

Complete Broadcasting Programmes a Week in Advance

Wireless Weekly 3^p

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 14. NO. 21.

FRIDAY, NOVEMBER 15, 1929

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

Australian

Wireless Manufacture



A.W.A. RADIO-ELECTRIC WORKS are equipped with modern plant for the efficient and economical production of every type of wireless apparatus for use on land, at sea and in the air.

Amalgamated WORLDWIDE WIRELESS Wireless
(Australasia) Ltd.

Pioneers of the Wireless Industry in Australia



The
MODERN
Two-Valve
Set

A RECEIVER WHICH GIVES THE BEST POSSIBLE PERFORMANCE FOR AN OUTLAY OF £5

WRITING PLAYS FOR BROADCASTING

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.

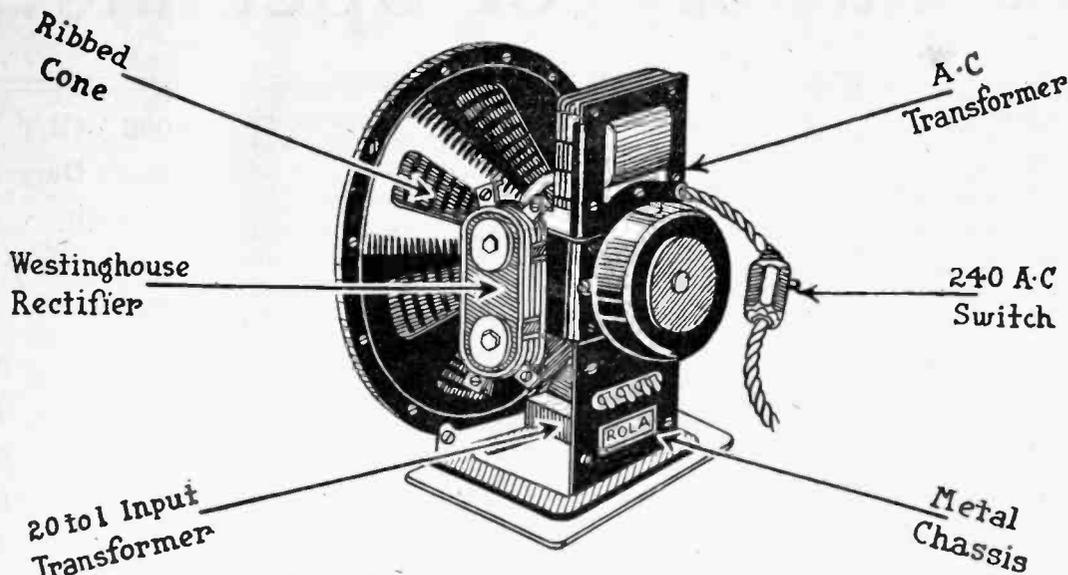
MADE IN AUSTRALIA

Stromberg-Carlson (Asia) Ltd.

72-76 WILLIAM STREET, SYDNEY.



PERFORMANCE—Means Everything



DYNAMIC **ROLA** SPEAKERS

FOR FINER REPRODUCTION

Whenever you hear sound re-creation of outstanding quality you will find that a ROLA Reproducer is being used. ROLA Reproducers are now being used extensively by leading manufacturers of radio sets, electric phonographs, talking picture equipments, etc. Make sure you receive a Rola in the next set you buy. If you already have a set add a Rola to your equipment, and receive the utmost in realistic performance.

The above model is the J110 Dynamic Unit, which plugs into your light socket. Main features include the Westinghouse Dry Rectifier, A.C. Transformer, Protective Fuse, 20 to 1 Input Transformer, Ribbed Cone, Bakelite-suspended Moving Coil, Tinsel Cord, etc. PRICE, £10/10/-.

SEE and HEAR

this unit at our showrooms on any type of receiver you wish. For enormous volume, hear our UDISCO Theatre Amplifier in operation, using Rola Dynamic Reproducers.

Usual Concessions to Dealers

UNITED DISTRIBUTORS
LIMITED

WHOLESALE AND RETAIL,
151 Castlereagh St., Sydney

'Phone, M3004. Also at Brisbane, Melbourne, Wellington (N.Z.), Tas. Agents, Findlays Pty., Ltd.

A Galaxy of Specials!!

<p>TEFAG Adjustable Diaphragm Phones 4000 ohms.</p> <p>Each Headpiece is adjustable, ensuring utmost sensitiveness.</p> <p style="text-align: right;">12/6</p> <p style="text-align: right;">22/6</p>	<p>Polymet THREE-STAGE RESISTANCE COUPLED UNITS for volume without distortion. Specially suitable for Gramophone Pick-up Amplification.</p> <p style="text-align: right;">10/-</p>	<p>Pilot .0005 STRAIGHT-Line FREQUENCY Variable Condenser, 9/9.</p> <p>Pilot .00015 8-PLATE SHORT WAVE CONDENSER, 7/6.</p>	<p>1000 VOLT Heavy Duty 4MF. Fixed Condensers</p> <p style="text-align: right;">6/6</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">L E W W C A O V T S E R A P</p>	<p>THE RENOWNED TIMMONS</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="width: 30%; text-align: center;"> <p>Guaranteed the Equal of Any Dynamic Unit.</p> <p>No Field Current Necessary.</p> </div> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> <p>Absolutely No Hum or Distortion.</p> <p>Build it into Your Cabinet; Its Tone and Volume is Astounding.</p> </div> </div> <p style="text-align: center;">Incorporating a 10-inch permanent Magnet, Dubilier Output Filter, and a Double-wound Balanced Armature—features only fitted to the most expensive types of speakers.</p> <p style="text-align: center;">Complete Unit --- £3/3/-</p>		<p style="writing-mode: vertical-rl; transform: rotate(180deg);">D I O R A</p> <p style="text-align: right;">3in. Vernier Dials 3/6 4in. Vernier Dials 4/6 Moulded Bakelite</p>
<p>"KODEL" ONE VALVE RECEIVER</p> <p>COMPLETE PHONES AND BATTERIES.</p> <p style="text-align: right;">65/-</p>	<p style="text-align: center;">PHILIPS TRICKLE CHARGER</p> <p style="text-align: center;">saves a trip to the battery charging station, £2/15/-</p>		<p style="text-align: center;">MONARCH SUPER AUDIO Transformers 33oz.</p> <p style="text-align: right;">15/6</p>
<p style="text-align: center;">EXIDE Accumulators</p> <p>2 volt, 20 amp., 7/9 2 volt, 45 amp., 14/6 2 volt, 100 amp., 25/-</p>	<p style="text-align: center;">PHILIPS B and C POWER PACK, complete, £8/15/-</p>		<p style="text-align: center;">HYDRA 2MF CONDENSERS 3/6</p>

Price's Radio Service,

WINGELLO HOUSE, ANGEL, PLACE, SYDNEY.

Box 3326PP.

WAILS OF A BABY GRAND

A STUДИOTIC FANTASY
INTERPRETED BY

EWART CHAPPLE



He tore at my heartstrings.

FORWARD, please!
The head salesman leapt towards the lift as our newest customer stepped out. Our heartstrings throbbed with expectancy as the dark and handsome gentleman came in our direction. Which of us would it be? Old Styles, the salesman, put on his suavest manner. "Weinstein" (pronounced wine-stain). Sir? Yes, sir. This way, sir. We have eight. Just imported, sir.

Naturally, I preened myself, this was my chance. I had been there for six months, and was just a little tired of being tuned once a week and polished three times every day. Would it be Potts Point or only the North Shore line? What excitement! The dark and handsome gentleman ran his hands over the keys of my neighbor, Fritz Weinstein. "Quite nice; but something lacking in the bass." This was right into my hands. My bass was perfect.

But would he pass me by? No. Mr. Styles had already placed the stool at my feet. The dark and handsome gentleman touched my keys. I did my best and throbbed like any talkie heroine catching the ardent eye of Conrad Brooke, the Perfect Lover.

"Beautiful," said the D. and H.G., "send it to ——" and the rest was lost as Mr. Styles, the super salesman, glided away with his victim on wings of affability to complete the bargain.

What hopes, what fears, what wild imag-



"Something lacking in the bass," he said.

inings of the future disturbed that evening's slumberings! Alas!

HAD I BUT KNOWN

Commotion on every side.

All day yesterday I lay alone—untouched. Uncared for. This was not Potts Point—not even North Shore; but some dull, cavernous barn in Market Street. The silence was of the tomb. Or of a Church on Saturday in summertime, accentuated by the distant boom and rattle and hootings of the busy streets below. But to-day it is broken. To-day there has been naught but bustle and clamor. Men moving furniture—chairs, music stands—into the barn. Men talking of "The Opening" and "The New Era." All modern inventions being transported here—arc lights, queer, hollowed blocks of marble supported on stands, cinema machines, cameras—all cluttered about me.

I have just heard the word "Studio" mentioned. It may not be so inferior, after all. Some artist, probably.

A painter—

A writer—

Perhaps even a pianist!

I know at last!

It is a broadcasting studio!

It is the Opening Night of the Australian Broadcasting Company and BRAILOWSKY PLAYS! What an honor to be used by a Knight of the Keyboard!

A KNIGHT OF THE KEYBOARD!

What had to be, has been.

'Tis over! I am here in the darkness—
AT REST.

Oh, what a night! The arcs crackled; the cameras clicked; the Great Names spoke; the microphones (those little marble things with holes in them) ran hot; and I—I am not normal yet.

Brailowsky and I sang sweetly—but only for twenty minutes.

Then my troubles began.

The Announcer had told the waiting world that Bara Beararm would sing. I thought how beautiful she looked (under the crackling arcs). What poise! Was I to be used to accompany that divine creature?

YES.

Slowly there advanced a fat, fierce gentleman with a dull gleam in his eye. How I longed for the gentle Brailowsky! But I soon forgot my longing under the in-

tensity of the fat gentleman's onslaught. He tore at my heartstrings! The beautiful Bara only aggravated his cruelty with sympathetic yelpings. To think such beauty could veil such vocal wickedness!

This was only the beginning of an evening of terror over which I would rather draw the modest veil of silence. Here in the darkness I lie, broken-hearted, broken-spirited—a physical wreck—and I wonder—

WHAT WILL TO-MORROW BRING FORTH?

(Further interpretation by Mr. Chapple next week)

RADIO IN SPAIN

ACCORDING to an article in the "Madrid Gazette," the Spanish Government has taken over the organisation of broadcasting in that country. The arrangement is similar to that of the Australian Government, except that Spain goes one step further than Australia in handling the administrative as well as the technical departments.

Contracts have been let for the erection of and care of 18 transmitters, which must be placed in the principal cities, spread all over Spain. The energy of the station in Madrid must be brought on 20 k.w., and a short-wave transmitter has to be built, the energy of which may amount to 40 k.w. This last transmitter is intended mainly for broadcasting to the Spanish-speaking countries in South America. The wavelength to be used will be 100 metres. The energy of the main station at Barcelona is to be increased and brought up to 10 k.w. The new stations and the technical alterations on the existing transmitters must be accomplished within two years.

The income of the managing company consists of 90 per cent. of the listening dues received, and in addition of a part of the money resulting from advertising by radio. However, the stipulation is made that for this purpose not more than 100 words an hour may be transmitted.

The Government itself keeps 10 per cent. of the listening dues, as indemnification for the administration.

Between You and Me and the Microphone

Up Here

WE got up this morning, anointed ourself with oil—got well oiled, in fact—put on our white robes, and proceeded down the golden streets, admiring the golden houses, ornamented with diamonds, sapphires, and rubies. The houses were built, so the Secretary of the Wireless Association told us, of golden bricks brought up through the ages by countless successful financiers. We admired especially the clearness of the window glass, and our companion told us that each pane was the crystallised tear of an amorous soubrette, so easy to see through. "I am taking you to the broadcasting studios," said the Secretary of the Wireless Association. "I am sure you will be interested in the broadcasting studios Up Here."

We supposed they were quite up to date. "Most up to date," said the Secretary. "In fact, our whole broadcasting system is modelled on the British Broadcasting Corporation, which we were quick to recognise as the most respectable, stable, and least susceptible of change of the many international organisations. Slight alterations have been made Up Here, and there, of course, to suit the altered conditions; for instance, the Church Party is naturally very strong Up Here, even stronger than in England or in the columns of the "Sydney Morning Herald," and they exercise considerable influence on our programmes. For instance, the programme directors Up Here are required by Statute, under section seven of the Broadcasting Act passed by the House of Sober Debate (on the advice of a committee of Archbishops, who knew nothing about the subject and whose advice was, therefore, quite impartial) to provide for the broadcasting of six Church services every day in the week and nine on Sunday. A wicked fellow by the name of Lucifer got a party together to oppose these measures, but was defeated in battle and shot out There.

He pointed downwards, and shuddered. "I believe Milton wrote an account of the affair; but being so far away from the scene of action he misinterpreted its causes. The general effect, however, was much as he insinuated. Here we are."

We had arrived at the doorway of a magnificent golden building, which stood apart from all other buildings. Jewels gleamed and flashed in the sunlight from the walls. We walked up the marble staircase, lined on each side with statuary, and entered the enormous anteroom, of which we can only say with the humble-minded publicity department of the State Theatre, that words, such as we have the power to command, must fail to describe its splendours—you must come and see them for yourself. The nearest description we have is that the Broadcasting Building Up Here is as splendid and magnificent and wonderful as the State Theatre pretends to be.

The Secretary of the Wireless Association pushed open a door marked:—

"CONTROL ROOM,"

and ushered us in. Twenty-three operators were there busily turning dials.

A song was in progress as we entered, which we eventually determined to be a hymn; and we asked our companion which of the six daily church services we were listening to.

"That's not in a church service," he replied, "that's one of our lighter classics—number 436."

"It sounds very like a hymn to us."

He dropped his voice and looked round furtively before he replied: "It used to be known as a hymn," he admitted, "but it has been ordained a light classic by the Higher Reproduction Method."

"And who's he when he's at home?"

"Shh—the last man who asked that followed poor old Lucifer. The truth is, we are very much restricted so far as music is concerned. The Postmaster-General——" he stopped and bowed to the ground.

"The Postmaster-General?"

"Remember to bow next time you men-

in demand, and they seem to know most of these numbers; but the moderns, from 500 to 650, can only be played once in a while. The playing of a 500 song brings in scores of complaining letters, while the playing of a 600 song is the instantaneous cause of 1000 cancellations."

"Talking of licences—is there much pirating here?"

"No. They know where they'll go if they start any of those tricks. But our listeners are very tender about the ears, and at the slightest irritation they will cancel their licences. You'd hardly believe the precautions taken. See that man? Look at his tongue."

"Why, its only half a tongue!"

"Yes; he's an announcer. They cut off half the tongue of each announcer Up Here to minimise the sound of any mistake he may make. They do the same with every talker."

"One of our main features in the Daily Short Story. They have been reading these over the air every morning for the past three hundred years Up Here, during the Tired Housewives' Session. These stories are specially selected and approved by the Postmaster-General, to be read in rotation throughout the year; and the housewives say nothing puts them to sleep so quickly as one of these familiar old tales."

"It is so on earth," we said, "but how about your night programmes?"

"They go very well," he said. "We are able to put on a great variety of interesting items. Harp solos, choirs, organ solos, singers, all, of course, performing special arrangements of ancient, modern, and popular songs. Sometimes we have a grand concert, using a special orchestra—harp, organ, and timbrels—which is always very much appreciated."

"But is it all music? Isn't there any relief?"

"Oh, no! Plays are banned by——"

"The Postmaster-General."

"Yes; but, of course, the two evening church services help to break the evening up, and on Mondays, Wednesdays, and Fridays there is a special talk by a prominent speaker on "Moral Purpose and Attainment" during the evening session.

"And the listeners like it! They don't complain?"

"My dear sir, our listeners complain only about those things which they think it virtuous to complain about. They know where they'll go if they complain about the wrong things.

"As we were leaving we had a sudden thought. We twitched his sleeve. "How do you get on about sopranos Up Here? Don't you find they blast and——"

His face became grave and sorrowful. "My friend," he said, "sopranos don't come Up Here. Their sins . . ." It was too much for him. He broke down and wept. Not us, though. We clapped him on the back. "Wonderful!" we cried. "It's worth coming Up Here if it's only for that!"



tion that name. The Postmaster-General has issued an order that no music by any composer whose domestic relationships were at all suspicious may be played under any circumstances whatsoever."

"Good heavens!"

"Yes, you see how that restricts us. Almost every ancient and modern lay composition we have attempted to programme has been challenged. So we have been forced to return to the Hymn Book, which has the sanction of the Post Office. Luckily it represents both classes of composition, ancient and modern, and we have been able to arrange classical, popular, and modern programmes from its contents; although the listeners' tastes are rather peculiar. For instance, they don't like early classical stuff—from 1 to 119, and they have a preference for fives and tens, such as 120 and 125. The popular stuff, from 200 to 500 is very much

James

66 THIS INSUBSTANTIAL PAGEANT 66

By
JIM
DONNELLY

RADIO Drama is at last on the air as a full-grown feature. Having braved the measles, mumps, and whooping-cough of Broadcasting's particularly inhygienic infancy, it now goes out nearly every night—from one station or another—and has its clothes neatly tailored according to the dictates of prevailing fashion. In all quarters it is described as having a most promising future.

Unfortunately, its early years were particularly circumscribed. As a child it was guarded and brooded over by a maiden aunt named Aesthete. This good woman, while learned in the niceties of good form, was wholly ignorant of the work-a-day world wherein Radio Drama ultimately would have to move in order to serve, and by its service, to survive.

As time went by, it increasingly reflected the influence of its devoted aunt, but happily was saved from complete ineffectability by the inspiration it gained from occasional trips into the back alley where it joined a group of small boys and indulged in a delightful game known as "Klick the Jam Tin."

After each excursion it came home with a couple of new ideas.

One day it walked in from Aesthetes' rose garden and said, "Cook me a coupla slabs of steak. I'm gonner get a job down the iron foundry."

From that moment Radio Drama possessed a personality. To-day, no one dares prophesy where its powers and possibilities will end. This much however is certain—it will only become impotent if it ever gets to the stage where it comes home from the iron foundry with its eyes so full of dust that it cannot see how beautiful its aunt's roses really are.

The great limitation of Radio Drama is that it possesses only one dimension. It has length whereby we hear it but it lacks breadth whereby it could be seen and the satisfying thickness that can be touched.

Radio Drama proposes to deal with the real stuff of life. Real things are not only heard, they are seen and touched. Its major problem arises out of the fact that it is continually called upon to present in sound and with a semblance of reality, something which the hearer's instinct tells him he should be realising optically.

When our radio players finally learn to make a sound like a rainbow most of our troubles will be over. In the meanwhile,

These our actors,
As I foretold you, were all spirits and
Are melted into air; into thin air:
And, like the baseless fabric of this vision,
The cloud-capped towers, the gorgeous
palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve
And, like this insubstantial pageant,
—Shakespeare ("The Tempest.")



Jim Donnelly

broadcast drama must struggle on suggesting the things that cannot be seen and telling of the things that never may be touched.

After all, no reasonable man should expect the printed page to make a noise like a gramophone. There are some things that science has not so far been able to do.

A considerable number of articles have been written about the radio drama. Almost without exception the writers have treated the subject from the art aspect—weighed it as you weigh the merits of a poem.

The work must possess unity, they say. There must be no digressions. It must be coherent. It must stress the essential and pass over the non-essential. Emphasis must be employed, and unto Caesar must be rendered all those things which are Caesar's. Usually the writer devotes three or four paragraphs to a definition of climax.

Naturally all these things are important, but surely they should be taken for granted. Radio Drama needs something more than this.

