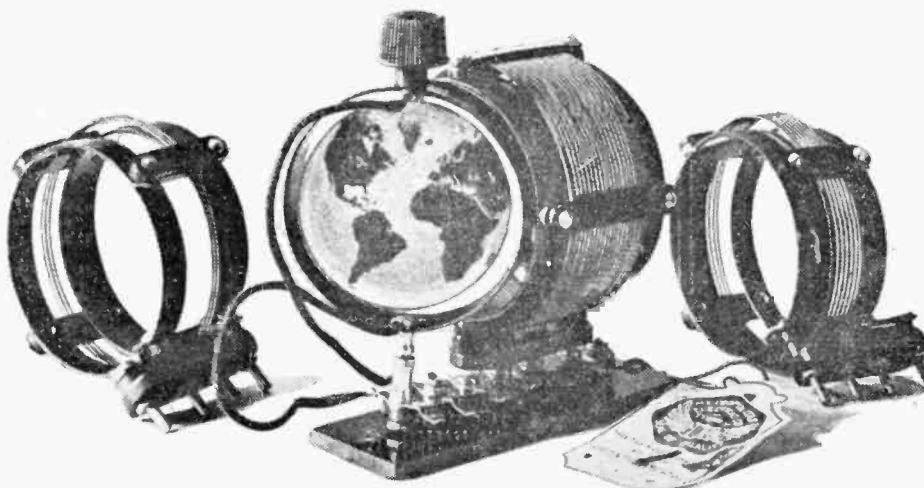
QUALITY

Economic Radio Stores

SERVICE

PARRAMATTA 126A PITT ST. 25 ROYAL ARCADE NEWCASTLE

Radiokes Short Wave Tuner Kit



PRICE COMPLETE AS SHOWN. Three interchangeable Units and Mounting Base, 55/- per Kit.

This famous short wave Tuner Kit by Radiokes represents the height of efficiency as applied to coil construction. For short wave work, the lowest possible losses are desirable; for this reason Radiokes "Low Wavers" are constructed with the least possible material in the magnetic field.

Heavy and solid formers of insulating composition within the coil field tend to absorb the valuable energy which should be carefully conserved. The obvious way to cut these losses is to cut out all undesirable material from the construction.

These three coils, as shown above, cover completely the entire frequency spectrum between 15 and 130 metres, when tuned by standard short wave condenser of .00015 mf., and this allows smooth and easy tuning. This Kit is highly finished and highly efficient, and can be seen at your favourite dealers, or at

Metropolitan Electric Co. Ltd., Radiokes House, 126 Sussex Street, Sydney.

Making a Frame Aerial

P.T.G. (Epping): "Please give details for making a frame aerial capable of tuning up to 500 metres using four foot sides. The receiver is to be used during the forthcoming holidays, and the loop will be mounted on top of the car or made so that it will fold."

Answer: Cut four strips of light, clean wood each 4 feet long and 4 inches wide. On each strip, half an inch from one edge, cut a V groove the whole length in a diagonal manner, so that the groove starts at the first half-inch mark and finishes at the second, at the other end of the strip. This will leave you half an inch spare edge on the other side of the strip. Mount the four strips together with small hinges or brackets (place the brackets inside the angles). In the form of a square. Wind full with light rubber covered flexible wire. There will be six turns in all. The loop should be tuned with a .0005 mfd variable condenser.

C.E. (Victoria): "Would you please tell me what R7, etc., means?"

Answer: It was a method of advising another station the strength at which they are being received by another station. The R represents the words "I am receiving you at volume No. —" and the numbers (from 1 to 10) show the strength at which the signal is received. For instance R1 is faint signals, unreadable. R9 is full strength. This method, though suggested by some amateurs, has been displaced by the new "QSA" system. In this later method, approved at the Washington Conference, figures up to 5 are used. QSA means "The strength of your signals are —." When any of these symbols are followed by a query, it asks the question relative to that symbol. For instance, QSA? means "At what strength are you receiving my station?" The reply might be "QSA," which would mean "I am receiving your station at very good volume."

E.G. (Dubbo): Write to Mr. Shaw, 91 Phillip Street, Sydney.

N.M. (Bursville): "Many thanks for your reply to my call, re Browning Drake. As advised, I changed transformer, which you suggested, was faulty, and set is now O.K. Can you tell me anything about tone controls?"