Radio Drama needs selected and controlled sounds of every imaginable—yes, and not yet imagined—combination. It needs sounds as thick as fog and sounds as cold as ice. It needs sounds capable of starting up in the mind a set of reflexes that heretofore have been inspired only by the faculty of sight. It needs the sweep of the siren, plus—what? —to make us vision a perfect arc. It needs

a sympathetic tonal "back curtain" against which every situation may be played. It needs an entirely new technique, and the work calls for creative genius of the highest order.

Will this ideal ever be realised? Possibly. First, because it calls for a sensitive hearer as well as a perfected presentation. Faculties are developed by purposive thinking, and purposive thinking is at a premium with most of us.

Secondly, because by the time we could develop an ability such as would be required for transmission and reception of this nature, science will have perfected television and given us new marvels wherewith to transmit a perfectly satisfying semblance of reality.

The radio play of the future will be more real and inspiring than any of our present-day stage presentations can hope to be. Television is taken for granted. Lighting and color effects will be developed to what is now an unbelievable state of perfection—indeed, it is not to be doubted that the human eye will be trained to appreciate entirely new color combinations.

The actors will no longer tread the echoing boards, but will move in natural settings, in the open fields, and in the altogether new market places. With our receiving equipment we will sweep the world at will, and the writers of radio plays will be expected not only to weave a pretty fabric of words, but to milk the communal cows or sweep the public streets or, at least, perform some other reasonable and beneficial social service.

So much for the radio drama of the future, what of the radio play of to-day? It is limited in its scope, but, nevertheless, is worthy to inspire our wonder.

The actors are in Sydney, and the bald-headed man is in Perth. The heroine sobs and the villain gnashes his teeth. "Give me back the papers," he hisses, "or I'll tear up the child." The heroine shrieks.

Wearily the bald-headed man switches off the loud speaker and leaves the room. "Any woman who can scream for three thousand miles ought to be muzzled," he says as he closes the bedroom door.

Capt. Donald Maclean

CAPTAIN DONALD MACLEAN has become famous all over Australia for his pirate stories. Apart from their romance and thrilling appeal they contain a fund of authentic historical facts which he has gleaned from the most famous private and public libraries and collections of historical data in the world. He has travelled extensively in many lands, and is universally acknowledged as an authority on his subject, whether it be "The Sacking of Panama," "The Conquest of Peru," "The Marie Celeste," or anything else with which he chooses to delight listeners. Captain MacLean is broadcasting from 3LO and 3AR, Melbourne, and has been engaged by The Australian Broadcasting Company to deliver a series of pirate talks from 6WF.

ALFRED CUNNINGHAM, who has just returned from a tour with the Metropolitan Opera Stars, through West Australia and Victoria, will broadcast from 2FC on Monday, November 18. He went to West Australia partly to open the new A.B.C. Broadcasting Station.

This article is by the author of the popular "Jazz Spider." Now turn over the page and read what another contributor has to say about writing radio plays.

ON WRITING RADIO PLAYS

The success of "The Jazz Spider" has brought many requests for more radio plays to enlighten the monotony of music. In this article our contributor describes the advantages and the difficulties in the writing of the radio play which, in his opinion, is most suitable for broadcasting.

By J. BELLINGTON SMYTHE

I.

It has been said by some or other authority on art that the peculiarity of any artistic medium is its capacity for portraying some effect which is impossible to any other medium. The stage, for example, has certain definite advantages over the talkies, the most important being its ability to sustain the fantastic and unreal. The talkies have the chief advantages of unlimited scope, and truth to outward semblances of Nature.

With radio, we leave the representation of Nature, and the realistic semblance of its outward form—this "too, too solid flesh" DOES melt, and dissolves into thin air—we enter the realms of imagination peopled only by bodiless voices and singerless songs. Radio's peculiar quality as a medium is its lyrical capacity—its SINGING capacity, and its future as a dramatic medium will be determined by the ability of radio playwrights to infuse the spirit of lyricism into their production.

"See how the moonlight sleeps upon the bank"—that is, perhaps, wearily lyrical; but it illustrates the sort of inspired stuff a good radio drama should be made of—by its lyrical rhythm; by its lyrical ecstasy; by its ideal content.

Ultimately, as Shakespeare said some time ago, and as someone said before him, it is all music—heaven and earth, the sea and all that in them is, our speech, our movements, ourselves—all, all is music, all is a singing, all is purely lyrical. The radio playwright, then, will be the dramatist of the singing power of the speaking voice.

II.

The content of all works of sound is progressive—that is, it proceeds from a well-defined beginning through a well-defined climax to a well-defined end, and it proceeds both in music and drama by rising and falling, but always increasing, degrees of intensity to its climax, which in music is the massed combination of many themes or the soaring heights of a melody, and in the drama the point at which the several situations clamor together for resolution. You can draw a graph of the intensity of a musical composition or a play. It generally takes the form of the parabola described by a thrown stone, slowly mounting to its highest point, then dropping very fast.

Any kind of play—stage, talkie, or radio—which conforms with this "parabola of intensity," so long as it is written intelligently, cannot fail to sustain the interest of its audience.

This may seem elementary and theoretical, but, judging from most past broadcasts which have pretended to be anything more than "sketches," it is not yet fully realised.

III.

Five or six characters, it is commonly agreed, are as many as can be comfortably accommodated in one radio play. The fewer the better. It is also of great importance that each character should have a voice distinct from every other voice in the play.

The best "location," or "scene," or "background" for a radio play is one of which silence may naturally be expected. A room, a suburban street at midnight, the bank of

a lake, and so on. The next best background is one of music; but it must be remembered that music supplies a real background only for fantastic plays; for plays that aim at realism; music can only supply an accidental background, and in this case its presence must be explained by the circumstances.

The worst background is a background of noise, as a scene situated in a printing office, or in the waiting-hall of a broadcasting station, or on the platform of a railway station. Possibly there may be two sides to the argument, but I assert that noise backgrounds defeat the ends of the radio play—they are confusing, monotonous, and distracting.

The subject matter of the radio play may be anything from tragedy to farce. This medium is especially suited to fantasy and to imaginative treatments of stock themes. The plot should always be stripped of detail and complexity, and every point in its development should be clearly marked. All side issues which do not aid the development of the one simple theme should be scrapped.

"Action" presents many difficulties, and as much as possible should take place "off-stage," and be explained in the dialogue. You can choke a man to death quite effectively on the air; you can cover him with a gun; you can kiss your wife or someone else's; but you will find it very hard to walk up a flight of stairs, to creep stealthily across

the carpet, and so on. But much can be suggested in dialogue.

Finally, all kinds of effects are available, from the singing of the nightingale to railway crashes.

So it will be seen that the radio medium offers ample scope to the resourceful playwright.

IV.

The least understood, least used, and most valuable adjunct to the radio play is the atmospheric prelude. It is most important that the listener should have a clear impression of the scene in which the play is to be acted; and it is even more important that some of the atmosphere of the play should be imparted to the listener beforehand. Once the listener's imagination is stirred, once he becomes an observer at the scene of action, you have his interest—he wants to know what will happen there.

"The scene is a wood;" "the scene is a lolly-shop"—was there anything ever more dull than such descriptions. One should take the listener by the hand towards the scene, point out the environment as though one were there—we have left the studio and are now walking through the undergrowth of a thick forest. It is nearly midnight, and through the leafage lacing overhead stars twinkle; an eerie wind blows keenly about us as we stumble . . . and so on to the scene. By the time you are through with your description the listener is there with you, wondering what will happen next.

Under this method changes of scene and time are easily possible—the only boundary is the playwright's imagination. Of the radio playwright it will be possible to say, even more certainly than of Shakespeare, that

"Creation saw him spurn her bounded reign.

And panting time tolled after him in vain.

Another unused resource of the radio play is the soliloquy by which a character may speak his thoughts alone.

V.

During the past few years some 6000 plays have been submitted to the B.B.C. Nearly all have been rejected, most because their authors knew nothing of playwriting; others for "unsuitability of theme; too much horror, too partisanly controversial, too weak in plot, poor in dramatic construction, too limited in appeal—and many others because they were written for the stage and had been rejected by dozens of managers as not being good enough for production, and their last hope was the B.B.C."

"The real radio-drama form," says the B.B.C., "has not yet emerged from the group of praiseworthy attempts made by enthusiastic writers."

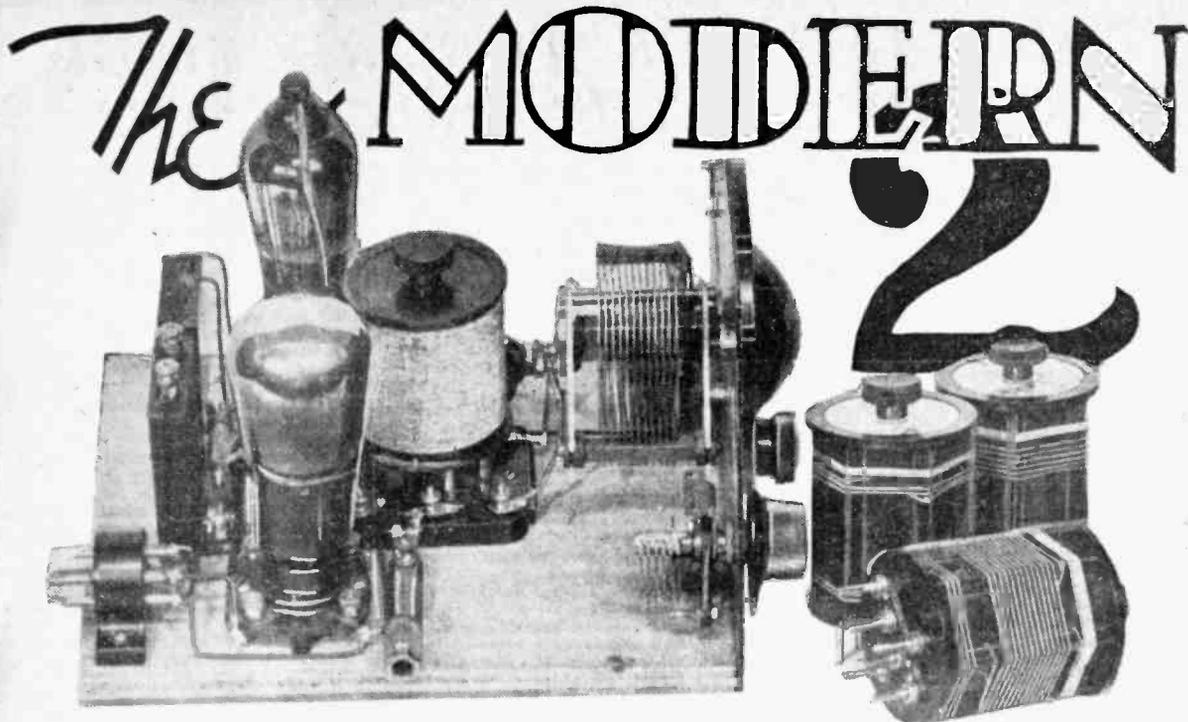
One can only add that not even in Australia is the "radio-drama form" perfected.

The reason is not that the resources of radio are too few, or even that a "radio-drama form" is necessary; the reason is simply that lyrical dramatists are born and not made; and they are born only now and then; and they sing their stories, not so much to conquer difficulties of technique as to give expression to their feelings.

It is really of very little use to write on how to write radio plays.

SOON
SPECIAL
PORTABLE
NUMBER
OF
"WIRELESS
WEEKLY"

Build yourself a portable set
to take on vacation.



EVIDENTLY it is quite difficult to present anything new or unusual in the way of a radio receiver and get away with it. Just as soon as you say to anyone "Here's a nifty little two-valve receiver that's right up to the minute" they come back with some drivel about whether it will get 2YA or not.

Of course, the people who say that sort of thing are chiefly enthusiasts who have not been able to get the slightest real understanding of what radio is all about. The trouble is that there are so many of them. Having consumed the last couple of dozen "Wireless Weeklies" quite thoroughly, I have been able to make a suitable reply with confidence. "This receiver," I tell them, "will do anything that any other two-valve set will do under the same conditions, and will do a better job of it with less effort. If your location is one which permits 2YA to be received with two valves, then this set will do the same and more."

The circuit of the set looks rather different from the ordinary two-valve receiver, though it is based on the standard connections for a detector and resistance coupled audio amplifier. The differences merely result from the provision for the new type of valves. Essentially, the receiver consists of a screen-grid detector, working with a grid condenser and grid leak, resistance coupled to a pentode audio amplifier.

The screen-grid detector gives about five times the output for a given signal that one would get with the ordinary three electrode valve while the pentode gives a much greater output than any ordinary power valve would under the same conditions. The resistance coupling does not give the step-up that an audio transformer would, but that is more than made up for by the increased amplification of both the detector and the audio valve.

A SIMPLE CIRCUIT

In the circuit diagram the coils marked L1, L2, and L3 constitute the tuning unit. For the broadcast waves a Lewcois coil "AMS" is used. For the short waves the three Lewcois coils, "AMS2," "AMS4," and "AMS9" permit

*An Excellent Set
Which can be
Built for
£6*

By KEN WARNER

An increasing number of enthusiasts are breaking away from the old-fashioned receivers that have been described and built in the same old manner for the last six or seven years. We note a definite interest in truly modern apparatus and methods, and have received letters from many experimenters who are building "up to the minute" sets. Mr. Warner is one of them. We are pleased to be able to describe his first receiver... a set in which good use is made of both the screen-grid valve and the pentode...-Technical Editor.

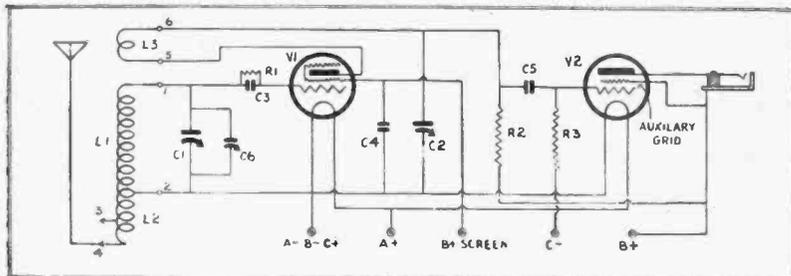
operation from 20 up to at least 100 metres. The grid coil is tuned by a .0005 mfd. variable condenser. This large condenser is required for the broadcast band, and it is really too big for the short waves. However, the two-plate midget connected in parallel with it permits the fine tuning that is so necessary when a short-wave broadcast station is being received.

The reaction is arranged in quite a normal

manner. A condenser is used for the reaction control, and since one side of it is connected to the metal panel any hand capacity effects are avoided. The connections of the detector differ from ordinary arrangement in that provision is made for the supply of screen-grid voltage. Also, a by-pass condenser is connected between the screen-grid and the negative filament supply. The plate resistance of such a detector is extremely high, and for this reason it is not possible to use an ordinary audio transformer without serious distortion resulting. Instead, a resistance is used. This resistance does not match that of the valve by any means but at least it is fairly constant with changes in frequency. The very high value of one quarter megohm (250,000 ohms) is used on account of the high plate resistance of the valve, and this results in quite a big voltage drop since the plate current is flowing through it. However, with 135 volts of plate supply the voltage which actually reaches the detector plate is quite sufficient for satisfactory operation.

The coupling condenser to the grid of the audio valve is of .04 mfd. A larger one may be used if this capacity is not obtainable, but it should not be any smaller. The grid leak through which the audio valve gets its bias in my receiver is 4 megohms. It could be 2 or 3 megohms if gridleaks of those resistances are handy. The plate circuit of the audio valve is quite conventional, a jack being provided for the speaker or 'phones. A speaker will be used on the broadcast band unless DX is being attempted, but on the short-waves the use of 'phones will always be necessary unless an external amplifier is used. In such a case it would be advisable to replace the pentode with an ordinary amplifying valve so that it would be able to feed the first audio transformer in the amplifier satisfactorily. The auxiliary grid of the pentode, which is connected to a small terminal on the side of the valve base, runs to the positive "B" lead, as shown in the diagram. So much for the circuit. It surely is simple enough and as free from expensive apparatus as anyone could wish.

THE RANGE OF THIS RECEIVER EXTENDS TO THE SHORT-WAVES



MOUNTING THE PARTS

The lay-out of my receiver is modelled quite closely along the clean lines of the "International Two" described recently in "Wireless Weekly." In fact, the set started out to be that before I decided to have a shot at using a screen-grid detector. The coil unit is placed almost in the centre of the baseboard and immediately behind the tuning condenser. On each side of the coil and slightly behind it are the two valve sockets. Between them are the two resistors, and behind the resistors are the other small items which complete the set. This lay-out is quite simple, and gives short leads where they are desirable. A battery plug is located at the left rear corner of the base. Personally I prefer such a plug and socket to the usual terminals, since all batteries can be disconnected in a moment simply by pulling out the plug. Short circuits between the ragged ends of wires on the terminals are also avoided. Terminals on a strip of bakelite can be used, of course.

In building the receiver, the first thing to do is to obtain a panel and baseboard of the sizes given in the list of parts. Aluminium can well be used for the panel since no parts have to be insulated from it and it at once avoids all hand capacity effects. The only difficulty is in getting a good-looking finish on the surface. Possibly a piece of metal already provided with a "Baked" finish could be obtained from the firms making metal cabinets, but if this is not so a good finish can still be obtained by "stripping" the surface with a strong solution of caustic soda then giving it a thin coat of Duco clear lacquer. The baseboard of this set is a piece of five-ply wood one half inch thick. If ordinary one-ply wood is used it should be a little thicker so that it will not warp. Its surface can be given a coat of the Duco if desired. When the holes have been drilled in the panel for the two midget condensers and the tuning condenser three holes should be drilled along its lower edge for the wood screws which hold it to the base. Then the condensers can be mounted on it and the base and panel assembled. After studying the lay-out diagram and the illustrations the coil base, the valve sockets, the resistors, and the condensers may then be screwed to the base in approximately the positions shown.

WIRING NOT DIFFICULT

In my set I used solid "Celescite" for all wiring, and all joints were soldered. If a soldering iron is not available the wires may be looped around the various terminals in the usual manner, but the soldering makes it possible to do a very much better job in half the time once the idea of soldering has been mastered. An electric soldering iron, of course, is infinitely easier to work with than the old type. No terminals for the aerial have been included except those provided on the coil base. Leads can be run from these to other terminals on the side

of the baseboard if necessary, but they are really a waste of good terminals. Similarly the jack may be replaced by a couple of terminals either at the same place on the base or at some other point. The jack is much more convenient, though, and its present location allows short, simple wiring.

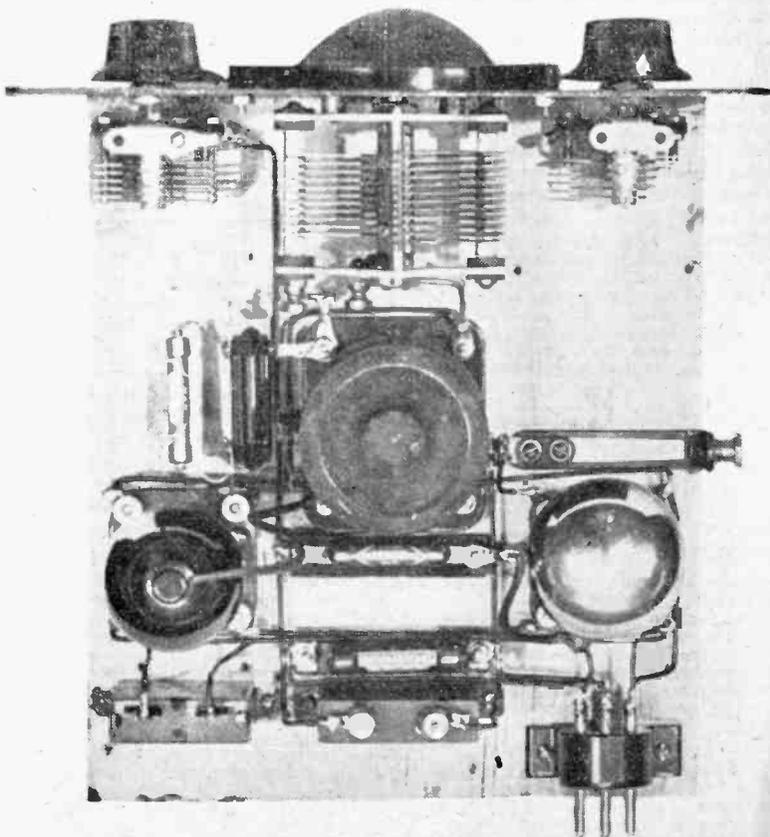
When the wiring has been completed according to the circuit diagram the very first thing to do is to check it over carefully. Particular attention should be given to the leads running to the terminals where most of the faults are likely to be found. The plate terminal on the base of the detector is now the screen-grid terminal, and its connections should be watched. The plate of the detector, of course, is the terminal at the top of the valve. The auxiliary grid lead from the audio valve must also be connected with care. It must go to the positive "B" lead, and not to the side of the phone jack which runs to the plate of the valve.

PUTTING THE SET TO WORK

When the wiring has been found to be quite in order the set may be connected up to the batteries. The battery supply includes a four-volt accumulator, three 45 volt "B" batteries, and a bias battery which has tapings up to about 15 volts. Three dry cells can be used in place of the accumulator since the filament drain is only .21 amperes. However, they would not last very long if the set was left running all evening as most broadcast receivers are. Also two 45 volt "B" batteries could be used instead of three. This would mean slightly lower volume and poorer reproduction. When 135 volts are used, the screen-grid lead should be connected to 22½

The Parts Required

Panel of aluminium or bakelite, 9in. x 6½in.
Baseboard, 9in. x 8in.
One A442 Philips screen-grid valve
One B 443 Philips pentode.
One AM5 Lewcos coil and coil base.
Two UX sockets—Pilot.
One Advance centralign variable condenser, .0005 mfd.
Two Advance midgets—11 plate. One cut down to two plates.
One Sangamo .00015 mfd. fixed condenser.
One T.C.C. .04 mfd fixed condenser.
One T.C.C. .5 mfd. fixed condenser.
One carborundum .25 megohm fixed resistor.
Two 2 megohm gridleaks.
Phone Jack. Five terminals or battery plug.
Vernier dial.



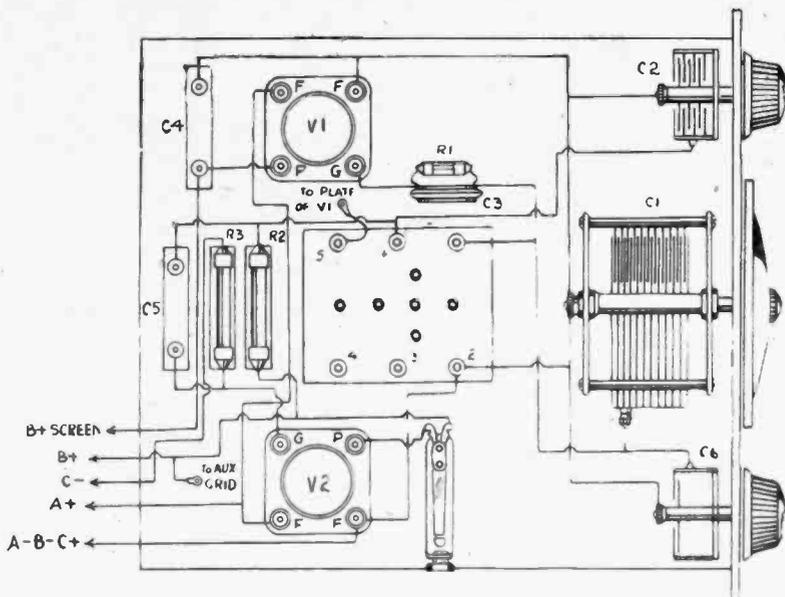
Plan view of completed set.

BETTER RESULTS OBTAINABLE WITH USE OF A.C.—SEE NEXT WEEK

volts. The screen-grid valve as a detector requires a lower screen-grid voltage than when used as an amplifier, and then it must be remembered that the actual plate voltage is well below 135 on account of the drop in the plate resistor. This explains the low screen-grid voltage used. With 90 volts of "B" supply an even lower screen-grid voltage will be desirable. It will be found that the detector can be made to oscillate more readily with the high screen-grid voltages than the lower. This comes in useful on the short-wave bands. If it is not possible to make the set oscillate with some of the short-wave coils it is only necessary to increase the screen-grid voltage slightly.

When running from the four volt accumulator no filament rheostat is used. When the battery is fully charged this means that the voltage is slightly in excess of the rating of the valves. For this reason, a 30 ohm rheostat would really be a desirable addition. The set will work well without it, but the life of the valves may suffer to some slight extent.

As will be found from the instructions that come with the Lewcos coils, there are two terminals for the aerial. One of these includes a greater number of aerial turns than the other, and is, therefore, more suitable for small aerials or for locations where interference from near-by stations is not probable. When the receiver is put into operation it will be a simple matter comparing the result with the aerial first on one ter-



minimal and then on the other. As on any other simple receiver a fairly large aerial will usually be desirable. A single wire about 80 feet long and about 25 feet high would be satisfactory, though a smaller one will give good loud speaker reception in the suburban areas. In the country an even larger aerial could be used to advantage.

AN unusual musical programme is promised from 3AR on November 18, when Ida Laver and Albert Schobel will be heard in some Swiss and Austrian folk songs. Both artists specialise in the tuneful folk lore of many mid-European countries. The songs will be given in their original setting—tunes that have been handed down for generations.

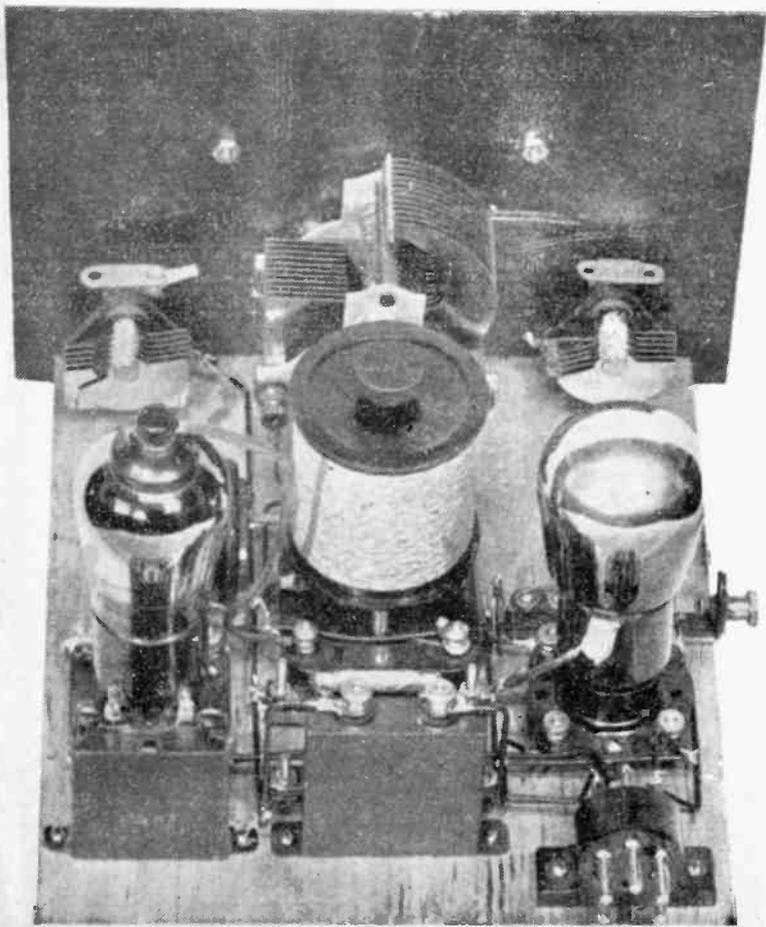
A PROGRAMME of Dickensian studies will be presented by Frederick Whitlow from 3LO on November 23, which will include portraits of Salrey Gamp, Uriah Heap, and Dan'l Peggotty.

THE series of "Stories from the Operas" given by Miss Lucy Ahon, M.A., from 3LO helps listeners to a better understanding of the author, the period of the music, and the many historical events that are connected with certain operas.

ROSINA DOWNS will be on the air from 3LO on November 21. Miss Downs will be remembered in connection with many performances of the Conservatorium Operatic Society when she portrayed leading parts in "Cosi Fan Tutti" and "The Magic Flute."

MISS M. LUSH, who has made an intensive study of the training of young children, will speak from 3AR on November 20, when "Creating a love for music in the mind of the Child" will be discussed.

ETTA BERNARD, champion contralto soloist of the recent Ballarat competitions, will be heard from 3AR on November 23.



This Week's Programme Personalities

MR. BELL was born on a farm at Grenfell, and, at the age of seventeen experienced the mysterious pull towards an intellectual life. The mysterious pull towards an intellectual life. The words—our—are worth noting. They constitute Mr. Bell's explanation of the Rev. V. C. Bell, B.A.—he encountered a mysterious pull—an Inexplicable Impulse—towards an intellectual life—towards a Life of Thought—a Life in the Mind. It is an explanation which amply justifies its subject.

The way was open into the Methodist ministry, and Mr. Bell spent two years at Newington College, afterwards going from place to place on the circuits in New South Wales. During this period he spent three years on the Tweed River.

In 1913 he went to England, where he stayed a year, studying for seven months in London under Sylvester Horn at Whitfields, returning to Sydney in 1914 to take charge of the William Street Church, where he remained until 1917 when he joined the Presbyterian Church.

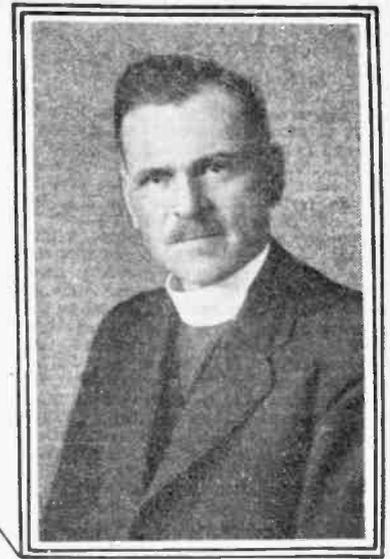
From 1917 till 1921, he looked after the Presbyterian Church at Greenwich, and at the same time filled the position of Assistant Master at the Metropolitan Business College in the General Education Department, where he specialised in the teaching of English and General Knowledge subjects. In 1921 he was called to Newtown, where his six-year ministry proved to be one of the most successful in the history of that church; so much so that when Invercargill tried to get him, the Newtown congregation would not allow him to go on any account.

However, he was called to Strathfield in 1927, where he has spent two most successful years; and although he was invited to a big church in Melbourne in June, he withdrew, feeling he would rather remain here.

Rev. V. C. Bell, of Strathfield, is one of the most active of New South Wales clergymen. He is Chairman of the Presbyterian Social Service Committee, over which he has presided for nine years, whose office is to watch over the poor, running hostels throughout the State, a maternity hospital in Annandale, and directing hospital chaplains' visitings.

He is also president of the Council of Churches, which represents almost every denomination in Australia, and he has done

V.C.
BELL
B.A.



much, both as president and secretary, towards strengthening the influence of this body and impressing its significance upon the public.

And he speaks considerably over the air. His "Public Forum" talks on Monday at noon have proved popular, and his interesting talks from 2BL on Tuesday nights have always an attentive audience. It was Mr. Bell, who at the invitation of the A.B.C., inaugurated the 2FC morning devotional services, in which he occasionally takes part. The Strathfield Presbyterian Church service will be broadcast next Sunday.

"In my 'Public Forum' talks," says Mr. Bell, "I like to give people a view of life which will make them feel it is worth while; I hope to encourage them to undertake the biggest things in their power; to feel that work a privilege." He has the knack of expressing himself simply on the most abstruse questions, and the ability to choose topical subjects which will both interest and instruct his listeners to illustrate his main arguments.

His varied experiences, and especially his business training, have given him a broad and practical attitude towards most modern problems. For instance, "The competitive system of commerce is the only thing in

consonance with our nature," and he holds that if anything is wrong, it is our natures, "The heart of the trouble is the trouble of our hearts."

His great hope is for a united and tolerant Christianity. "Religion," he says, "should be nationalised; and certainly wireless broadcasting, by emphasising Christian essentials and minimising sectarian differences, will be a powerful helper, if properly managed."

ON November 23 listeners will hear Herbert Dunstan, whose baritone voice enabled him to carry off the championship at the recent Ballarat competitions. This singer is at home with some of the robust baritone numbers featured by Harry Dearth on his last visit to Australia, and, for his first programme Mr. Dunstan will be heard in "Close Props" and the rollicking "Captain Mac."

A TALK that should be of interest to the business man will be given from 3LO on November 20 by Mr. Clarence Weber, who will speak on "The Necessity of Exercise." Mr. Weber needs no introduction to listeners, for he is Melbourne's leading authority on the subject of exercise in connection with physical fitness. He has devised a special series of exercises that should make a special appeal to those who have little time.

Madame Grieg—A Eulogistic Poem

Madame Grieg, Madame Grieg,
Never seems to feel fatigue;
"That," you'll say, "is naught to us"—
Listen, then, to what she does:

She sits at the end of the Programme Dept.
(Of critics wept, of critics wept!)
And deals with artists' applications
For broadcast programme reservations.

And artists come in all day long,
Mouths full of Ego, arms full of song;
And one by one the artists moo
"What shall I do? What shall I do?"

Then Madame Grieg gives kind advice—
"This, this, and that will be quite nice;
But that one, don't you think? is not
Exactly . . . if you can see what . . ."

For Madame has abundant tact,
Which will not let her state the fact
That Cwildeene Smyth's "O willy wool"
is something you're not equal to.

Mondays and Wednesdays, off she goes
To listen to the art of those
Who think their art should earn a share
Of so much gold made out of air.
(She goes on Fridays, too; and this
Shows just how great her courage is).

No longer by these cares oppressed
Does Madame then retire to rest
And read an evening paper? None!—
She plays the silvery Dulcitone!

O Dulcitone! O Dulcitone!
O twinkly, tinkly Dulcitone!
Your gentle measures do impart
The placid beat of Madame's heart
(And envious harpist angels groan,
"Why can't WE play the Dulcitone?")

But sometimes comes th' impassioned Hour,
When the Soul craves a broader Power;
Then Madame seeks an operatic,
Musical, or a dramatic
Theme—some splendid art-effluxion,
Fit for studio production.

Listeners must then begin
Seriously to listen-in;
For no Opera can bore ye
While this lady tells the story—
All must hark to Madame Grieg.
Madame Grieg,
Madame Grieg,

Is a country dance (or gigue),
Trip around her, tread the mazes,
Fling her roses, sing her praises—
She is gentle, she is fair,
She's a goddess of the air,
Blessing everybody there.

Kindly, tactful Madame Grieg!
Gentle, placid Madame Grieg!

WHAT TO TUNE IN

Dance Numbers "From Manila to Hongkong"
 "The Tomb of Osiris" Coogee Celebrations
 Sir Henry Braddon International Cricket
 "La Traviata"

IN the radio play "The Tomb of Osiris," to be broadcast from the "Little Theatre" through 2FC on the evening of Thursday, November 21, the Sydney University Players, in collaboration with Mr. Laurence Halbert, will present what is likely to be their most successful production to date.

The play has been specially written in the light of the latest developments in radio dramatic production by John Pickard, one of the players—a law student who is trying his hand at play-writing for radio. It is divided into two acts, each act containing two scenes. The action of the first act takes place in ancient Egypt in the times of the great Pharaohs. In the second act the action is transported into modern times, the final scene taking place inside the Tomb of Osiris, where the play reaches a terrific climax.

Act I. is said to be a masterpiece of atmospheric effect. The play opens at ancient Thebes in the Palace of Queen Hatshepsut, the greatest of all Egyptian queens. The exotic pageantry of Hatshepsut's glamorous court is interrupted by the arrival of the young King of Babylon, who comes to woo the Queen, and with Oriental magnificence offers wondrous gifts which he has collected from the ends of the earth as tribute to her might and beauty.

But Hatshepsut scornfully repulses his suit. She seeks the love of no living man, but of a man yet to be born. For Selene, the Moon Goddess, in a divine message has promised her that if she can keep the spark of life in her body for 33 centuries then there will come to her such a lover as she has never seen before. So Hatshepsut has commissioned her royal magician, Seti, to discover the secret of the great god Osiris that will give to her eternal life.

Seti, after a painstaking quest, discovers the secret potion that has enabled the god Osiris to keep his earthly body from decay. From this potion he distills the essence of eternal life for Queen Hatshepsut. The Queen eagerly drinks of the essence and falls as though in death. All Egypt, believing their beloved Queen dead, mourns her passing. In the second scene of Act I. Hatshepsut is buried in the tomb of the god Osiris himself with the splendid panoply of a Royal burial.

The cast will comprise Miss May Hollinworth, Miss Mimi Spaul, Miss Marjorie Annan, Mr. John Pickard, and Mr. Ronald Andrews.



John Pickard.

THE WEEK'S TALKS



The feature talk of the week will be given by Sir Henry Braddon from 2FC at 6.40 next Sunday. His subject will be "The Wool Industry."

DAY SESSIONS

FRIDAY, NOVEMBER 15.—2BL: 1.15, Mrs. Meredith Atkinson, "Geneva"; 2.30, Major Sanford Morgan, "Polonnaruwa"; 2.45, The Story-teller, "Avoirdupois of Genius"; 2FC: 12.0, Captain L. Roberts, "Native Tribes of South Africa"; 2.2, Michael Savtelli, "Terra Australis—A talk to arouse real love in Australia" (as though the flappers weren't enough—printer's devil!); 4.0, Redgum, "Gardening."
 SATURDAY.—2BL: 10.40, G. W. Cooper, "Gardening."
 SUNDAY.—2BL: 5.10, C. N. Baeyerz, "Modern Philosophy from Bacon to Bergson."
 MONDAY.—2BL: 1.15, Mairon, M'Millan, "Plunket Mothercraft—a Study of the Toddlers"; 2.30, W. Hazeldine, "Artistry of Leather Work"; 3.45, "Bringsa," "With the Northern Aborigines catching Alligators."
 2FC: 12.0, V. C. Bell, "The Public Forum"; 3.2, A. S. Cochrane, a reading; 3.0, Educational Department; 4.0, Rose Antill de Warren, "Love Stories of Famous Women."
 TUESDAY.—2BL: 1.15, M. H. Ellis, "Electric Appliances"; 2.30, Fred. Arlington-Burke, "Nature's Laws of Compensation, No. 2"; 3.45, Tom Gurr, "The Maori as Man and Warrior."
 2FC: 12.0, Illustrated music lecture by Carlton Fay; 2.2, Museum talk; 4.0, Gertrude Mack, "Manila and Hongkong."
 WEDNESDAY.—2BL: 1.15, Goodie Reeve, "Aids to Personality"; 2.30, Dr. Harold Norrie, "Outstanding Personalities in Australian History—Hamilton Hume"; 3.45, C. Price Conigrave, "Vlaming and Poltneet Islands."
 2FC: 12.0, G. W. Mann, "Do You Know Your Child?—the Adolescent."
 THURSDAY.—2BL: 1.15, Mrs. Mildred Musculo, "Vocational Guidance"; 2.30, Brunton Gibb, "Random Remarks"; 2.45, F. H. Raward, "Port Said—the Edge of Egypt Mystery."
 2FC: 12.0, A. S. Cochrane, a reading; 2.2, C. N. Baeyerz, "Spoken English"; 4.0, Francis Jackson, "The New Italy."
 EVENING SESSIONS
 FRIDAY.—2BL: 7.5, Claude Corbett, "Sporting"; 9.30, "An Afternoon with George Bernard Shaw."
 2FC: General Antill, "Reminiscences—Over the Nuts and Pops."
 SUNDAY.—2FC: 6.40, Sir Henry Braddon, "The Wool Industry."
 MONDAY.—2FC: 9.0, Steele Rudd, "The Miserable Clerk."
 TUESDAY.—2BL: 9.30, V. C. Bell, "The Man with the Liver."
 WEDNESDAY.—2BL: 7.5, Graham Kent, "Bridge."
 2FC: 8.20, C. N. Baeyerz, "Dialect Stories."