Answer: Volume controls are often incorrectly termed tone controls. The tone control is an apparatus for varying the response to the low or the high audio frequencies. Usually it is some sort of a variable high capacity across one of the transformer windings which serves to bypass the higher frequencies, and so make the reproduction more solid and mellow. Any such control, of course, in eliminating the high frequencies, reduces the "brilliance" of the music and causes speech to become rather muffled. It can usually be depended upon to make the poor reproduction from an old type amplifier and speaker sound more pleasant.

E.C.C. (Lane Cove): We have not Mr. Thompson's circuit on hand, but will ask him for it through these columns. See below.

J. Thompson (Blakehurst): The above reader requests that you forward WIRELESS WEEKLY the circuit of your crystal receiver on which you claim remarkable results. The circuit will be published.

A.P. (Burwood): Depends on the valves you use, and the plate current taken by them.

Mrs. L.M. (Charlestown): This was probably JOBK (Japan). Japanese time is one hour behind N.S.W. time.

E.J. (Wondai): "Could you tell me if it is possible to get a schedule of short wave activities for, say, three weeks or a month in advance?" For some time past now I have been missing some good broadcasts from England and America because I didn't know they were on the air. I missed the broadcast of the Schneider Cup race, and was very disappointed, as I was greatly interested in that particular function, and would like to know if a schedule can be arranged."

Answer: Little publicity is given to overseas S.W. broadcasts until they are all over, but a constant listener gets all the announcements, and knows what is coming on. We have a number of readers who are regular listeners of S.W. and we are asking them to give us reports for a short wave page, which may be a regular feature shortly.

L.W.W. (Tarana): See reply to E.J. (Wondai), above.

R.C.D. (Lindfield): There is no textbook published on the subject. However, "Proving Radio" and "Amateur Proficiency" cover the A.O.P.C. Use 20 Mule Team Borax for the rectifier. Do not forget to "form" it.

K.R.H. (Doubtless Bay): Use vernier dials.

E.J.H. (Blacktown): The Marco has been published at least six times. The circuit has been published even more often. The description of the B.G. Marco Four was not published. The original S.G. Marco Four circuit was published in answer

The Radio Information Service

Under the
Direction of
ROSS A. HULL
M.I.R.E

to a query. Full details of coils, etc., is contained in the other Marco articles which you state you possess. There is nothing here about the set. If there is anything you are doubtful on, write in. In any case, full details are given on the circuit diagram, and anything else you want to know will be found in the other Marco articles. The S.G. Marco Five can be built as a four-valve receiver, by leaving out the second R.F. stage.

E.D.B. (Forest Lodge): "Noticing many of your answers in WIRELESS WEEKLY I was wondering if you could help me improve my set. I can get a 3LO faintly when 2BL is working. My set is a Harkness Reflex. Is it possible to add another stage of R.F. amplification to the present set? If so, will you tell me how to do it, or where I can get the information?" — do it?

Answer: Add the additional R.F. stage mentioned. An R.F. stage was described as a unit that could be attached to small receivers quite recently (September 20, 1929). Note that an error appeared in this circuit. The resistor should be placed one side to the filament of the valve, and the other side to the grid return, and to A negative, which is earthed. A detailed explanation appeared in the following issue. Thanks for encouraging remarks.

B.W. (Zealand): Write to Economic Radio Co.

L.B. (Port Kembla): Probably some amateur testing modulation.

R.E.A. (Dorrigo): See article recently published on Interference Elimination.

W.J.M. (Tallew Bend): writes: "I wish to make a few comments on a set that I have put together. I have had very satisfactory results. The circuit was taken from WIRELESS WEEKLY, 25/1/29, and was termed 'The Countryman's One Valver' I added two stages of audio, and made it a three-valve receiver. My aerial is 140 feet long and a three-foot earth. Last night while experimenting I picked up the following stations: Hobart, 7ZL; Melbourne, 3AR, 3LO, 3UZ, 3DB; Sydney, 2FC, 2UE, 2BL, 2KY, 2GB; Brisbane, 4QG, Adelade, 5CL, 5KA; Perth, 8WF; Japan, JOAK. All of these stations were wonderfully clear on my Amplion speaker. I can recommend this set as ideal for country listeners, as it is very simple to construct, besides being very clear."