THE official opening of the shark-proof bathing area at Coogee will be broadcast through 2BL on November 16. This will be one of the biggest events in "Coogee Week," which has been planned by the progress association of that suburb to exhibit the various improvements that have recently been made.

The Mayor will open the shark-proof enclosure, and the new surf life saving clubhouse, and immediately after the Australian flag will be hoisted aboard the H.M.A.S. Sydney, now opposite the pier office. Dancing—and games on the pier will round off the afternoon.

Coogee municipality cannot be sufficiently congratulated on its enterprise in erecting this enclosure, which bids fair to prove itself the safest method on all beaches. This will be one of the first open-air broadcasts of the summer season, to be carried out by the Australian Broadcasting Company, Limited.

CEC. MORRISON'S Dance Band will play in a very different setting to its usual one on November 20, when a broadcast will be given through 2FC from the new Dutch liner, Nieuw Holland. Between dance numbers the vessel will be described by the announcer, and in this way two broadcasts will be combined in one—a dance night and an interesting description. Dancers resting between items will be given material for conversation, and interesting information at the same time.

"FROM Manila to Hongkong" is the title of Gertrude Mack's talk from 2FC on November 19. Miss Mack has only just returned from her second trip to Japan. She has broadcast previously in Australia, also in America, in California, and Mexico.



Gertrude Mack.

"Traces of the devastation caused by the earthquake are still visible in Japan," she said. "Some of the streets are buckled up, and the Bluff, which I remembered from my previous visit as the residential quarters of the European population, has entirely disappeared. It was just wiped out. Although the people in the town seem very progressive and industrious, if you go into the real farming districts it is the old picturesque Japan you find."

Although the people in the town seem very progressive and industrious, if you go into the real farming districts it is the old picturesque Japan you find.

VIOLET MCGREGOR, violiniste, will be making her reappearance at 3LO on November 18.

IN connection with the Lord Mayor's hospital radio community singing, which is held at the Town Hall every week, 3LO is conducting a Radio Voice Competition for the purpose of "discovering" new talent for broadcasting. The competition is open to everyone, and particulars may be obtained from Mr. Frank Hatherley, of 3LO Melbourne.

STATION 3LO will broadcast a description by Mel Morris of the cricket match between England and Victoria, to be played at the Melbourne Cricket Ground on Friday and Saturday, November 15 and 16.

THE revue staged by the Humphrey Bishop Company will be relayed through 3LO to 2FC on November 20.



William Bowyer.

MR. WILLIAM BOWYER, bass, will be heard from 2FC on November 15, featuring "The Lute Player" and "The Floral Dance" type of ballad. Mr. Bowyer is the conductor of the Ashfield Choral Society, which recently won the choral section of the Bankstown Friendly Society's Eisteddfod.

MR. NORMAN LYONS, of the A.B.C. Younger Set Session, has received permission from Messrs. Dorman, Long, and Company, contractors for the North Shore Bridge, to hold an inspection for members of Mr. Norman Lyons' and Miss Gwen Varley's Boy and Girl Sessions from 2BL on Saturday, November 30. All those who wish to participate are asked to assemble at the foot of the escalators at Milson's Point at 10 a.m. on that day.

THE early evening sessions from 2FC and 2BL will, in future, be slightly altered. From 2FC the children's session will be given as usual from 5.45 to 6.45. The Dinner Music will then be broadcast until 7.20, when the Quartet changes over to 2BL wavelength, and the A.B.C. Sporting Service is broadcast through 2FC. At 7.45 there will be the market reports and news through 2FC, followed by programme announcements.

THE 2BL Evening Session will commence at 6.15 with the Dinner Quartet, followed at 6.45 by the Younger Set Session. The markets will be given between 7.5 and 7.20. This broadcast will take the place of the talk on "Bridge" by Graham Kent on Wednesday night and the talk on "Sporting" by Claude Corbett on Friday night. These talks will be included either in the afternoon or later evening session. On Saturday night the 2BL Sporting Service will be given between 7.5 and 7.20 p.m. After the markets the Dinner Quartet will play until 7.45 p.m., followed by an Austradio Musical Reproduction of non-instrumental records.

SIR HENRY BRADDON will be the Feature speaker from 2FC on Sunday, November 17, from 6.40 to 7 p.m. Sir Henry has chosen as his subject "The Wool Industry," in which he will give a brief survey of the way in which the wool industry has been worked up in Australia, the improvement of the sheep and staple of the wool.

SIR HENRY BRADDON is of the opinion that the position wool occupies in Australia is one in which it presents great capacity for adjustment between this country and the external world in the liquidation of Australia's National Debt.

THE A.B.C. has arranged for descriptions of all the big international and interstate cricket matches during the present season, and will also give special attention to the minor matches in which the interstate colts will take part.

The first match of the season to be described in Sydney this year at alternate periods through 2BL and 2FC will be the game between the M.C.C. team and New South Wales, and which will be played at the Sydney Cricket Ground on November 22.

This will be followed by the match, Australia v. The Rest, commencing on Dec. 6.

MADAME GRIEG has been responsible for a number of interesting Sunday afternoon broadcasts, and "La Trilavata," which she has arranged for November 17 for broadcast through 2BL, is one of the most appealing of Verdi's operas. The pathos of many of its scenes cannot be denied, and it is full of graceful melody. The story is derived from Dumas' "La Dame Aux Camelias," and is the well-known plot of the woman of doubtful reputation who sacrifices her happiness for the sake of a good man. He is led to misunderstand the motive of her renunciation, and their mutual unhappiness provides the interest of the theme. Why this opera was censored as immoral when it first appeared in London will never be known, for the story is treated with great delicacy. Madame Grieg's talks add to the listeners' interest in the libretto, while the music is its own recommendation.

Madame Grieg, while in New York, was a Lecturer on Music to the Board of Education, and associate teacher and vocal coach with the celebrated Madame Louise von Fellitsch, at the Metropolitan Opera House, New York. She has broadcast from the American stations WEAF and WJZ as a dulcitone and piano player, lecturer, and arranger of classical programmes.



Key caricatures Kathleen Roe.

MR. JOHN WARREN, tenor, who appears for 2FC on Sunday, November 17, is well known to the patrons of the State Theatre. On Sunday night he intends to feature light ballads, and will sing a duet from Gounod's opera "Faust" with Camille Alder.



John Warren.

THE Rev. Albert Thornbill, who will conduct the morning service from the Hyde Park Unitarian Church on November 17, which will be broadcast from 2BL, is well known in New Zealand for his broadcasts from IKA, Auckland, where he was minister of the Auckland Unitarian Church during a period of nine years. Before he went to New Zealand he was in charge of the biggest City church in Manchester, England.

DR. HAROLD NORRIE'S talks on "The Outstanding Personalities in Australian History" have been greatly appreciated by listeners, and his talks on "Hamilton Hume" from 2BL on Wednesday, November 20, will prove interesting.

When the name of Hume is mentioned, one thinks of Hovell, the intrepid explorer who accompanied Hume on many of his explorations. Hamilton Hume, in company with Hovell, left his home at what is now the road from Campbelltown to Appin, and proceeded south, exploring the country near Melbourne, discovering the Yass river, and the extensive plain country between there and the present site of Albury. They discovered, crossed, and partly explored the Murray River, finding a way to the sea at Westernport. Hume's activities led to the opening up of Victoria, and the establishment of the City of Melbourne.

MISS INA VARINI, who will sing from 2BL on November 18, has been broadcasting for several years. She recently toured Queensland and West Australia with the J. C. Williamson production of "Sally."

THE Marrickville Silver Band has been in evidence for 38 years, and during all that time it has justified its existence with a performance as sterling as its silver. Besides its ordinary duties, it has brightened the lives of broadcast listeners at frequent intervals, having rendered no fewer than 200-odd numbers over the air. It will continue in this laudable aim on November 18, when it will give its two hundred oddth number from 2BL.

MISS NORA HILL, who will be heard from 2BL on November 20, won the applause of Sydney's critics when she gave her first recital at the Conservatorium on her arrival from Dublin. Before she left her own country Miss Hill gained the highest award in all Ireland for interpretive singing, and also a gold medal in the section which had been won by John McCormack in previous years.

JIM BROWNING

Illustrates Some Holds

By FRED JOHNS

(Official Wrestling Announcer for the A.B.C.)



(1) The Flying Mare. This is a favorite hold of George Zarynoff. It is a Cornish throw, and is specially applicable to catch-as-catch-can style. It is taken from the referee hold by taking your opponent's right wrist in your right hand, hold tightly, turn your back swiftly to him, and slightly stoop in doing so, at the same time gripping the upper part of the captured arm and bringing it over your right shoulder.

(2) Now stoop slightly and swing him by the hold on his arm clean over your shoulder to the ground in front of you. In actual practice the turn and throw form one continuous movement.

(3) Your opponent has had a very hard fall, and there is very little life left in him. He is now easily pinned with an arm bar and a body press.

(4) This is an ordinary common or garden

type of forward chancery. Facing your opponent, drag his head down under your left armpit and secure a hold across the chin with the lower part of your arm. Just lean back slightly, keeping hard pressure on all parts secured.

(5) This hold was originally meant to be a forward chancery, but it often happens through the wriggling of an opponent that your arm slips down under the chin, thereby turning into a terrible strangle. An unscrupulous wrestler will often do this purposely.

(6) This is a Japanese strangle secured from the rear. The right arm is around the throat, seizing your left forearm behind, and your left hand seizing your right arm below the shoulder.

(7) The counter for the Japanese strangle. The head of the opponent is grasped and he is drawn forward. By crouching, a complete throw may be obtained.



THE wrestling match at the Sydney Stadium on Monday, November 4, between Jim Browning (16 stone), of America, and the Bohemian wrestler, Joe Zigmund (15st. 11lb.) was decidedly the roughest that has been seen in Sydney this year. One of the daily papers states that the wrestlers used everything but machine guns and bayonets to secure falls. They threw each other out of the ring in turn, and at one stage of the match the police had to intervene.

The match was originally to have been between Ad. Santel and Jim Browning, but Santel met John Pesek in Melbourne on the preceding Saturday night. This match strained his foot and he was unable to appear. Therefore, Joe Zigmund was called upon at the last moment.

From a broadcaster's point of view I must confess that I enjoyed the match immensely, not on account of its roughness, but because of the humorous episodes that transpired throughout the whole match. At times I was so convulsed with laughter that I found it difficult to give a coherent story of happenings through the microphone.

Nichols, Edwards, Karasick, and Kilonis were "cavemen" wrestlers of a high degree—good showmen who pandered to the public with this class of wrestling. The last people from whom to expect such a genuine outburst of this kind, however, were Browning and Zigmund. In this case, it was real rough stuff, received and taken by both men without complaint. No man asked for soft measures once the fun started, and expected to give none in return. Further, each is too great a sport to blame the other for starting the fireworks. Crude locks and grips were used, but only once had the referee to caution one of them that they were too close to using the one forbidden hold—the strangle. This hold can be cloaked and applied with all sorts of dressings. The illustrations as shown herewith by Browning are how the various types of strangle holds appear and also a counter.

Browning and Partner (in Figs. 1, 2, and 3 this is Mr. Johns).

Wireless Weekly

Incorporating "Radio in Australia and New Zealand." $\frac{1}{4}$

FRIDAY, NOVEMBER 15, 1929.

RADIO MEN WANTED

THE amazingly growing field of radio offers many opportunities to the young engineer and the technically-minded young man, both in departments of research and development and the more industrial aspects of production and maintenance.

There are more chances for advancement and the establishment of a reputation in the various ramifications and departments of pure development work than has been the good fortune of the technical man to enjoy heretofore.

Trained men, whether of the high school, technical school, university, or whether self-trained, are in demand throughout the world, and soon find their niche in the particular kind of radio work that takes their every effort and enables the present and future developments of radio and allied fields to be thrown open for public use, to add to the comfort of mankind.

Most large schools and universities to-day feature courses in physics, chemistry, and engineering, that give the young man with a scientific urge the grounding of knowledge which will fit him for his chosen work. This may vary as he is inclined. He may study those rudiments of electrical engineering, with special emphasis on the study of high-frequency phenomena, the design of circuit work, and the calculation of circuit constants for transmitting and receiving apparatus. Or he may choose to enter the acoustic field of study, and make a thorough investigation of electro-acoustical work, that is coming so much to the fore in radio, and even in other allied fields. He may, on the other hand, be more interested in the study of wave propagation, and extend his efforts in the direction of mathematical researches in this field.

There are many problems still to be solved in radio: the problems running the gamut from the determination of the best short-waves for day and night transmission over long distances to the development of television and radio control of machinery and moving vehicles, not to mention the development of all kinds of radio transmitting apparatus, receivers, and accessories.

All kinds of men are needed—specialists in their own particular kind of technical endeavor—and the men who will do these things are those young men who, having left the primary schools, are now deciding in favor of the trained profession of radio as a vocation of life.

World Wants Radio Talks and Plays

BY a peculiar coincidence the mail which arrived both from England and the U.S.A. this week brought information to the Australian Broadcasting Company, Limited, that the listening public in Europe and America are now calling for talks, sketches, and plays to take the place of music which had predominated in the programmes.

The American correspondent of the A.B.C. writes:—

"We have been in touch this week with Mr. Leonard Cox, who puts on the Main Street sketches from some of the stations here. He has been most successful as an author and a stage director, and his sketches and plays have proved most popular, so much so that listeners now write to the stations stating that they prefer this form of entertainment to music. We find over here that at least for the time being music seems to have run itself out by so much constant repetition, and radio listeners by tens of thousands are now turning to the dramatic and comedy sketches in preference to the musical programmes. Travel talks and educational talks are also now in the boom."

The English correspondent of the company writes:—

"The most notable feature in broadcasting in England and on the Continent is the rapid displacing of musical items by talks, plays, and sketches. Where at one time listeners merely tolerated talks and plays, they are now demanding that these features shall have their full share of the programme

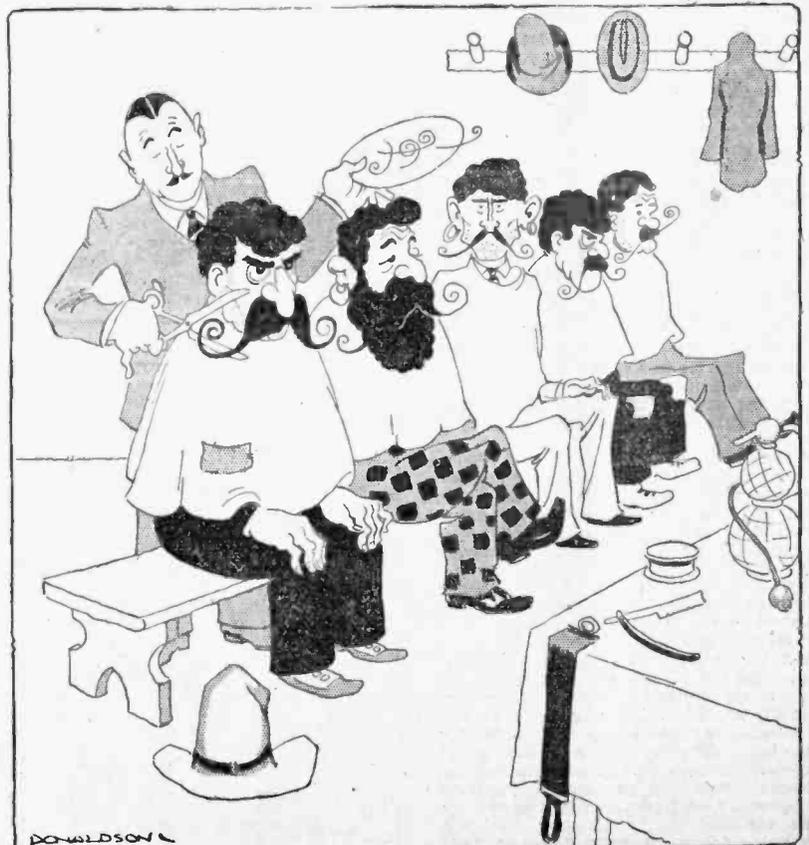
alongside of the musical offerings. The popularity of short plays and sketches is mainly due to the fact that the stations are now realising the importance of atmospheric effects, and are also seeing that a new radio technique is necessary in those who actually take part in these presentations."

It is very interesting to note that the landslide to talks, plays, and sketches in overseas countries is coincident with a similar movement here in Australia. The correspondence of the Australian Broadcasting Company, Limited, shows an ever-growing preference expressed by listeners in the direction of plays and talks. Here, too, it is felt that the establishment of an atmosphere by the use of what may be termed stage effects has popularised these offerings. This phase of broadcasting is very expensive, as in comparison with the individual artist occupied in so many musical items, a number of characters have to be filled in the sketches and plays.

The best of the talks also call for much preparation and the A.B.C. determined that in arranging its roster of subjects the educational side was not to be neglected by a super-abundance of amusement topics.

Exactly what has called for this worldwide demand for the spoken word as against the musical offering is hard to gauge, but in a period when the talking film has so rapidly dismissed the silent picture from the screen, it might be that the outcry for speech as against music is the concomitant in the radio world.

SECRETS OF THE RADIO INDUSTRY—4



Utilising Italian immigrants in the production of low frequency coils.

*A New Listener
Joins the Ranks
of the Critics*

Dear Sir,—As I have only recently joined the ranks of owners of new receivers, I am unable to make a comparison of the difference between the present broadcasting programmes and those of the old regime, but if you will kindly permit the space, I would love to join the ranks of critics, and enter into the spirit of the fray, as it were, and inflict some of my views and criticisms upon you and your readers.

In the first place I would say that I don't think anyone should take too much notice of such letters as appeared in the issue of October 25, over the sobriquet of "Disappointed," particularly in so far that, reading between the lines, this writer appears to be one of those individuals who cannot modernise themselves or their ideas. It would be positively ridiculous to have to listen to more church services and devotion such as he insists should be broadcasted. There is a time and place for everything, and I am one of those who believe that the present application of "wireless" is for the amusement of the general public. Not everybody can afford to possess a set, therefore, I take it that those of the people who do fortunately possess a set, use it to a vast extent for the entertainment of themselves and friends, not to sit in a comfortable chair, plus a pipe and tobacco, to listen in to some minister of religion praying and chanting for hours. If "Disappointed" wants that, let him go to the right place for it. But probably he is too tired for that; he is one of those who evidently wants his God and his religion brought to him. He doesn't think it worth while to go out to the right place for it—what hypocrisy. Also I think "Disappointed" must be closely related to the celebrated Aberdonians—he wants "every bit of news" (all he can get for his money). Sir, I have no time for such paltry criticisms as his, they appear to me to emanate from a mind that has not yet become balanced.

During the past few weeks I have read all the letters that have appeared in your columns, and I can't quite understand why some of your correspondents state that there is too much jazz and too much canned music. In my opinion, these are infinitely much more preferable than the musical abortions of the 2FC Instrumental Trio and the Instrumental Trio of 2BL. Their items are not only badly chosen and arranged, but to me are nothing less than libel on the entrails of a well-known member of the fine tribe. Again the programmes of 2BL and 2FC are often very similar, and contain exactly the same song or item (but often by a different person), and possibly twice or thrice in the one session. A bad arrangement that; and one that shows that no great care is taken in the compilation of the programme.

But the crux of the matter is this, that some want the classics, and some want jazz and popular melody. There should be no difficulty about that, let either 2FC or 2BL on Monday nights broadcast the classics, and the other station can then set about the arrangement of a popular presentation, and on Tuesday nights they can reverse the order or procedure, and so on right through the week, and they can do the same with their day-time sessions. In my opinion too much time is taken up with such items as "Wo-

The Safety Valve

Readers are urged to express their opinions on matters pertaining to broadcasting. If you have some grievance, if you have some constructive criticism to offer, 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.

men's Interest Talk," "Household Hints," "Household Helps," "Talks on Gardening," "With the Pilgrims to Mecca," "Morning and Evening Stories," "Business Efficiency Talk," "Mahratta County," and all such other trash.

Volumes on the whole of these could be purchased and kept on hand for a few shillings, or else you can subscribe to a school of arts or a lending library. People buy a receiving set, and pay a license for its use for entertainment purposes, not religious purposes, and not to listen to such trash as listed above. I am not a jazz crank, and moreover, cannot and will not dance even one step, but I prefer melodious memories to some of those we are compelled to listen to, and, moreover, I prefer the so-called "canned" music to those awful indulgences of the instrumental trios.

In conclusion, Sir, might I suggest that Mr. Stuart Doyle go to the expense of installing in the two studios, a gramophone equipped with electrical driving energy, and then it won't matter if the operator forgets to wind it up, by this means we will not get any of the distorted music we so often receive, due to the motor running down. This is a regular occurrence, and is heartbreaking to listen to. With apologies for such a lengthy diatribe.

Yours etc.

Hamilton.

"SUPER-SIX."

Interference

Dear Sir,—Perusing various daily papers, and the radio press generally, one is forced to the conclusion that there are other factors than the "alleged" rotten A.B.C. programmes that are causing a diminution of licenses, or less increase than was anticipated. This can be summed up shortly as Q.R.M. (which signifies "man-made static" to the uninitiated). The Federal Government proposed to spend large sums on radio broadcasting.

both in programmes and new stations and maintenance. Relay stations were going to be erected in various centres, to give a stronger average field strength over the fairly-settled areas. This was all promised months ago, and what has been done? Beyond a few radio inspectors visiting some of the worst towns and testing a few noisy works, what has been done to alleviate these long outstanding troubles? One has only to look over the country press at some library to find dozens of complaints and letters about this nuisance, which is apparently prevalent wherever these electric supply stations are.

Various articles on noise suppression methods have been published in the radio press from time to time—and, no doubt, if all these things had been done in every case interference would be minimised. But no individual or even group of listeners can expect to be able to fit up and maintain from 50 to perhaps 200 sets of filter chokes on works all over country towns, and out on the ends of long supply lines supplying isolated pumping works, etc. Even if they were enthusiastic enough to devote all their time to this—all their endeavors are fruitless directly some doctor or hospital decides to play with their X-ray gear.

The number of sets not in actual use in most country towns is sufficient proof that shortly their licenses will not be renewed. More and more electric appliances get added weekly in all towns, which increases the noise level far worse than it was years ago, when these people first went in for radio—when something could be heard—but their 24/6 will soon be looked on as an unnecessary expense.

If the Scullin Government want to make sure of their re-election next time, all they've got to do is to pass an Act, or alter the present Act, so that noise-producing gear comes under the control of an inspector, who should make tests and give the owner of the QRM producing machines written instructions what to install under penalty. Then, with the air clear of the everlasting din, the Prime Minister will be able to talk to the multitude, and they will be able to hear him, which isn't the case at present.

Hoping some of the present Federal Government will take the hint from this.

Yours etc.

"Q.R.M."

Gunnedah.

Law Wanted

Dear Sir,—I have been reading your "Safety Valve" page for some considerable time, and the only complaint I have got is about electrical interference such as motors, vacuum cleaners, etc. Why not try and get at this trouble by getting the Government to pass a law making it compulsory for condensers to be fitted to all electrical articles such as mentioned, then most of the complaints re distortion will disappear, especially in country towns where electric current is available and some very neglected motors.—Yours, etc.,

Young.

O.W.M.

NEXT WEEK

FRED JOHNS,

Official Wrestling
Announcer of the
A.B.C., writes on

JIU-JITSU

FOR WOMEN.

Be careful not to let
your wife know about
this article.

IMPROVED RESULTS AT LESS COST!

IF A BOSOM FRIEND OFFERED TO IMPROVE YOUR RADIO SET AND REDUCE YOUR OPERATING COSTS BY 50 PER CENT. YOU WOULD SIT UP AND TAKE NOTICE

We have done this and more for hundreds of our customers---- we guarantee to do the same for you.

"B" Battery replacements are the biggest item in radio upkeep and they are the cause of most radio troubles.

Everyone knows this, but

do YOU know that for less than the price of three heavy duty "B" Batteries You can draw your power direct from the light socket or power point, and eliminate wasteful "B" Batteries and their troubles for all time?

YOU CAN DO THIS

Without any alterations to your set by using a reliable "B" Battery Eliminator made up from

THE FAMOUS ECONOMIC "B" BATTERY ELIMINATOR KIT

— AT —

£3-3-0

IT COSTS BUT A FEW PENCE
PER YEAR TO OPERATE
YOUR SATISFACTION IS
GUARANTEED.

*Clear Printed Picture
Diagram and Instruc-
tions free with Kit.*

IT IS ESPECIALLY APPROVED BY
THE ELECTRICITY DEPARTMENT
AMPLE POWER—NO HUM
—NO DANGER—NO ALTER-
ATIONS TO SET.

"Yours for Lower Prices and Service that Satisfies"

THE ECONOMIC RADIO STORES

Address Mail Orders, 492 GEORGE STREET.

COUNTRY CLIENTS: Page 54 has a message for you. Avail yourself of a properly organised department, which can take care of your every requirement.

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

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

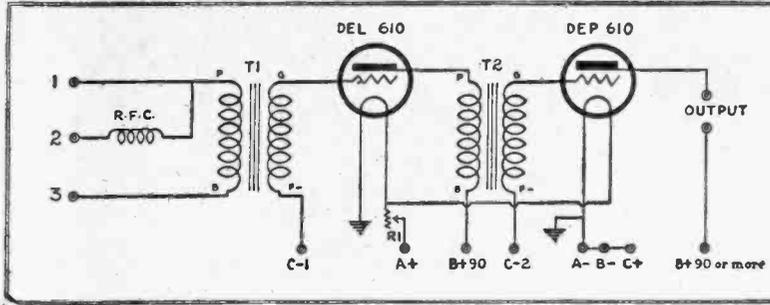
MAIL ORDER DEPT.,
492 GEORGE ST.,
SYDNEY.

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

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

By
R.W.M.

The
Circuit



A TWO-VALVE AMPLIFIER

to add "COUNTRYMAN'S ONE"

A GREAT many enthusiasts who own a single valve or crystal receivers wish they were able to operate a loud-speaker without going to the expense of building up an entirely new receiver. The amplifier to be described was planned just for such persons. By adding it to the crystal or one-valve set, it is possible to operate a speaker with complete satisfaction. It is suited for operation with any battery operated receiver, the place of the head 'phones being taken by the primary of the first audio transformer in the amplifier. Aside from its use as an amplifier with a simple radio receiver, the amplifier also has many other possible uses, one of which is amplifying the output of a gramophone pick-up.

The wiring and construction of the amplifier have been made just about as simple as is possible. For this reason it will not produce the beautiful musical quality of the amplifier described in "Wireless Weekly" for October 25, but at least it will give very high amplification together with a quality of reproduction which is up to the present-day average.

There is nothing hard about the construction of this amplifier, for it is just a standard circuit using two amplifying valves and two transformers.

On reference to the circuit you will note that there are three input terminals. The lower and the centre terminals are used when the amplifier is connected up to a one-valve receiver. The two outer connections are used when connecting up to a crystal set or the other apparatus to be described.

THE PARTS NEEDED.

You will require the following parts. Substitutes may be made within reason, pro-

viding the characteristics of the components are the same:—

- One Osram DEL 610 valve.
- One Osram DEP 610 valve.
- Two Benzamin valve sockets.
- One Radiokes r.f. choke.
- One A.W.A. Ideal 5-1 audio transformer (T1).
- One Ferranti a.f. 4 audio transformer (T2).
- One 20 ohm filament rheostat and knob (R1).
- Two yards flex for battery leads.
- Two lengths Celastite or other connecting wire.
- One dozen 5BA nuts and bolts.
- One sheet aluminium, 9in. x 6in.
- One wooden rod, to be cut into four pieces, each 1/2in. diameter 2in. long.
- Two S.C. jacks.
- Four small wooden screws.

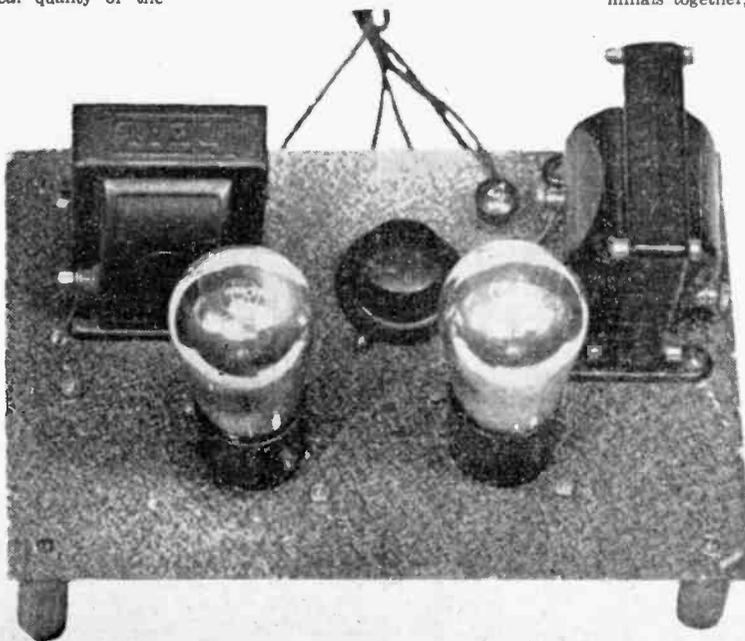
LAY-OUT.

Lay out the components on the base as shown. The Ideal transformer should be so placed that the plate and grid terminals face inwards. The grid of the valve socket should face the grid terminal of the Ideal transformer. With the Ferranti transformer (which is placed at right angles to the Ideal) the grid and plate terminals face the front of the panel. The valve sockets are placed equidistant, and are mounted underneath the base. To do this, holes should be cut just large enough to allow the admittance of the tops of the sockets. When mounting, nuts and bolts should be placed through the two mounting holes, and, in addition, the A negative terminal of each socket should be bolted to the base.

This not only gives additional support, but automatically connects the A negative terminals together, and thus saves a lead.

The rheostat must be insulated from the base by making the hole fairly large and putting an insulating bushing over the rod. The usual method of mounting (by means of a bolt) must be done away with here unless one cares to use an additional washer, but if this is done it may be found that there is not enough thread left projecting to mount the rheostat. The method used when the original was made was to drill two holes through the bakelite support of the rheostat, and to mount this to the base.

Only one terminal is mounted on the base, and this makes direct contact with the aluminium. This terminal is used for the A negative connection, and an earth lead may also be connected here if it is found necessary. A hole is drilled in each corner of



the base, and the legs mounted by means of wood screws. These legs will support the apparatus and raise it from the table or level.

Of course, there is no particular reason why a wooden base should not be used. The only alterations will be in the joining of the two negative A terminals and the connection of them to the right terminal or battery lead.

WIRING.

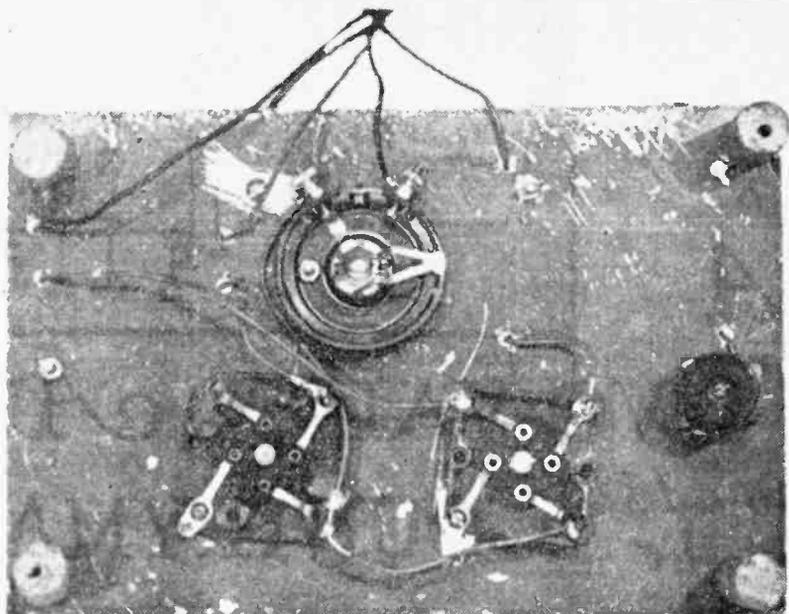
The wiring is very simple, and takes only a few minutes. Only two lengths of connecting wire will be necessary if you have laid out parts as suggested. As a matter of fact, only one length was used in the original model, but the extra length has been included in case any reader cares to take his battery leads to various terminals which are mounted, and, of course, insulated, from the base.

As will be seen, there are only eight leads. Two terminals which appear to have no connecting wire are the A plus terminals, which are mounted to the base. Where "fancy" panels are used, the insulation must be scraped away for these connections, and also for the A minus terminal connection.

If the jacks are to be used, they should be mounted and insulated from the under side of the panel. In the original, leads were merely taken from the various components.

Commence by connecting one side of the choke to the plate terminal of the Ideal transformer. (Drill a small hole in the base for these leads.) Note that the choke is mounted below the panel near the transformer.

Now connect the grid terminal of the first valve socket to the grid terminal of the Ideal transformer. The filament terminal of this transformer is taken to the C battery minus (about 4½ volts). The grid bias terminal of the Ferranti transformer is connected to about 30 volts negative grid bias, but one



should experiment to find the best tapping. The A negative terminal of each socket is connected to the base, and the A negative lead is, therefore, made to the terminal mounted on the base. The A plus lead of the first valve socket should be connected to one side of the rheostat, and also to the A plus terminal of the other socket. The other side of the rheostat is then connected to A plus of the battery.

The plate terminal of the valve should be connected to the plate terminal of the Ferranti transformer. A lead is then run from the B plus terminal of this transformer to one side of the jack, thence to the B plus terminal. The other side of the jack should be connected to the plate of the last valve

socket. Next connect the grid terminal of the Ferranti transformer to the grid of the last valve socket.

This completes the internal wiring. After connecting up A plus, A minus, the two C minus leads, and B plus 90 volts (two 45 volt batteries in series), connect B minus to A plus, and C plus to A minus. The batteries can always be left connected as long as the rheostat is turned right off.

If you are using a one-valve receiver, connect the plate lead of the detector valve to the open end of the amplifier choke, and the B plus side of the output to the B plus terminal of the Ideal transformer. In other words, place terminals "2" and "3" where the phones used to go.

Various Features From Many Stations

LOUISE HOMFREY, who will broadcast from 2FC on November 19, has an exceptional voice. Her title of "The Lady Baritone" has been earned on the Continent, in America, and England. Miss Homfrey recently returned to Australia after touring Great Britain, where she broadcast from 5GB.

A MUSICAL novelty will be given from 3LO on November 19, when the popular "In a Clock Store" will be featured. Many effects will be introduced, including the "running down" and "winding up" of every type of clock, from the old-fashioned "grandfather" to the impertinent little "cuckoo," and the chimes will be a feature. Many favorite artists will appear on the same programme.

FROM 3LO on November 19, under the direction of the Department of Agriculture, Mr. C. M. Rugg, poultry expert to the department, will speak on "Topping off Table Poultry." This talk should be greatly appreciated by the hundreds of amateur poultry farmers who are endeavoring to find the best Christmas market for their stock, and who want to give each bird those few final finishing touches that will make all the difference between a "prize" table bird and one of second quality.

"PREVENTION is always better than cure," but the secret lies in the knowledge of "what" and "how" to prevent. Many serious illnesses can be prevented if the first symptoms are checked, and scores of simple little remedies, if applied in time, may save pounds in doctor's bills. A talk that should be of interest to all, especially those who have care of the young, will be given from 3LO on November 17, when Dr. Stanley Argyle will speak on "Prevention is Better Than Cure."

A NOTHER bright comedy sketch will be given from 3LO on November 22 by "The Tatlers" Light Comedy Company, which will give listeners a few sidelights on "The Trials of a Theatrical Agent." The average theatrical agent leads a busy life, besieged from morning till night by artists wishing to burst forth on an unsuspecting public.

BEATRICE WHITE, who will sing from 2FC on November 18, is a pupil of Madame Goossens-Viceroy. She won the University Conservatorium Scholarship, and showed exceptional promise during her period of study. She has a very deep contralto voice.

DO you know the Blue Bird Boys? If not, tune in to 3AR on November 15 and hear their programme of songs, comedy, and imitations. This novel act has been arranged by Roy Ryan, known throughout Australia as "The Whistling Wanderer."

A BROADCASTING feature will be the singing from 3LO on Friday night, November 15, by the Postal Institute Choir of 80 voices, conducted by George English, and with full orchestral accompaniment, of the test piece "The Revenge" (Stanford) with which they won the Australian championship choral contest at Ballarat recently. In addition to "The Revenge," this famous choir will also sing: "Fire, Fire My Heart" (Morley), "King Arthur" (Tradn), "Sweet Flowers" (Walmsley).

THE Rev. V. C. Bell commenced a series of talks on the four humours, dealing with the "Born Optimist," "Follow my Leader," "The Man with a Liver," and "The Pessimist." On Tuesday, November 19, from 2BL, Rev. Bell will speak on "The Man with a Liver"—the third of the series. This type of man goes off with a pop now and then, but the worst of it is that you don't know when he's going to do it, but a first class fellow when he's done fizzing. Yet these periodic explosions are rather awkward in business, and his irritable manner often spoils the smooth harmony of the machinery.

:: MORE DX RECORDS ::

S.W. Notes

Dear Sir,—You ask for listeners to assist you by supplying information of their reception of s.w. stations. I am, therefore, sending you particulars of my recent receptions, as under:—

G5SW (25.53 metres).—4 a.m.-8 a.m.; variable, not too good at present.

GBX (Rugby, England) (28.86 metres).—Frequently conversing with 2ME (Sydney) between 6 a.m.-7 a.m., and same hours in evening. Much better than 5SW, and quite fit for speaker. I have heard 2ME coming back quite well from this station, cordially being received there on a loud speaker, which can be heard plainly. Thus, receiving 2M right round the globe.

2ME (Sydney) (about 29 metres).—Conversations with GBX and Radio, Suva. Usually very clear.

KGO (W6XN) (23.5 metres).—Wednesday and Sunday afternoons. Can also be received on B.C. band on same transmission. RA97 (late RFN), Kharbarook, Siberia (70.2 metres).—Strong every evening, but subject to static. One of the best.

RADIO, SUVA (20.79 metres), two-way phoning with 2ME.—Gave broadcast of service from Methodist Native Church, Fiji, on September 20, and again October 20. This service is worth hearing, the native singing being very fine indeed. Can be easily followed.

KDKA (W8XK), E. Pittsburgh, P.A. (25.4 metres).—Usually on at same time as 5SW, and only one degree lower on dial. Reception variable.

PCJ (Holland) (31.4 metres).—Usually on 4 a.m. to 7 a.m. Good reception. Also Saturday afternoons, special transmission for Australia in English.