R.B. (Gwahga): "Daylight reception is always inferior to night reception. The addition of the power valve in question will have little effect on the daylight reception. It would be a much wiser plan to add one or more R.F. stages, either three electrode valve or screen grid."

W.F.B. (Lane Cove): See reply to E.J.H. (Blacktown). Valves O.K. For the Screen Grid use an A442. Any good transformer will do. Use filament ballasts instead of rheostats. Your query has been previously answered.

GENERAL: Can any reader supply Mr. C. Lindstrom, 91 Awana Street, Mosman, with a copy of WIRELESS WEEKLY, published some few years back, containing the Reflex receiver (crystal and three valves)?

J.M.E. (Willoughby): Layout O.K. Condenser quite satisfactory. The Bradleystat may be used in place of the detector rheostat.

J.M. (Hurstville): Regret we have no copies. You will have to advise us whether you require a half or full wave job. We shall then be pleased to publish a circuit for you. Your stamps are being returned.

R.W.J. (Brisbane): Your query should have read: ".0005 mfd. condenser too large for tuning short waves." Use a .00014. Here is wiring in words. Aerial to first turn of primary coil. End of primary to earth, to last turn of secondary, to rotor plates of .00014 condenser, and to one of the filament terminals of the valve socket, thence to A minus. The other filament terminal should connect to A minus and B minus. The first turn of the secondary coil should connect to the fixed plates of the .00014 mfd. condenser, thence to one side of the grid leak and condenser, and the other side of this to the grid terminal of the valve socket. The plate of the valve should connect to one side of the telephone, also to one side of the reaction coil. Other side of reaction coil to fixed plates of .00025 mfd. condenser, and rotor plates of this condenser to rotor plates of .00014 condenser. Other sides of "phones to B plus 45."

B.C. (Queensland): In your reply it was stated: "Connect C plus to C negative." This should have read: "Connect C plus to A negative."

J.F.McC. (Earlwood): No coupon attached. See question to querists above.

V.E.T. (West Wallsend): Nearly every week it becomes necessary to remind querists that when writing connection with previous querists those queries should be repeated. If you had advised us of your requirements, our answers would have appeared in this space.

W.E.B. (Tweed River): "Can I use two Phillips transformers in my Go-Getter receiver?"

Answer: Yes, the transformers will give quite good results.

W.H.L. (Queensland): Some time ago I read in WIRELESS WEEKLY how to liven up valves. Is this possible, or have you to throw the valves away and get new ones?"

Answer: Providing the valves are still in good order, their omission may be improved by the method described at the heading of last week's query section. Valves with a broken filament, or valves that have been made too soft cannot be rejuvenated in this manner.

K.R.A. (Bateman's Bay): Sorry, we have no record of the station, which is evidently a new Victorian amateur.

C.O.D. (Mosman): Reduce detector plate voltage, see that earth lead is attached, keep grid and plate leads well apart, and transformers at right angles. See that condenser connections are not reversed. Your remarks are published below.

GENERAL: The above querist who is using a Go-Getter, writes for the benefit of readers interested in short wave receivers: "Although I am at present having a little trouble with my Go-Getter, the set has been performing well for the past eighteen months, both on short waves and broadcast band, and those who decry the receiver may be interested to know that using the large coils, I can receive 6WF on its new wavelength (on 'phones), at about R3. Of course, after the local rock-crushers have said 'Good-night!'"

C.O.D. (Mosman): Suggestion quite O.K. Will make a good combination. You also add, "I frequently see where correspondents give particulars in your columns of reception of Japan, India, etc. Brief particulars of sets used for these receptions would, I think, be of great interest to your readers, although one in particular!" Readers are therefore invited to advise us of their DX experiences and sets used. Letters will be published in the "Safety Valve" column.

A.O.P. (Northbridge): "In your issue September 13, 1929, under 'Safety Valve' section, J. Thomson, Northbridge, makes a statement with regard to performance of his crystal set. I immediately wrote to the address given enclosing stamped envelope for reply, asking for favour of the circuit, but there has been no response. Possibly the letter never reached its destination. Could you induce Mr. Thomson to forward you details of the circuit for publication, and oblige very many crystal set users?"

Answer: A request will be published below. Also, see "Safety Valve." The address given us was probably not a full one.

Mr. THOMSON (Blakehurst): Please note A.O.P.'s request above.

S.G.F. (Willow Tree): It would be useless trying to reduce the battery any further. The good life of an accumulator is approximately only eighteen months. You have had good service. It would be a better practice to buy a new accumulator. The elements are probably eaten away.

E.D.B. (Belmore): You are probably using too high voltage on the detector plate. Try 22½ volts.

A.G. (Stanthorpe): The copies may be offered for postage only.

H.B.M. (East Maitland): Receiver will be O.K., but the tuning arrangement suggested will be unsatisfactory because the whole band will not be covered properly. Stick to specifications.

QUERY COUPON

If you are in difficulties about reception or set-construction, let us know, and we will endeavor to see you right. Make your questions brief to the point, and, where possible, show lay-out and wiring design. Under no circumstances will answers to queries be made by letter or by telephone. All answers will appear in the columns of this department in the order in which they are received.

The Radio Information Service, G.P.O., Sydney, Box 3366 P.P.
Please answer the accompanying Service Department, at the earliest convenience. I enclose this coupon in order to indicate that I am in bona-fide reader.

A.H.P. (Woolowin).—There would be little to choose between the two makes of condensers. The Phillips' transformers are completely satisfactory.

A.S. (Marrar).—You give a good account of the receiver, mention the distant stations you can "pull in," and then wind up by asking, "Please give your advice." What exactly do you want to know? Please be more explicit.

W.N.S. (Clarence River).—Please accept many thanks for replying to my queries in today's issue of "WIRELESS WEEKLY." I removed four turns from the aerial coil of the Countryman's One Valve, as described and instructed, and can now receive all stations without any interference. The length of the aerial is 90 feet, and earth 10 feet. Aerial is 40 feet high. No doubt other readers will be interested.

Answer: Glad we were able to assist. Thanks for kind remarks.

K.S. (Baulkham Hills).—The circuit is that of a Reinartz, and is quite correct, except for the coil windings. The primary should be 15, not 30 turns. Secondary and reaction coils O.K. Do not favor the audio, and would suggest using two valves and transformers. An output transformer is unnecessary. The complete circuit (three valve Reinartz) has appeared in these columns a considerable number of times.

C.A.R. (Mosman).—"I built the Improved Countryman's One Valve, but was not sure of the distance between the secondary and reaction coils. I wound it over the secondary (26 turns, as advised), but only got 2FC, so increased this by twelve turns, and had all local stations, also 3AR, 3LO, 503, 46G, and 7ZL, but the Inter-State stations disappeared when I take my hands from the tuning dial. Could I eliminate this? I also wish to add an r.f. stage to my Countryman's receiver. Please give instructions."

Answer: The trouble was that the reaction coil was in the wrong place. The 26 turns coil should be spaced $\frac{1}{4}$ inch from the 50 turns coil. Instructions for adding an r.f. stage to the Countryman's receiver will be found in these columns, in answer to R.S.V.P. (Newcastle).

M.C. (Vaucluse).—The s.g. Booster Unit would not be very suitable for the Cossor Melody Maker. The same type valve as used in the set could be used, providing the necessary bias was provided externally. The Cossor valves are of British manufacture. If you do decide to build the unit, see the correction that appeared in the following issue in connection with the resistor.

MICROWAT. (Sydney).—See Mr. Hull's article entitled "Facts About Power Valves," published last week.

W.B. (Rozelle).—Trouble is probably microphone valves. As soon as noise starts, try shifting the speaker. If that does not cut out the howl when set is full on, try shock absorber sockets (if you are not already using them), and place cabinet on rubber sponge feet. Keep speaker turned away from set. Any receiver can be made all-electric by making the necessary alterations, which include use of a.c. valves and a.c. power pack, or use of d.c. valves, and an A.B.C. eliminator.

O.A. (Waverley).—Probably the "B" batteries are flat, or the aerial or earth terminal may have become loosened.

ANOTHER MUG (Maroubra).—Two valve "lives" can be used in the Kenxon Three if desired. This receiver cannot be made into a short-wave job without using smaller condensers and coils, and leaving out the wavetrap. The symbols R1, R2, R3, etc., applied to amateur transmissions, is an indication of the strength of the signal received. R1 represents a signal that is too weak to read, and R9 (maximum) represents full strength reception. It is incorrect to use this method now, however, since the Washington Conference decided that the QSA signal be used, with numbers up to five, instead of ten. The signal means "The strength of your signals is such that the audibility of a QSA signal would be maximum strength reception. It is a difficult matter to become apprised to the radio trade, but you might write to some of the leading manufacturers.