2XAF (Schenectady, N.Y.) (31.4 metres).—Gives news, market reports, descriptions of baseball matches, etc., after 8 a.m. Reception variable.

PHI (Holland) (16.88 metres).—Special transmissions for Australia. Sometimes arranged after 9 p.m. Good reception.

KZRM (Radio Manila) (48.8 metres).—Call pronounced like "K-Zhee-R-M." Every evening after 9 o'clock, and sometimes earlier. Very good reception.

The above are my verified receptions (apart from that from countless amateurs). I also regularly receive a foreign station about 55-60 metres, apparently Russian, but am unable to verify this station. They are on at about 11 p.m. onwards. Also an Oriental station comes in late at night (about midnight), very well, and extends on till 6.30 a.m. on Mondays. I believe this to be Bangkok (Siam), and am awaiting verification. This station is on about 29.5 metres.

Yours, etc.
E. W. LUKINS.

Taree

Nineteen Countries

Dear Sir,—After reading of other DX fans, I think this might interest some of them. I have a three valve short-wave, and have logged, during the past two years, no fewer than 1000 stations from all countries over the world—the prefixes being as follow:—OH, OZ, ON, X, F, YO, ZL, G, O, W, VU, OA, VE, OK, LW, K, J, HB, VK. All these are amateurs only, and I have "Q.S.L." cards from a great percentage of them.

Yours, etc.,
B. E. HARDINGE.

Clayton

Further correspondence from readers in connection with long-distance short-wave work.

DX in Queensland

Dear Sir,—I notice in this week's "Wireless Weekly" an inquiry from "Constant Reader" (Newtown). I presume I am the person wanted, so here goes.

My set is a Cossor Melody Maker, with an extra stage of screened grid r.f. I had started at the other end by adding a second audio stage, but being unable to get a 230 X.P. screened grid r.f. The following stations have been received on the loud-speaker:—3AM, 3BY, 7ZL, 3AR, 2FC, 5CL, 4QG, 3LO, 2BL, 3UZ, 2GB, 2KY, 3DB, JOAK, 4GR, 2UE, 2YA, 1YA, 3YA.

We are north-west of Brisbane about 100 miles as the crow flies, and about 1400 feet above sea level. 4QG can be picked up any time in the day at good loud-speaker strength, but southern stations can only be raised early in the morning or late in the afternoon, and, of course, at night.

Yours etc.,
C. THOMSON.
Kingaroy, Queensland.

Big Ben in Adelaide

Dear Sir,—It may be of interest to readers to know that I have been regularly listening to G5SW, 2XAF, 2XAD (WGY previously known) for over two years. In the winter-time I leave the house to the chimes of Big Ben striking midnight, which is 8.30 a.m. in Adelaide. For months in the winter this station comes in at good loud-speaker strength, as does WGY from either 2XAF or 2XAD. At present 5SW is starting to come in from 10 p.m. to 11 p.m., which is the mid-day session in London.

The morning transmission from America and London is now fading out sharply after 7 a.m. most days, but is good up to 7 a.m. The rising of the sun in the summer-time affects short-wave reception, due, no doubt, to the lifting of the layer and ship distance. RA97 comes in on the speaker nearly every night, but is a little over-modulated. Another station has started on about 60 metres, but up to the present I have not identified same: it sounds Russian, and is received very strong here.

KGO is very good on Sunday afternoon, the modulation being perfect. The most perfect transmission at present is from PHI, on 16.88 metres, and is well worth listening to. This station no doubt takes the DX biscuit. An interesting experiment in country reception was tried two years ago, and it was found that stations which were received in the city at fair phone strength could be received at very good loud-speaker strength 150 miles up-country. Phones were hardly necessary in the country. I strongly recommend an S.G.R.F. valve ahead of the detector for short-wave. The R.F. Four, published in your 18/10/29 issue, is excellent. I have been using one for 12 months, only with .00025 condensers, and also use it for B.C. listening. I consider it a very good move to include short-wave notes in your publication, as it is far more interesting than B.C. waves.

Yours, etc.,
M. V. MILLAR
Adelaide.

KZRM Schedule

Dear Sir,—Regarding your request for further information in connection with short-wave broadcasting I have received confirmation from KZRM. Their hours are as follows:—

Monday.	4.0-5.30 p.m.	Studio programme.
Monday Night.	Silent night.	
Tuesday.	4.0-5.30 p.m.	Studio programme.
	6.0-7.0 p.m.	Theatre Orchestra.
	7.0-9.30 p.m.	Studio programme.
	9.30-11 p.m.	Dance from Station and Cabaret.
Wednesday.	4.0-5.30 p.m.	Studio programme.
	6.0-7.0 p.m.	Philippine Constabulary Band.
	7.0-9.30 p.m.	Studio programme (featuring Navy or Army night).
	9.30-10.30 p.m.	Dance Music.
Thursday.	4.0-5.30 p.m.	Studio programme.
	6.0-9.30 p.m.	Studio programme.
	9.30-10.30 p.m.	Dance Music.
Friday.	4.0-5.30 p.m.	Hellesens Dry Battery hour.
	6.0-7.0 p.m.	Constabulary Band.
	7.0-9.30 p.m.	Studio programme.
	9.30-11 p.m.	Studio and Cabaret.
Saturday.	4.0-5.30 p.m.	Studio programme.
	6.0-7.0 p.m.	Constabulary Band.
	7.0-7.30 p.m.	Studio programme.
	7.30-9.0 p.m.	Dinner Music.
	9.0-10.0 p.m.	Dance Music.
	10.0-12.0 p.m.	Stadium prize-fights.
Sunday.	10.30 a.m.	Church Services.
	3.0-4.0 p.m.	Bureau of Prisons Band.
	6.0-7.0 p.m.	Philippine Constabulary Band.
	7.0-10 p.m.	Studio programme.

The waves are 488 metres and 485 M. This schedule must be adhered to, as I received one last year when I received them on 485 metres, and it is practically the same.

The transmitters are on Manila heights, seven miles from the studio, which is on the top floor of Manila Hotel. The short-wave set is crystal controlled. It puts 1KW to the special aerial of the doublet type.

W2XAF was received here on a Tuesday night at 8 o'clock, giving exercises similar to those given by 3LO, Melbourne, and at the conclusion said it would be broadcast every morning by a number of stations and, I think, 2XAF was included. They came through here at R8, using a simple adapter.

I hear TLO at R7, and find that they close at 5 a.m., instead of 6 a.m., as shown in your chart; they are only this late (6 a.m.) of a Sunday morning (they put over some decent music).

EAQ, Madrid, at R5, on Wednesday morning, on a wave of above 30 metres. He seemed to be an amateur to me, but he may not be.

Yours, etc.,
D. R. GILL.

Jones Island.

Radio Manila

Dear Sir,—In "W.W." 18/10/29, you have KIXI, Manila. This announcement always sounds to me like "KVRM," Radio Manila, transmitting simultaneously from Manila and Taboo." This station was recently operating on a wavelength of about 31 metres, but is now on about 24 metres, and is the strongest S.W. station received, and is audible from 6 p.m. until about 11 p.m. on week-nights. Other S.W. stations audible are PCJ, on Saturday afternoons, and WGY on Sunday mornings.

Yours, etc.,
R. H. CLARK.

Collarenebrl.

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

The Importance of Power Supply

Radio Proficiency

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

THE first thing that must be considered when planning a transmitter is the power supply, since this factor is a very important one.

It is quite possible to use raw a.c., that is, unrectified a.c., on a transmitter, but owing to the interference caused, it is not considered very satisfactory. It must be remembered that a poorly designed receiver causes no inconvenience apart from probable radiation, but a transmitter which can be heard all round the world becomes a nuisance to everybody when it is poorly designed.

An a.c. note is very harsh and, being of low pitch, is much more difficult to follow in static than is a high-pitched note. With d.c. we can get a very clear note which pushes its way through static to a far greater extent than an a.c. signal.

Unfortunately it is a difficult matter to obtain high voltage d.c.; if we have access to a generator with the necessary output, our greatest trouble is over. Most of us, however, are not so fortunate.

Consequently the usual procedure is to step up the a.c. supply of the mains to the required voltage by means of a power transformer. The output, which of course is still a.c., is then rectified and smoothed, and we then have a d.c. input for the transmitter.

It is usual to step up the voltage with a transformer having a centre-tapped secondary, since this enables us to rectify the a.c. output in a very effective manner. There are several ways of doing this. One is to use rectifying valves or a mercury arc, and another (rather messy and cumbersome, but very cheap and efficient), is the chemical rectifier. Many amateurs use this method of rectification. It requires very little care, and if anything goes wrong with any part of it, a replacement takes a few minutes, and costs but a few shillings.

Using the smaller type transmitting valves, or receiving valves with suitable characteristics, dry batteries may be used for power supply throughout. They are very efficient, and it means that no filters or rectifiers will be necessary.

When planning our power supply, we should refer to the valve characteristics.

Planning the Power Supply

Say we have a valve that draws 30 mls. plate current at 450 volts.

As the transformer required to give us this output feeds into a rectifier and filter, there will be a voltage drop, so we must allow a certain additional voltage output from the transformer to compensate for this. For the purpose of easy discussion, we shall estimate the voltage drop as being 50 volts (it could be three or four times this if a high resistance choke were used). This means then, that our transformer must give us 500 volts at the secondary. The output current

would be about 50 mls. This gives us some in reserve. If we are using, say, a TB04/10 transmitting valve, we shall require a transformer which amply covers the characteristics. This valve requires 35 mls. at about 425 volts. We should, therefore, have a transformer with an output of 50 mls. at about 500 volts.

In both cases, our transformer secondary should be centre-tapped, and the voltage obtainable from the secondary should be twice that required. Thus, if we desire 500 volts output, we should obtain one with 500 volts available either side of a centre-tapped secondary.

If there is a possibility of our using two valves in push-pull (a system which gives us a better signal, and which will be discussed in due course, we shall require the same voltage at twice the plate current.

As regards filament supply, we may either use an accumulator, dry batteries, or a filament transformer. If our valve requires 7½ volts, 1.25 amps. (such as the TB04/10), we should either use a separate filament transformer, or use the same primary as the power transformer, and have another secondary giving us about 8 volts output. (This would, of course, be passed through a power rheostat, and a voltmeter would be connected across the filament in order to see that the valve was being properly supplied.) If we were to under-supply the valve, the transmitter would possibly go out of oscillation, and the dangers with regard to the overheating of the plate, discussed recently, would have to be watched. The filaments of modern valves should always be operated right at their rated filament voltage.

An ordinary bell transformer is practically useless for filament supply, since the output is seldom sufficient. The current rating is in many cases only about .5 amps. This is more than plenty for an electric bell, but useless for a transmitting valve. A 201A or other like receiving valve can, of course, be supplied from a bell transformer, but one should carefully check up the output by means of a reliable voltmeter before using the supply on the transmitter.

The Rectifier

We shall imagine, then, that we have arranged what transmitting valve we shall use, and have planned our power transformer or transformers. We are being supplied with, say, 500 volts a.c. at 50 mls. Our object is to supply the transmitter with about 450 volts d.c.

In the electrolytic rectifier we make use of a number of jars, each supplied with a lead and an aluminium electrode. Note that these electrodes should be chemically pure, and that before the rectifier can be used, the jars must be "formed." This "forming" process was carried out in "Proving Radio" experiments, and readers should look back to "Proving Radio," Part 4, where I used a bell transformer and a single cell with a lead and aluminium electrode in order to give a low voltage d.c. supply for our experiments.

Rectification was thoroughly treated in quite a number of the "Proving Radio" series,

and a lot can be gleaned from these sources.

Next week, we shall see how to go about constructing an electrolytic rectifier, and as you will have had time to look up the "forming" experiment, we shall treat the forming process.

We are now drawing very close to actual transmitter construction, and a gentle reminder to the effect that before any of this apparatus can be constructed a transmitting licence is necessary, should not be amiss.

Designing a Chemical Rectifier

Did you look up those notes in "Proving Radio" on "rectification" and "forming"? If so, they will help you considerably in this discussion. Last week we had obtained 500 volts either side of a centre-tapped transformer secondary. Our valve requires 450 volts, and we have decided to convert the 500 volts a.c. to a d.c. supply, the drop through the rectifier giving us the required voltages, i.e., 450 volts.

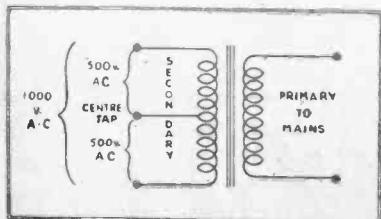
In designing a chemical rectifier we must use jars of sufficiently large dimensions to prevent undue heating of the electrolyte. In every case we should allow 50 volts to a jar. Remember this, because three or four months ago an A.O.P.C. question asked how one would go about constructing a chemical rectifier. If we have 500 volts, and we have to allow 50 volts to a jar, this means we shall need 10 jars.

Another thing to remember, also, is that the amount of aluminium to be submerged is one square inch for every 40 milliampere plate current. We are assuming that our transmitting valve requires about 35 mls. Therefore only one square inch is necessary.

Electrolyte

A solution of baking soda may be used for an electrolyte. Mule Team 20 Borax is also good. The troubles mostly struck with the solutions are evaporation and creeping. The first is unavoidable unless the surface is covered. If enough jars are used and all constants are correct heating and consequent evaporation will be at a minimum. In any case, a thin layer of transformer oil spread over the top of the electrolyte will keep down creeping and evaporation. These two latter are more troublesome with borax than with baking soda (sodium bicarbonate).

Sodium-ammonium phosphate and sodium potassium tartrate are good solutions, but are more expensive. The use of borax requires a saturated solution. This means that as much borax as possible is dissolved in water. When the liquid will absorb no more borax we have a saturated solution. If baking soda is used, there will be a heavy white precipitate formed at the aluminium electrode, which will settle to the bottom. As this does not appear after the aluminium is formed, one solution can be used for forming, and the electrodes can be placed in a clean solution after they are formed.





Raise the standard of Reception

In your

5 VALVE NEUTRODYNE

with these **Osram
Valves**

IF your set uses this popular circuit, change over now to Osram, using this range of valves. Each has its special function, each is the best fitted to perform its particular part in perfect reception.

MADE IN ENGLAND

	1st R.F.	2nd R.F.	Det.	1st Audio.	2nd Audio.
4-volt	DEL. 410	DEL. 410	DEL. 410	DEL. 410	DEP. 410 or P425
6-volt	DEL. 610	DEL. 610	DEL. 610	DEL. 610	DEP. 610 or P625A

These Valves in the last stage enable your set to operate the latest types of loudspeakers.

Ask for them by number, and say OSRAM

Your "B" Batteries last longer when used with "Osram Valves."

Ask your dealer for the Osram Valve Guide, free on request.

Advertisement of the British General Electric Co., Ltd., Magnet House, 194-111 Clarence Street, Sydney. Branches at Newcastle, Melbourne, Adelaide, Perth, and N.Z. Cities. Sole Agents at Brisbane and Hobart.

Straight Comment on High Quality Reproduction

Curves Ahead

The
Experimenters'
Department
of Technical
Progress
Conducted by
Ross A. Hull,
M.I.R.E.

IN a recent issue of the "Wireless World" we came across some splendid material from the pen of F. H. Haynes, summing up the requirements in a receiver designed to give the most desirable possible musical reproduction. Mr. Haynes's statements are representative of the sort of material which we would like to print in bold type on every page of WIRELESS WEEKLY every week for six months with the idea of attempting to convince at least a few enthusiasts that their present ideas on radio reception are still primitive. Though we reprint a small extract from the article mentioned, we regret that it is written in the typical restrained and level manner of a technical writer who really knows what he is talking about.

"To construct a set suitable for giving good quality reproduction with a moving-coil loud speaker, together with long-range reception," says Mr. Haynes, "is the ambition of many an enthusiast. Eventually he learns that range and quality do not walk hand in hand. Long-range reception demands a general h.f. amplifier, which, in collecting the distant signal, gathers atmospherics and heterodyning, the low-frequency vibrations of the former and the high-pitched whistles of the latter being particularly well produced by the moving-coil speaker. Such background noise cannot be tolerated. Selectivity is an essential to sensitivity, and to such an extent must it be introduced that the higher audio-frequencies carried by the side bands are lost. Experience clearly proves that both leaky grid detection and reaction must be avoided, but these aids to sensitivity are not wanted with a local station receiver.

"An electric light supply is essential for the adoption of the output amplifier circuits given here; indeed, we must admit that without mains it is difficult to fulfil the requirements of quality reception.

"The use of an L.F. valve as an anode bend detector is also advisable. True, such a valve is very inefficient, but overloading of the subsequent stages must be carefully guarded against, while our aim is to preserve the upper frequencies. Such a low impedance valve might be followed by a special transformer coupling, yet if the bass frequencies are to be preserved resistance coupling has much to recommend it. An unusually low value of anode resistance effectively avoids high-note loss."

The Receiving Aerial

MR. PETER H. ADAMS, VK2JX, of Cremona, writes:—I read with interest the remarks in "Curves Ahead" with reference to short-wave receiving aeriels. I had previously read the letter in "Q.S.T." to which you refer, and at the time it struck me that it was remarkable that tuned receiving aeriels were so uncommon. For the past six months I have been using a "doublet" aerial for all receptions on the 14,000 k.c. band, with very satisfactory results. This aerial is a standard transmitting "doublet," with half-wave radiating portion and half-wave feeder spaced eight inches. Of course, a pronounced "dead spot" developed

in the centre of the band, but when the aerial coupling was eased off sufficiently to allow the detector to oscillate, signals were approximately double the strength they were on an ordinary aerial. QRN and QRM increased, too, but not to the same extent. However, the aerial question is at best a compromise, because the nearer the aerial is tuned to the receiver, or the closer the coupling is made, the harder it is to keep the detector oscillating. This means that if the aerial is tuned to the frequency of the received signal the coupling must be decreased. But at the same time it is very probable that the impedance offered by the aerial to currents produced by static and background noise would be relatively greater than that offered to the signal currents to the frequency of which the aerial happened to be tuned, and then there should be a gain in the signal-noise ratio—which, after all, is the thing that counts.

In Colonel Foster's arrangement the lamp cord feeders would seem rather to defeat their object because, having such a high distributed capacity they would by-pass a lot of current which would never reach the primary coil, and, at the same time, it is quite possible that the twisted feeder wires and the primary coil would form a resonant circuit with a natural frequency near the band in which it is desired to receive and absorb current from the detector without any corresponding benefit. Also, why should the feeder only be one-quarter the wavelength, since one-half is the correct length for this type of aerial? Apart from these objections, however, the aerial is thoroughly satisfactory, and well worth a trial. As might be expected, it is directional perpendicular to its length, but the effect is not unduly marked. I have had similar results to these with a Zeppelin aerial on the 7000 k.c. band.

Checking Condenser Ganging

ALIGNMENT of gang condensers can be readily checked with a simple tool made from a 5-in. piece of bakelite rod with a 1½-in. heavy copper wire ring fastened to one end, and an old condenser plate fastened to the other end, is an excellent suggestion made in "Radio." This tool may be used to add an extra plate to the rotor of each condenser in the gang by placing its condenser plate end in parallel with the stator plates and touching the rotor. If the signal then increases in strength the condenser is low in capacity, and its trimmer should be tightened. If the signal decreases in strength the condensers are approximately in alignment. After checking for low capacity insert the ring end of the tool in the centre of each r.f. coil. This should decrease the signal strength. If the signal increases the capacity is too high, and should be lowered by adjusting the trimmer or bending the outside plate until a decrease in signal is experienced. The condenser-plate test should then be repeated, so as to be sure that the capacity is not too low.

High Resistance By-pass Condensers

MOST modern receivers positively bristle with decoupling resistances and condensers that are intended to divert into harmless paths the various alternating currents that might cause trouble if allowed to stray about. When it is currents of low frequency that we are trying to by-pass through earthing condensers to the filament of the valve, it is only necessary to choose condensers of large capacity, the type having paper dielectric serving perfectly well.