C.T.G. (Orange).—The coils used in the Super-heterodyne were made to Mr. Hull's specifications by Messrs. Radiokes, Ltd.

GENERAL.—Could any reader please supply Mr. W. Bell, No. 5 Second Avenue, Campsie, with "WIRELESS WEEKLY" containing Proving Radios, Nos. 1 to 7. He is willing to pay 6d per copy, plus postage.

A.F. (Alexandria).—In the first place it is necessary to possess a transmitting license, and this involves applying for an examination on electrical and radio subjects, and a Morse code receiving and sending test. Secondly, if you were to work on 400 metres, you'd be liable, even if you possessed a license (transmitting). Thirdly, if you used 1000 volts on an inoffensive little 201A the plates of the valves would melt, with the result that valves, coils, transformers, in fact anything round about, would be burnt up (you, too, probably).

M.G.D. (Five Dock).—All the replacements suggested will be in order. Good reception. If you have blind spots, try increasing distance between primary and secondary coils. The Go-Getter is a good s.w. receiver.

N.R. (Woolrahra).—A request will be published see below.

"CRYSTAL DE LUXE" (Maroubra).—Mr. N. Royle, 31 Grosvenor Street, Woollahra, wishes to obtain a copy of your circuit. See also "Safety Valve."

GENERAL.—Mr. M. Wittenburg, 475 Harris Street, Ultimo, advises he has all the copies of "Proving Radio," up to the present issue, which any reader may have in bulk on applying to him at the above address.

A.G.W. (Five Dock).—Glad our remarks assisted. 2½-inch diameter former, wind about 65 turns. Re broad tuning, reduce size of primary coil, and try

The Australian Broadcasting Company will enter into their contract for supplying programmes from 5CL, Adelaide, on January 14. The programmes from that station will be extended and completely reconstructed and many features will be introduced. Important announcements will be made in the near future as to the policy of the Australian Broadcasting Company for 5CL.

a midget condenser in series with the aerial. 2½-gauge wire for coil.

V.H.B. (Concord).—The Phillips' transformer may be used without any alteration to the circuit. The wire from the core is not necessary.

S.H.F. (South Pambula).—The circuit is incorrect. The method of adding a stage of r.f. to the Countryman's One Valve is discussed elsewhere in these columns. You have probably damaged your detector valve, since 40 volts from the B battery has been placed direct through the filament. Also test other valves. The lead you suggest would make matters worse, since it shorts the "A" battery.

G.E.W. (Woy Woy).—Thanks for the copies. Your note published below. Not enough details for us to diagnose your trouble. You must tell us a little more than "Results poor." Write again, and give more details.

GENERAL.—Mr. G. E. Wright advises he has still a few back numbers left (1927 and 1928). He does not wish to part with any of the new numbers of "WIRELESS WEEKLY" yet, but readers paying postage may obtain any of the back numbers. The address is: G. E. Wright, Railway Street, Woy Woy.

"JOBO" (Willoughby).—See this week's "WIRELESS WEEKLY" for a simple, cheap, two valve wireless set for short waves. Nothing extraordinary to receive amateurs on broadcast band. A number of them work there late in the evenings after broadcasting stations have closed down. VK2LP is L. P. R. Bean, Artarmon Road, Artarmon.

DYNAMIC (Newcastle).—A matter probably of grid bias or detector plate voltage. Try adjustments.

R.S. (Bathurst).—Yes, a very good receiver. Has two stages of screen-grid radio frequency amplification, and power audio. Set includes Phillips' gramophone pick-up, etc. Agent is Mr. Shaw, 91 Pitt Street, Sydney. Your mains are a.c. The mains at Orange are a.c. also.

W.F.S. (Petersham).—Circuit correct. Formula for finding resistance by Ohm's Law is, $R = E/Q$, where R equals resistance in ohms, E equals pressure in volts, and Q equals current in amperes.

BUZZER (Artarmon).—"I have a 5-1 ratio transformer instead of a 3-1. What difference will this make?"

Answer: The transformer may be quite satisfactory. It depends on type of valve feeding it.

(2) "How could I charge a dry-cell battery with sal-ammonia?"

Answer: Dry batteries cannot be charged satisfactorily, but they may be regenerated once only, providing the cell still retains about 50 per cent. of its initial voltage. Separate all the cells from one another, and pierce holes in the bottoms. Insert upside down in the sal-ammonia solution, and leave for 24 hours, then seal up the bottoms again, and re-connect.

(3) "What is a resistance coupling unit?"

Answer: It is a device consisting of two resistances, and a condenser which takes the place of an audio transformer. The resistances are used in place of the primary and secondary windings, and the condenser is placed between the plate and grid connections. The "primary" resistor is usually of about

100,000 ohms. The "secondary" varies according to the stage in which it is used. For the first audio stage a ¼ megohm leak can be used. For the second stage a ¼ megohm grid leak is permissible. Three stages of resistance coupling may be used, and the "secondary" of the third stage should have a resistance of $\frac{1}{4}$ megohm. The condenser has a capacity of about .006 mfd.

(4) "About how much is a buzzer?"

Answer: A good buzzer costs about 5/- or 7/-. Cheaper ones can be procured for about 3/-. An electric bell, with the bell and hammer removed, will make a good buzzer, and these cost about 2/6.

(5) "What is Ohm's Law?"

Answer: An electrical formula which shows the relation between volts, amperes, and ohms (e.m.f., current, and resistance), and states that the voltage equals current multiplied by resistance, current equals voltage divided by resistance, and resistance equals voltage divided by current.

(6) "I take an interest in 'Proving Radio,' but find the A.O.P.C. course slightly advanced, because I have just started to take interest in wireless, but I follow some of it."

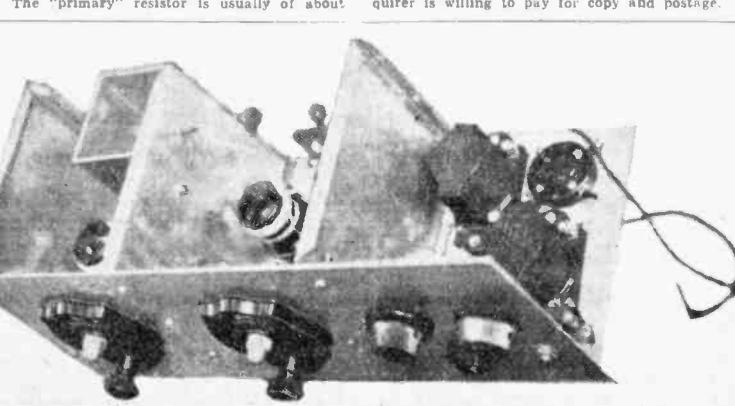
Answer: If you have only just started to take an interest in radio, you cannot expect fully to grasp the principles laid down in "Amateur Proficiency," but if you study "Proving Radio" thoroughly, you should have no difficulty in following the articles.

W.F.B. (Lane Cove).—The Screen Grid Four will not be published yet anyway, since approximately six versions of the Marco have appeared in the last year or so. In any case, the receiver can be built from the circuit given for the B.G. Marco Four, when the second S.G. stage should be left out. Coil data is given in the article "Valve" mentioned will be O.K. Any good make of transformer will be satisfactory. Bradleystats may be used in place of the rheostats. Amperites may also be used. Your letter has been answered previously.

A.C.W. (Guyra).—Write to the makers regarding the transformers. Mutual conductance and slope have been treated in "Proving Radio," which I understand, you have been following. It was stated that "Mutual conductance is a measure of the ratio of amplification factor to impedance. It indicates the efficiency of the valve, being a measure of the amount of output it is possible to obtain for the input provided. This term is sometimes expressed as 'slope.' " Re the A.O.P.C., write to Mr. Crawford, Radio Inspector, 219 Castlereagh Street, Sydney. The cost of an amateur's license is £1. The advantage of peaked audio amplifiers is that one particular frequency is greatly amplified to the exclusion of all others, thus ensuring selectivity. The peaked audio amplifier is of no use for "phone" work. Re valves, filaments, depends on the material used for the filament. An application form for membership of the Model Aero Club appeared in last week's "WIRELESS WEEKLY." Write to Mr. Lyons regarding the Aeropautical Dictionary. His address is Mr. Norman Lyons, Model Aero Club, c/o Australian Broadcasting Company, Market Street, Sydney.