The selection of a condenser for a high-frequency circuit, however, needs rather greater care, says a writer in the "Wireless World." When dealing with high-frequency currents it is no longer quite safe to assume that of two condensers, one having ten times the capacity of the other, the larger will offer one-tenth of the impedance to their flow. There now enters into the question the resistance offered by the condenser plates themselves to the passage of high-frequency currents.

Let us imagine that a foil condenser is constructed from a long, narrow strip of waxed paper, with a very thin metal foil on each side, and that connection is made to the two foils at the same end. If a high-frequency voltage is applied to the terminals the full voltage will be operative across the waxed paper dielectric in their immediate neighborhood, but owing to the very appreciable resistance of the foils, the voltage-drop along them will be great enough to render the far end of the strip practically inoperative as a condenser. The far ends of the foil are, in fact, protected from the applied voltage by a very thorough and elaborate decoupling scheme of series resistance and parallel capacity. A two-microfarad condenser constructed on the lines suggested, in which the shortcomings of many paper condensers are illustrated in exaggerated form, might well offer no less impedance to currents of very high frequency than a condenser of nominal capacity one-tenth or one-hundredth of its value, but with foils of negligible resistance. In the usual mica condenser, for example, there are usually two sets of small paralleled foils, so arranged that every individual foil in each set makes direct connection with the appropriate terminal on the case. With such a mode of construction the effective resistance of the foils will be negligible.

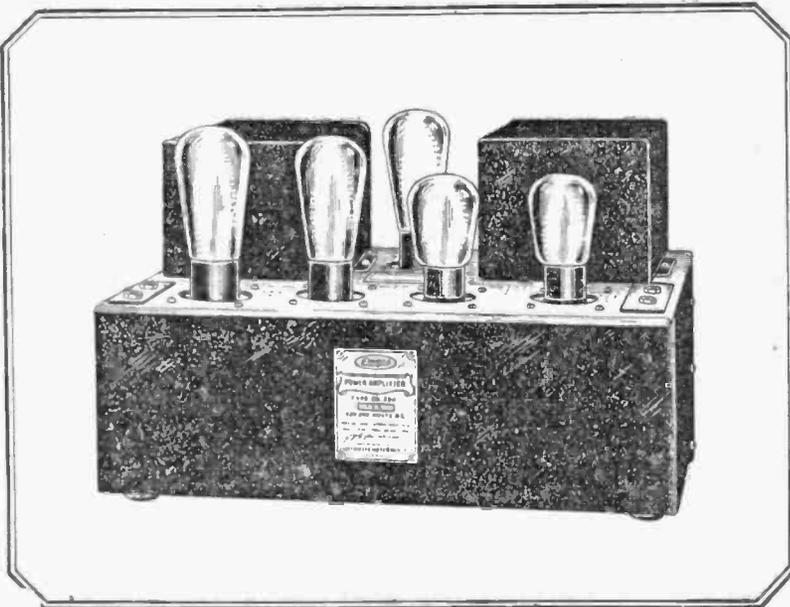
Several manufacturers of paper condensers have arranged to make connection to each foil at a very large number of places, so that with their products the full rated capacity will be effective even at very high frequencies. The choice of one of these, or of a mica condenser, is a measure of precaution that it would be wise to take when choosing condensers to by-pass high-frequency currents in a modern high-gain amplifier.

EMMCO'S POWER AMPLIFIER

**THEATRES
PICTURE
SHOWS**

— FOR USE IN —

**CABARETS
CONCERT
HALLS**



THIS new Emmco Super Power Amplifier is made up of the very best material and well-known high grade Emmco components.

It is intended for use in Picture Shows, Concert Halls, Cabarets, Public Speaking, etc., and is capable of reproducing with unusual clarity and volume. 4 Watts of positively undistorted energy, which is ample to work 2 standard Dynamic Speakers. The Power Amplifier will operate from any Radio Set or Phonograph Pickup, and is easily adapted for use with a microphone.

EMMCO PRODUCTS
ARE FULLY
GUARANTEED.

PRICE WITHOUT VALVES £30

Price Home Type Amplifier £18/10/-

THERE IS NOTHING BETTER THAN EMMCO'S BEST.

Made by Electricity Meter Mfg. Co., Ltd.,
Sole Factory Representatives:
Manufacturers' Products Pty., Ltd.

SYDNEY, 137 Clarence Street.
'Phone, BW1328.

MELBOURNE, Sugden Place.
'Phone, F2355.

BUILDING MODEL 'PLANES TO SCALE

How to go about building realistic models of existing 'planes. Next week specifications of Lindbergh's "Spirit of St. Louis" will be given.

By **NORMAN LYONS**

THE term "scale model," which means the same as "commercial model," is generally applied to three distinct types, classed as fuselage scale models, flying scale models, and exhibition scale models. All are more or less reproductions of existing man-carrying models, embodying a fuselage, chassis, wings, and control surfaces, thus differing from scientific models which have merely a wing, elevator, and simple frame. Fuselage scale models are the least accurate reproductions, the fuselage being a simple triangular or square frame, the landing gear a light bamboo or wire frame, the wing being similar in construction to those used on scientific models, and the tail surfaces resembling those on a hand-launched scientific tractor. The wing of such a model can be moved about to properly balance the model, in some instances being quite a distance back from the propeller.

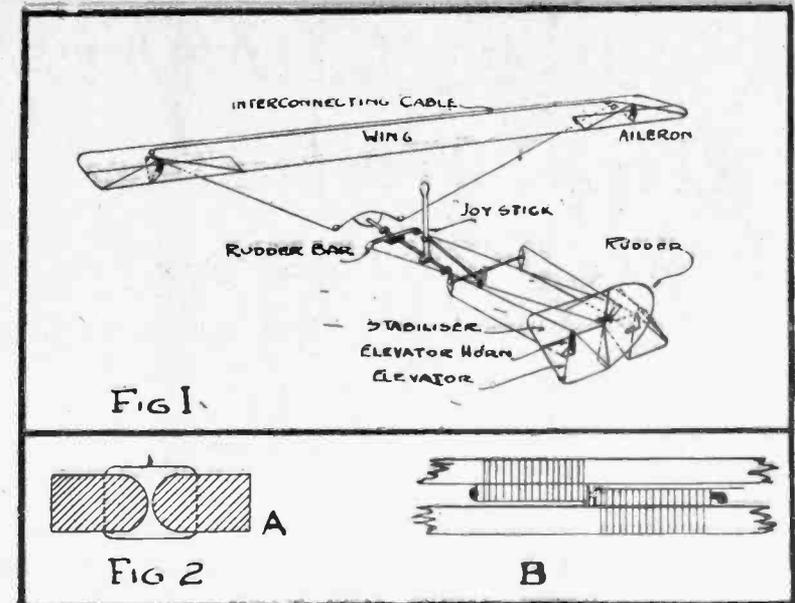
Exact Miniatures Except Props

Flying scale models closely resemble an original man-carrying machine; they have similarly shaped fuselage with cockpits, similarly shaped landing chassis in the same relative position as the original, wing or wings of the same relative size and shape in the same position as on the original, and movable control surfaces similar to those on the original. The only leeway permitted is with the propeller. This may be larger than the scaled-down original, but its rubber or other power must be in the fuselage. Because of the different distribution of weight between the model and original, the only way in which the model may be accurately balanced is by proper setting of the controls or by adding weight to the nose in case the controls do not hold the model in equilibrium.

Exhibition scale models are not intended to fly; they are made in exact imitation of the real machine. The fuselage, chassis, wing, and control surfaces are exactly the same as the original regarding both shape and position. Such features as a dummy engine, exhaust pipes, cockpits with miniature seats and instrument board with the joy stick and rudder bar actually working the control surfaces; wind shields, complete wing bracing and other parts, are added to complete the realism. These models are purely decorative and educational.

Deciding Upon the Design

When a model is to be made the first step is to decide upon the design. It usually follows the model-maker's attraction for some particular 'plane. After the trans-Pacific flight by Smith and Ulm, there was an epidemic of "Southern Cross" models, and after Lindbergh's trans-Atlantic flight almost every boy wanted to make a "Spirit of St.



Louis." So it goes. Having chosen the ship, proceed with obtaining data upon it. The best source is the manufacturer of the 'plane, who will probably be glad to send blue-prints from which you can scale the drawing. Aeronautical magazines frequently carry outline drawings and detail photographs of prominent 'planes. The Aircraft Year Books, published by the Aeronautical Chamber of Commerce, have numerous outline drawings in the back of each issue; these books have been appearing annually since 1919. Model supply houses carry numerous blue-prints and drawings of models. In a pinch, photographs can be used if a few dimensions are known.

Next decide upon what scale you are going to make the model. Three-quarters of an inch to the foot is a good general size for almost any model. A draftsman's scale is helpful in the next step, the making of a drawing, in which every part is drawn to the size that it will be in the finished model. The scale aids in determining the size of parts in the original source of information, also in plotting the model drawing. Sometimes the original drawing will have the scale indicated in it.

Material Used

Now proceed with the construction of the various parts; it is customary to make the fuselage first. Model work follows the general practice for full-sized machines, so far as framing is concerned, but occasionally a departure is made. Sometimes the fuselage or wings are made from solid wood shaped with a draw knife, spoke-shave, plane, file, and sandpaper. For lightness the fuselage is often cut in half longitudinally, then shaped, hollowed out, and glued together. Sometimes a cylindrical fuselage is made from a paper tube cutting out long V-shaped pieces to taper it. Others are built up of papier-mache or gunmed tape wrapped about a form. When the longeron and spar system is used, these may be made of pine, balsa, soldered wire, or bamboo, the latter being easily split to size, bent to shape, and cemented in place. It is customary to so place the fuselage struts that they can resist the shocks upon the landing chassis, wing struts, etc. Combining the tail-piece and rudder post is also a good idea. The chassis, wing struts, etc., are easily at-

tached through use of metal tube fittings. Cockpits are put in the top of the fuselage by adding a turtle-deck with openings. The cockpit rims are formed of bamboo or reed, bent to a saddle shape by heating or steaming.

When it is necessary to add weight to the nose of a model for balancing, it is preferable to add some feature of the original machine, rather than merely tying on a piece of lead. A dummy engine serves well in such cases. Stationary engines may be upright, Vee, "W," opposed, "X," or radial, and can be imitated on a model by cementing little pieces of wood, doweling, etc., to the front of the model. "Plastic wood," a sporting goods and hardware store product, can be worked like putty to any shape; it hardens like wood and contains its own adhesive, thus being excellent for dummy engines, spinner caps, head rests, stream-line fairing, etc. Exhaust stacks are made of reed, doweling, or tube. Rotary engines are made of balsa or maple doweling cemented to a hub which is fixed to the shaft of the propeller to revolve with it. In the case of exhibition models, a little electric motor is sometimes housed under the engine hood to turn the propeller. Wind shields, windows, and other transparent parts can be made of celluloid or "Cellophane."

The Controls

If it is desired to construct the cockpit with a seat and controls, Figure 1 shows the standard hook-up for controls, although any method may be used to produce the same movements. The wings and control surfaces themselves can be made of built-up frames as for previously described models, or the same method may be used with soldered tube or wire. On some models solid wood wings and surfaces are used. Hinging of elevators, rudders, and ailerons varies with the ingenuity of the modelmaker. Some merely use a piece of wire as in A, Figure 2. Another way is to attach little tubes to each adjoining part with a pin, wire, or nail for an axle as in B. To be accurate, the same wing section should be used in the model as in the original. Wings can be attached by screws through their spars into the longerons, by clips, by wiring, by rubber bands, nails, etc. In the event of a biplane or triplane, the strut connections are best made of

"MORE GOOD NEWS!" "BRYANT'S Very Easy Terms" HAVE BEEN REDUCED

Thousands of Radio customers have availed themselves of OUR VERY EASY TERMS in the past, why not you in the future? Think what this means to your reception. You may purchase Speakers, Eliminators, Valves, all kinds of Radio parts, etc., for an exceptionally small deposit, and make your set worth while. Call in and see us. We will be pleased to assist you with expert advice on your radio difficulties without obligation.

Want to Make and Save Money? WELL, THINK THIS OVER

YOU CAN BUILD YOUR OWN AC.3 VALVE SET.

"THE SIMPLICITY 3-VALVE ALL-ELECTRIC" for £14/3/9, complete power pack, valves, etc. Power pack is guaranteed 12 months. May be you have some of the parts of your battery set yourself? These you need not purchase. We can and will supply any part of this set to you. Get in early and commence building for yourself and friends. No technical knowledge required. A boy can build it. Call and see us for a lay-out plan and demonstration.

CLYDE BATTERIES HAVE BEEN REDUCED

	£	s	d
2 volt, 25 amp.	£0	16	0
2 volt, 40 amp.	£0	17	0
2 volt, 50 amp.	1	8	6
4 volt, 25 amp.	1	14	0
4 volt, 40 amp.	2	1	9
4 volt, 50 amp.	2	6	6
4 volt, 75 amp.	2	12	0
6 volt, 60 amp.	3	1	0
6 volt, 75 amp.	3	6	8

SPEAKERS



PHILIPS SPEAKERS.

	£	s	d
Baby Grand	£3	10	0
Buff Baby Grand	3	12	6
Triple Baby Grand	3	15	0
PCJJ Junior	4	10	0
PCJJ	5	10	0
Peter Pan	6	10	0
Seventette	7	0	0

We can supply any type of Speaker.

OLDHAM "B" ACCUMULATORS WITH ACID.

	£	s	d
20v.	1	5	0
40v.	2	11	0
60v.	3	16	3
80v.	5	1	6
100v.	6	6	9
120v.	7	12	0

BRYANT'S, LTD., VERY EASY TERMS. Metropolitan Area Only.

Amt.	Deposits.	Weekly Payments.			
£	£	s	d		
5	7	6	2	6	
10	15	0	3	6	
15	1	2	0	5	0
20	1	10	0	6	8
25	1	17	6	7	6
30	2	5	0	9	0
40	4	0	0	11	0
50	5	0	0	12	6
60	6	0	0	15	0

Larger amounts may be arranged.

10 per cent. added to cash prices for terms, which cover the whole period.

MAGNAVOX X CORE NEW TYPE SPEAKERS.

All types of units from £5/15/-

	£	s	d
Dynamic 404, 240v. A.C.	7	15	0
Dynamic 405, 240v. A.C.	8	10	0

Cabinets are not procurable for 405 unit.

POWERS, PACKS, ETC.



- Philips 1017 Trickle Charger. £2/15/-.
- 3002 B Power Unit, £7/15/-.
- 3003 B and C Power Unit, £10/15/-.
- 3009 B and C Power Unit, £8/15/-.
- AC Power Pack, £12.
- Filament Transformers, £1/10.
- Pilot Power Pack and all types of Eliminators in stock.

tube fittings. In some instances the struts may be inserted in holes in the wing spars. To allow for wire connections, small strips of metal with a hole in each end are fastened under the strut connection. The wires greatly assist in steadying and securing the wings.

Markings

When a model has been completed in all its parts and assembled, the resemblance to the original can be intensified by various markings and decorations. The cockades are the outstanding decorative features of military planes, and they either can be painted directly on the wings or on thin paper which is pasted to the surfaces when dry. The stripes and markings on the rudder can be painted on, likewise those on the fuselage. Should the modelmaker be a poor sign-writer, small letters and numbers in all sizes can usually be recovered from discarded calendars.

Bougainvillea

(By G. W. COOPER, who broadcasts from 2BL every Saturday morning at 10.40.)

(Continuing last week's article.)

Another variety is Laterita, which has brick red bracts of bloom. Some prefer this to Rosea. The finest bright purple variety is Magnifica Trailli; this variety is the most perpetual flowering member of this family of creepers. The thorns are much larger on the purple varieties of bougainvillea than the brick red and strawberry pink varieties. They are stronger in growth, and are also much coarser in every way. To train these strong growing varieties, bend over and down all the shoots as they grow, and if growing too vigorously, cut out rank-growing shoots once the creeper has attained something like its full requirements. If you let these purple varieties make too strong a growth during summer time they run away with most of the sap, and do not flower nearly so well as when they are kept in check. This does not apply to the two weaker varieties, Rosea and Laterita.

Whatever your garden soil is like, there is one thing that bougainvilleas will not stand, and that is wet feet at any time; they must have a subsoil that is never waterlogged in the slightest degree. Perfect drainage of the subsoil is the first and most important thing to see to before you plant the young bougainvillea. Having made sure of the drainage of the subsoil, the next question is, does the position face north? If so, it is ideal. Brick, stone, or a building on the south side of the plant should shelter it from all cold winds—it loves heat. Soil on the sandy side is well suited, and if your soil is of a heavy nature, then the addition of sand, sifted mortar rubbish, coal soot, crusted charcoal, oyster shell lime, mixed up in the top six inches of soil, will prevent this class of soil from setting hard in dry weather like a brick, and also in wet weather from becoming like glue and sticking to everything the soil comes in contact with. During the dry weather an inch or two of cow manure or decayed leaves is very beneficial to these plants; in fact sandy soils must be mulched, more so than the heavy, tenacious class of soils. With the latter class of soil, the manure mulch is best mixed with the top two inches of heavy soil. This will keep the soil open, no matter how it rains or how the wind blows, or how powerful the sun's rays are in summer months.

Bougainvilleas are propagated by cuttings in sandy soil, with bottom heat, such as a nurseryman's propagating tank, or by layers; the lowest growths being selected, the same as in layering climbing roses.

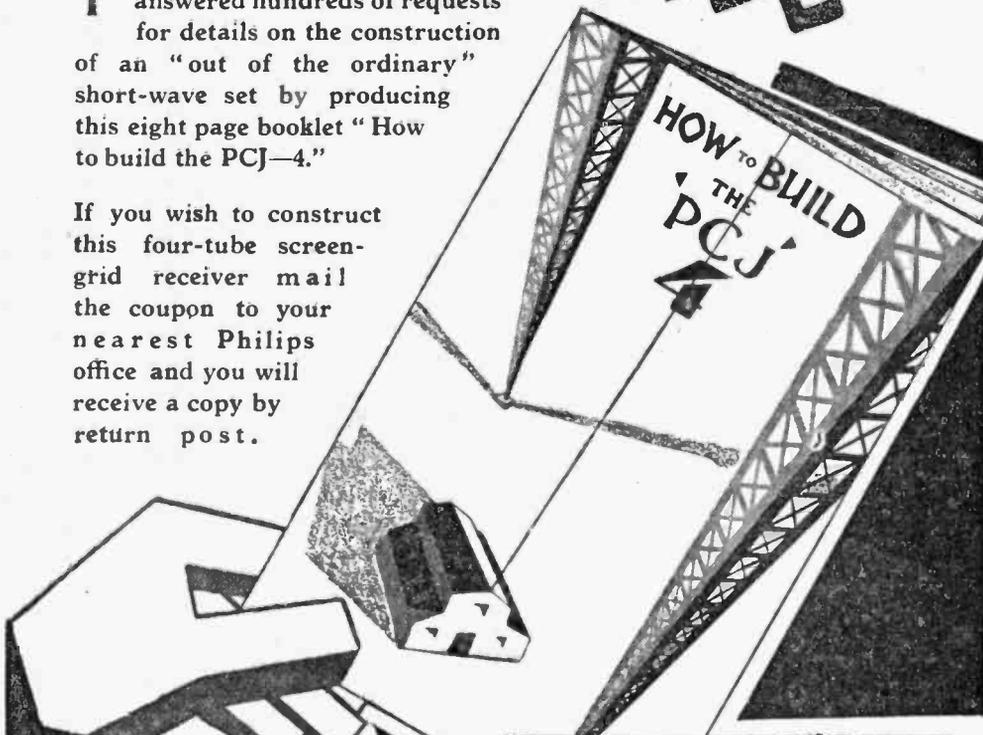
BRYANT'S Ltd., HOME FURNISHERS, Electrical and Radio Dealers

545-547-549-551 GEORGE STREET, SYDNEY

WE WILL BE PLEASED TO MAIL THIS NEW BOOKLET TO YOU FREE

PHILIPS Radio have now answered hundreds of requests for details on the construction of an "out of the ordinary" short-wave set by producing this eight page booklet "How to build the PCJ-4."