SUPER (Sydney).—Mr. Hull's remarks on the Ultradyne and Super-heterodyne follow.—The important differences between the super-heterodyne and the "Ultradyne" are in the use of a stage of radio frequency ahead of the first detector; the incorporation of screen-grid intermediate amplifier stages, and in the fitting of screen-grid "plate" detectors. The advantage of the first r.f. stage, in combination with a relatively high intermediate frequency, is that the usual second tuning spot and the heterodyne modulation by it is avoided. Further, the likelihood of interference from harmonics, and the beating of unwanted carriers with that of the station being received is almost eliminated. Any super-heterodyne which has one or more r.f. stages ahead of the first detector therefore has the "edge" on any super without them. The use of screen-grid valves for the detectors and intermediate amplifiers provides the advantage of relatively enormous radio frequency amplification. This, together with the use of a "power" second detector, makes possible the elimination of one of the usual audio stages without sacrificing the ability to put out a large volume of music free from audible distortion. Though it is impossible to compare the two receivers with respect to s.w. distance-getting ability, it is evident that any super-heterodyne fitted with r.f. ahead of the first detector and screen-grid valves through the body of the set must be capable of better work than the receiver without these features, providing both sets are designed, built, and adjusted with the same care.

GENERAL.—Can any reader please supply Mr. S. W. G. Lewis, 1 Brown Street, Lidcombe, with copy of "WIRELESS WEEKLY" dated February 1, 1929. Interested parties are willing to pay for copy and postage.



Another view of the R.F. Four, described elsewhere in this issue.

COMING PROGRAMMES

AN interesting talk on some Art Exhibitions recently held in Melbourne will be given from 3AR on October 23 by Miss Stephanie Taylor, a young artist, whose water-colors have already brought her some distinction.

Many listeners, especially art students living in the country and unable to attend these exhibitions, will regard this talk as a long-felt want, for it will bring them in direct touch with the latest achievements of present-day artists.

GEOGE FINDLAY. the versatile young Melbourne pianist, will be heard over the air from 3LO on October 25, in a varied programme of classical and novelty numbers.

Mr. Findlay, who is a past student of the Royal Victorian Institute for the Blind, has had a brilliant career, and, in addition to the 3LO Scholarship, is a double Ormond Exhibitionist with honors. He also has a flair for composition.

MABEL WHITE, whose soprano voice is well known on the concert platform, will be on the air from 3LO on October 25, when, in conjunction with the Collingwood Band, she will be heard in several specially selected numbers, including Elgar's "Land of Hope and Glory."

MARJORY JACOBY, whose tuneful soprano will be heard from 3LO on October 23, is a bright young artist who has gone very far in her profession in a comparatively short time. She made her professional debut in the chorus of the successful musical play "Sally."

AMUSICAL treat will be broadcast from 3LO on October 20, when Raymond Lambert, the young Continental pianist, will submit a well-arranged programme. This clever artist studied under the famous master De Greef, and in association with his father, Edouard Lambert, professor of violin at the Brussels Conservatorium, established an excellent Continental reputation, which has followed them to Australia.

Madame Lambert, well known to listeners as an operatic soprano, will also be heard from 3LO on October 20, when this distinguished trio will give some fine numbers.

THIS series of romantic stories of Australia's early days is attracting many interested listeners to 3LO. Captain Donald MacLean will be heard on October 24.

ON October 20 Dr. George Simpson, from 3AR, will speak on the great work that is being done by the Australian Inland Mission.

Only those actively engaged in the work realise the difficulties under which it is carried on, the hundreds of miles traversed by car, that a service might be held in a district seldom visited by a padre, and have vivid memories of meetings held in shearing huts where hymns are heartily sung to the strains of a portable harmonium. Dr. Simpson's address will be punctuated with many personal anecdotes.

A DESCRIPTION of the great river pageant of the year, Henley-on-the-Yarra, will be broadcast by 3LO on Saturday, October 26.

TOM FOSTER, whose robust tenor voice has not been heard over the air for some months, will be broadcasting from 3LO on October 24.

MANY people are unaware of the wide variety of exquisite wild flowers and ferns that are to be found in the Australian bush. Mr. Daley's next ramble will take place from 3LO on October 23.

HOW many listeners understand the real meaning of "A Quiet Morning at Home"? Although this is the term usually used by those who busy themselves with household duties, their morning is generally the reverse of quiet.

FRANK PERRIN will be broadcasting from 3LO on October 25, and this will be one of his final appearances prior to his departure from Melbourne.

A CYCLING event of some importance will be the Wangaratta to Melbourne Road Race, to take place on Saturday, October 19. 3LO will broadcast a description of the event.

MR. C. N. BAEYERTZ lectures every Thursday at 2.17, from 2FC, on "Spoken English."

Mr. Baeyertz treats of breathing and voice production for speakers, pausation, emphasis, inflections, modulation, pitch, tempo, and all else that enters into the technique of speech.

He discourses regularly on words commonly mispronounced, and words often misused, faulty diction. In all its forms. The series, indeed, is a liberal education in the art of speech.

Wireless Weekly

**52 ISSUES
DELIVERED POST FREE
FOR ONE YEAR**

13/-

"WIRELESS WEEKLY" gives you the complete broadcasting programmes from every important station in Australia a week in advance in addition to topical news and articles and a technical constructive article by a qualified radio man.

SUBSCRIPTION FORM

To the Editor, "Wireless Weekly," Box 3366PP, G.P.O.

Please forward "Wireless Weekly" for a period of
for which I enclose for
(Add Exchange to Country Cheques.)

NAME

ADDRESS

Subscription Rates: 12 months (52 issues), 13/- post free; 6 months (26 issues), 6/6 post free.



Look for this Seal.

Radiotron—

UX 226	Amplifier	15/-
UY 227	Detector	£1/7/6
UX 171A	Power Amplifier	19/-
UX 280	Rectifier	£1/10/-

BECAUSE Radiotron Valves are subjected to over 40 individual laboratory tests before they are released—because leading manufacturers of quality receivers specify Radiotrons for initial equipment and for replacements—and because of their world wide reputation for dependability, most owners of Electric Receivers choose Radiotron A.C. Valves.

Distortionless performance due to watchlike assembly, long life and economy resulting from sturdy construction are assured with Radiotrons.

RADIOTRON A.C. VALVES ARE OBTAINABLE AT ALL RADIO DEALERS.

Amalgamated Wireless
(Australasia) Ltd.
47 YORK STREET, SYDNEY.

J. B. CHANDLER & CO.,
45 Adelaide St.,
BRISBANE

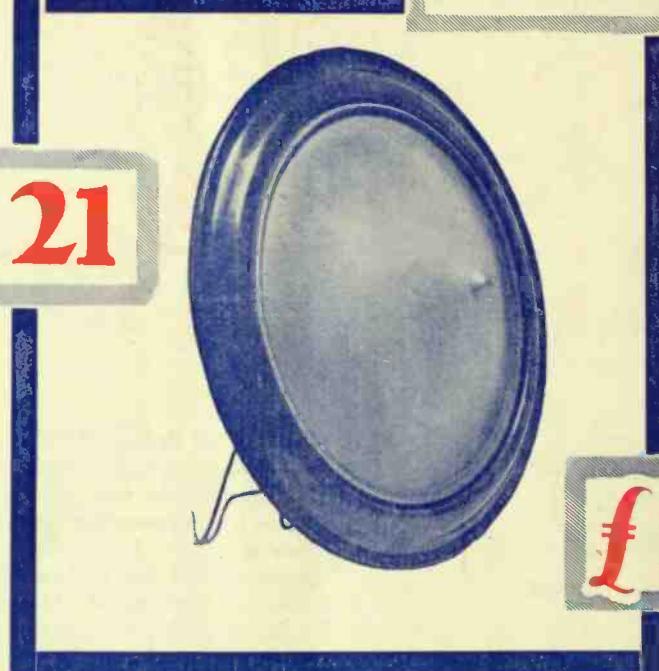
AC.2

AMPLION

standing AND hanging cone

AC.21

£ 2-17-6



THIS speaker, with its "16 inch" non hygroscopic bronze cone, its superlative "one-piece" mahogany bakelite moulding and polished rim, is a most beautiful model, and well worthy of the name of Amplion. Its beautiful reproduction is well in keeping with its beautiful appearance.

**TWELVE MONTHS GUARANTEE
WITH EVERY AMPLION SPEAKER**

*Junior
Hanging Cone,
AC2*

£1/17/6.

AMPLION A/SIA LTD., 53-55 York St., Sydney
Distributors in all States