If you wish to construct this four-tube screen-grid receiver mail the coupon to your nearest Philips office and you will receive a copy by return post.



Philips Lamps (A'asia) Ltd.,
G.P.O. Box 1799, Melbourne.
G.P.O. Box 2703C, Sydney.
G.P.O. Box H 1337, Adelaide.
Perry House, Elizabeth Street,
Brisbane.

PHOS

To **PHILIPS**

Please mail me a copy of your free booklet
—"How to build the PCJ-4"

Name

Address

.....

Local Programmes, Friday, November 15

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: To-morrow's sporting events, by Oscar Lind.
 10.45: FORACE WEBER at the GRAND ORGAN.
 11.0: HOUSEHOLD HELPS: Cooking by Miss Ruth Furst.
 11.10: CABLES (Copyright), A.P.A. and Sun-Herald News Service.
 11.15: MORNING DEVOTION: Rev. A. E. Walker.
 11.30: Austradio Musical Reproduction.
 11.53: British Official Wireless Press.
 12.0: "Big Ben." Stock Exchange and Metal Quotations.
 12.5: CAPTAIN L. ROBERTS will speak on "Native Tribes in South Africa."
 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: POPULAR EDUCATION. Michael Sawtell will speak on "Terra Australia" (being a talk to arouse real love of Australia).
 2.27: Announcements.
 NOTE: Results of the Cricket Match, Victoria v. England, played at Melbourne, will be transmitted at approximately 2.5.

THE RADIO MATINEE—2.30 to 4.30 p.m.

2.30: THE 2FC INSTRUMENTAL TRIO.
 2.42: GEORGE MOON, Tenor—
 (a) "Broadway Melody" (Brown), Saxophone Accompaniment.
 (b) "Why Do Young Girls" (Moon).
 2.49: MIRIAM MANKEY, Pianist—
 (a) "In Old Vienna" (Viennese Waltz (Goldschmidt)).
 (b) "Ecossaise" (Busoni).
 2.53: THE 2FC INSTRUMENTAL TRIO.
 3.0: LES HARRIS, Saxophone Solos—
 (a) "Eleanor" (Depres).
 (b) "Saxophonobla" (Waldoeft).
 3.1: MIRIAM MANKEY, Pianist—
 (a) "The Bees' Wedding" (Mendelssohn).
 (b) "Waltz in A Flat" (Brahms).
 (c) "Dance of the Little Bell" (Rebikoff).
 3.2: THE 2FC INSTRUMENTAL TRIO.
 3.3: GEORGE MOON, Tenor—
 (a) "No, Sir" (Moon).
 (b) "When My Dreams Come True" (Bertin). Saxophone Accompaniment.
 3.7: THE 2FC INSTRUMENTAL TRIO.
 3.5: LES HARRIS, Saxophone Solos—
 (a) "Marianette" (Arnt).
 (b) "Dancing Nymphs" (Braine).
 4.0: "BUDGUM" will give a talk on "Gardening."
 4.15: Results of the Cricket Match, Victoria v. England, at Melbourne, will be given.
 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: Children's "Good-night" Stories, told by the "Hello Man," assisted by the Farmyard Five.
 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.
 7.50: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

We are continuing our 3LO Relays, and prior to crossing over to Melbourne to-night there are Organ Solos, Song Groups

INDEX

To Local Programmes

FRIDAY, NOVEMBER 15.	
2FC, 2BL	28
2GB, 2UW, 2KY, 2UE	29
SATURDAY, NOVEMBER 16.	
2FC, 2BL, 2GB, 2UW, 2KY, 2UE	32
SUNDAY, NOVEMBER 17.	
2FC, 2BL, 2GB, 2UW	36
2UE	52
MONDAY, NOVEMBER 18.	
2FC, 2BL	38
2GB, 2UW, 2KY, 2UE	39
TUESDAY, NOVEMBER 19.	
2FC, 2BL	42
2GB, 2KY, 2UW, 2UE	43
WEDNESDAY, NOVEMBER 20.	
2FC, 2BL, 2GB, 2UW, 2UE	46
THURSDAY, NOVEMBER 21.	
2FC, 2BL	50
2GB, 2UW, 2KY, 2UE	51

To Interstate Programmes

FRIDAY, NOVEMBER 15.	
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL	30
SATURDAY, NOVEMBER 16.	
3LO, 3AR, 4QG, 5CL, 6WF, 7ZL	34
SUNDAY, NOVEMBER 17.	
3LO, 3AR, 4QG, 5CL, 6WF	37
MONDAY, NOVEMBER 18.	
3LO, 3AR, 4QG, 5CL, 6WF	40
TUESDAY, NOVEMBER 19.	
3LO, 3AR, 4QG, 5CL, 6WF	44
WEDNESDAY, NOVEMBER 20.	
3LO, 3AR, 4QG, 5CL, 6WF	48
THURSDAY, NOVEMBER 21.	
3LO, 3AR, 4QG, 5CL, 6WF	52

by William Bowyer, and a new note in the Dulcitone Recital by Madame Evelyn Grieg. Major-General Antill is speaking at 9 o'clock, and the title of his talk has been a famous toast down the Ages—"The Ladies: God Bless 'Em." Through 2BL Service a Musical Programme of well-known ballads and selections. New sketches by Scott Alexander, and the talk by Wallace Nelson completes our varied offering to-night.

- 8.0: FROM THE AEOLIAN HALL: Organ Recital arranged by G. Vern Barnett.
- 8.15: FROM THE STUDIO: WILLIAM BOWYER, Basso—
 (a) "Out Where the Big Ships Go" (Hewitt).
 (b) "Will the Red Sun Never Set" (Finden).
- 8.22: FROM THE AEOLIAN HALL: Organ Recital arranged by G. Vern Barnett.
- 8.37: FROM THE STUDIO: MADAME EVELYN GRIEG, Dulcitone Solos—
 (a) "Musings" (Pade).
 (b) "In the Woods" (Pade).
- 8.44: WILLIAM BOWYER, Basso—
 (a) "The Witch of Bowden" (Breville-Smith).
 (b) "I Will Walk on the Earth" (Ireland).



MADAME EVELYN GRIEG, giving a Dulcitone recital from 2FC at 8.31 to-night.

- 8.51: MADAME EVELYN GRIEG, Dulcitone Solos—
 (a) "Schummerlied" (Schumann).
 (b) "Traumerlied" (Schumann).
- 8.58: THE COUNTRY MAN'S WEATHER SESSION—
 (a) "New South Wales Forecasts."
 (b) "Interstate Weather Synopsis."
 (c) Yachtsman's and Fisherman's forecast.
- 9.0: MAJOR-GENERAL ANTILL—"The Ladies—God Bless 'Em'".
- 9.15: RELAY FROM 3LO, MELBOURNE.
- 10.0: FROM THE BALLROOM OF THE ORIENTAL: Sydney Simpson's Synco-paters in Dance Music.
- 10.15: FROM THE STUDIO: Announcements. Late Official Weather Forecast.
- 10.20: FROM THE BALLROOM OF THE ORIENTAL: Sydney Simpson's Synco-paters in Dance Music.
- 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.
MIDDAY SESSION—12 Noon to 2.30 p.m.
 12.0: G.P.O. Chimes.
 Announcements.

12.2: LUNCH MUSIC.
 1.0: Afternoon news from the "Sun" and "News."

1.5: Studio Music.
 1.15: Women's Interest Talk—MRS. MEREDITH-ATKINSON will speak on "Geneva."
 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: MAJOR SANFORD-MORGAN, speaking on "Ponharuru."
- 2.45: The "STORYTELLER" will speak on "Avoirdupois of Genius."
- 3.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Synco-paters in Dance Music.
- 3.12: FROM THE STUDIO—HILDA GRACE, Novelty Pianist—
 (a) "African Suite" (Confrey).
 (b) "Noodlin'" (Grissell).
- 3.19: A SONG OF TO-DAY.
- 3.22: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Synco-paters in Dance Music.
- 3.32: FROM THE STUDIO—THE STUDENTS OF THE MACCUNN SCHOOL. Directed by H. W. Varna, in a Radio Play, "THE BLARNEY STONE" (Arranged by H. W. Varna).
 A Tramp H. W. VARNA
 John (a farmer) T. KEITH
 Sibby (his wife) TORY TAUNTON
 Scene: Kitchen of an Irish Farmhouse.
- 3.47: HILDA GRACE, Novelty Pianist—
 (a) "Monkey Biznez" (Johnson).
 (b) "Free Air" (Grove).
- 3.54: MEMORY MELODIES.
- 4.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Synco-paters in Dance Music.
- 4.12: STUDIO ITEMS.
- 4.20: THE STUDENTS OF THE MACCUNN SCHOOL. Directed by H. W. Varna, in a Radio Play entitled, "ROMANCE NEVER DIES" (Arranged by H. W. Varna)—
 Sir Robert Kendal (of the Indian Army) H. W. VARNA
 Wilien (his daughter) TORY TAUNTON
 Scene: At Sir Robert's Home, London.
- 4.35: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Synco-paters in 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: DINNER MUSIC.
6.45: THE BOY SCOUTS' CLUB, Conducted by Mr. Norman Lyons.
7.5: A Sporting Talk by CLAUDE CORBETT
7.15: 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's feature to-night—Constance Burt in songs with orchestral accompaniment, and Alexander Raff, who is well known to Melbourne listeners; new sketches by Scott Alexander and well-known selections by the National Broadcasting Orchestra will appeal to many listeners. Wallace Nelson's talk at 9.15 will make a pleasant break.

8.0: THE NATIONAL BROADCASTING ORCHESTRA, Conducted by Horace Keats. "Schubertiana" (Arr. Finck).

8.15: ALEXANDER RAFF, Bass-Baritone—(a) "The Sun God" (James).
(b) "Trade Winds" (Keel).
(c) "Fairings" (Easthope Martin).

8.22: DULCIE BLAIR, Violinist—"Adagio from Concerto in G Minor" (Bruch).

8.29: THE NATIONAL BROADCASTING ORCHESTRA—Overture, "Rosamunde" (Schubert).
Overture, "Orpheus" (Offenbach).

8.44: CONSTANCE BURT, Soprano—(a) "Chansonette" (McBurney).
(b) "J'ai Pleure on Reve" (Hue).
(c) "Un Doux Llen" (Delbrook).

8.52: SCOTT ALEXANDER and Company, in an original farcical skit by Codrington Ball, entitled—

"HIGHER EDUCATION."
9.2: THE NATIONAL BROADCASTING ORCHESTRA—

"The Children's Overture" (Quilter).
9.15: WALLACE NELSON—"An Afternoon with George Bernard Shaw."

9.28: Weather Information for the Man on the Land.

9.30: CONSTANCE BURT, Soprano—(a) "Parting" (Brahms).
(b) "Ah lo So," from "The Magic Flute" (Mozart).

9.37: DULCIE BLAIR, Violinist—(a) "Pregliera" (Martini-Kreisler).
(b) "Chanson et Pavane" (Couperin-Kreisler).

9.44: THE NATIONAL BROADCASTING ORCHESTRA—

Selection, "Tip Toes" (Gershwin).
9.54: SCOTT ALEXANDER presents a sparkling comedy specially written for Radio by Codrington Ball, entitled—

"ON THE ROAD WITH RHODA."
10.4: ALEXANDER RAFF, Bass-Baritone—

(a) "THE Ballad Monger" (Easthope Martin).
(b) "Rolling Down to Rio" (German).
(c) "The Yeomen of England" (German).

10.11: THE NATIONAL BROADCASTING ORCHESTRA—

Suite, "Fyde Park" (Jalowiez).
10.25: 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.
11.15: Talk by Mrs. Jordan.
11.30: Music.
11.45: Close.
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. "Courage and Fear."
3.15: Music.
3.30: Close down.
5.15: Children's Session, by Uncle George.
6.50: Metro-Goldwyn-Mayer Radio Movie Club Session.
7.0: Music.
7.45: Feature story.
8.0: Miss Molly Long, 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: Violin solos.
8.50: Miss Florence Grant, soprano.
9.0: Weather.
9.3: Address.

9.15: Miss Molly Long, contralto.
9.25: Symphony Orchestra.

9.30: Mr. Clement Hosking, baritone.
9.40: Mr. Jack Win and Mr. Leath Burdock, humor.

9.45: Symphony Orchestra.
9.50: Miss Florence Grant, soprano.
10.0: Instrumental music.

10.30: Close down.

2UW

Radio Broadcasting, Ltd., Pallin's Building, Ash St., Sydney (Wavelength, 262 Metres).

MIDDAY SESSION.

12.30: Request numbers.
1.0: 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 down.
7.0: Request numbers.
8.0: Popular music.

9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
9.10: Musical 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: Calls and announcements.
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.
12.0 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.
8.10: Women's information service. MRS. GRAY.

8.30: Music and vocal items, from the studio.
9.10: SPORTING FEATURE. From the ringside of McHugh's Leichhardt Stadium, full description of main 15-round event.

10.0: Closing announcements.

2UE

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

EARLY MORNING SESSION.

7.15: Orchestral breakfast-time selections.
7.59: Announcements.
8.0: Clock and chimes.

8.30: Close down.
MIDDAY SESSION.

10.0: Women's Session, conducted by Miss D. Vautier, with musical selections.
11.30: Old-time musical selections.
12.0 noon: Announcements. Close down.

AFTERNOON SESSION.

1.0: Orchestral and vocal items.
1.45: Organ recital.
2.0: Vocal and instrumental selections.

2.30: Close down.
EVENING SESSION.

6.30: Wendy's Hour with the children.
7.15: Orchestral dinner music.
7.58: Programme announcements, and news from the "Sun."

8.0: Overture, selections from "Faust."
8.11: Vocal and orchestral concert.
10.15: Close down.



**Announcing
MODEL 3
1930 Release of
ETC**

ALL ELECTRIC SET.
With Many Special Features

- ☐ No Aerial,
- ☐ Static Reducer,
- ☐ Continuous selectivity control,
- ☐ No interference,
- ☐ Key switch,
- ☐ 4 Philips A.C. Valves,
- ☐ Completely shielded.

PRICE OF SET
£21'10'.

SPEAKER, £2/10/-

FREE
RADIO LICENCE FOR
12 MONTHS

A Special Bonus of a Radio Licence, costing £1/4/-, will be presented to the first 50 purchasers of this model.

RING M3065

For a demonstration in your own home, with no obligation.

You will be astonished at the results of this Wonder Set. E.T.C. stands for Highest Quality. Easy terms arranged if desired.

Electric Trading Co.,

Wembley House, 3rd Floor
845 George Street,
Sydney.

Interstate Programmes, Friday, November 15

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wave-length, 371 Metres).

EARLY MORNING SESSION

7.0: Time signal. 7.1: Shipping news. 7.3: Physical exercises to music. 7.25: Music. 7.40: Mail notices. 7.42: What's on air. 7.45: Market reports. 7.53: Weather. 7.55: News. 8.0: Time 8.1: Arrival times of express trains. 8.3: Musical interlude. 8.15: Close.

MORNING SESSION

10.30: Current happenings in sport, by Mel. Morris. 10.45: Music. 11.0: Fish market reports. 11.3: Music. 11.30: Morning sales, Melbourne Stock Exchange: metal prices. 12.0: Time. 12.1: Music. 12.15: News: cables. Corn Exchange, midday report. Newmarket stock sales. Associated Stock and Station Agents' official report. 12.30: Close down.

MIDDAY SESSION

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

EDUCATIONAL SESSION

2.0: "The Races and Peoples of the World," by H. J. G. Esmonde. 2.15: Description of the cricket match, England v. Victoria, at the M.C.C., by Mel. Morris. 4.0: Musical interlude from the studio. 4.15: Description of the cricket match, England v. Victoria, at the M.C.C., by Mel. Morris.

THE CHILDREN'S CORNER

6.0: "Plain Peter" and "Rolling-in Rita": birthday greetings.

EVENING SESSION

6.45: Swimming: Hints for the forthcoming Season—Mr. Les. Uren. 6.55: Musical interlude. 7.0: Time. 7.1: Countryman's session: Stock Exchange information: 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 Fruit-growers' Association: citrus fruit prices, supplied by the Victorian Central Citrus Association: weather synopsis: river reports: rainfall data. 7.25: Gardening Hints—Trenching and Draining, by Mr. W. R. Warner. 7.40: News. 7.45: A resume of to-day's cricket match.

NIGHT SESSION

8.0: 59th Battalion Band, Bandmaster, Sgt. J. Dougherty, "Fantasia of Scottish Airs."
8.10: Bebe Hill and Vernon Sellars, Moments of Mirth and Melody.
8.20: The A.B.C. String Quartette, movement from "Quartette" by Haydn.
8.30: A one-act sketch, "Perfection," by Vern Berlinger, Mr. Maurice Dudley, She. Mrs. Maurice Dudley.
8.45: Postal Institute Choir (conductor, George English), the champion choir of Australia, in "The Revenge" (Stanford), with full orchestral accompaniment.
9.15: The 59th Battalion Band (bandmaster, Sgt. J. Dougherty), "The Cossack" (Rimmer), "Knight of the Road" (Rimmer).
9.25: Bebe Hill and Vernon Sellars, More Humor and Melody.
9.35: 59th Battalion Band, Descriptive Reveille, "The Beginning of a Day's Work in a Military Camp with the Citizen Force Trainees at Seymour. Orders and Incidents arranged by Captain May: marches, "Imperial Echoes" (Safiron), "Bon Accord" (Muddiman).
9.40: The Postal Institute Choir, "Fire! Fire! My Heart" (Morley), "King Arthur" (traditional), "Sweet Flowers" (Walmesley).
10.0: Edouard Lambert, violin, "Adagio" (Vieuxtemps).
10.6: 59th Battalion Band, march, "Punchline" (Rimmer).
10.15: Eric Welch will speak on "To-morrow's V.A.T.C. races at Caulfield."
10.25: 59th Battalion Band, march, "Dunroon" (Percy Coder).
10.30: News.
10.40: Paul Jeaude and His Band, latest and brightest dance numbers.
11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wave-length, 384 Metres).

MORNING SESSION

8.15: Music. 8.45: Weather. 9.1: News. 9.5: Music. 10.1: British Official Wireless news. 10.10: Announcements. 10.30: Arnold Coleman at the Wurlitzer. 10.50: The daily broadcast service. 11.0: Close down.

MIDDAY SESSION

12.0: Description of the cricket match, England v. Victoria, at the M.C.C., by Eric Welch. 1.30: Luncheon music, supplied by the Studio Light Orchestra.

AFTERNOON SESSION

2.15: Topical chatter—The Flapper and Auntie. 2.30: Musical interlude. 2.45: A woman's wanderings through the Empire—Miss Frances Fraser. 3.0: Studio Light Orchestra—"Valse des Alouettes" (Drigo), "Gaudiana" (Gottmann), "Valse" (Levitz). 3.10: Sheila Marsden, soprano—"Music, when Soft Voices Die" (Besley), "Go Not, Happy Day" (Bridge). 3.17: A quarter of an hour with Russian composers; annotated and played by Lesbia Dobson, piano—(a) "Berceuse" (Linsky); (b)

"Humoreske" (Levine); (c) "Cuckoo" (Arensky); (d) "The Lark Sings" (Tschakowsky), 3.42: One act play, "Dreams Oft Come True," Characters: He, Frank Hareley, She, Irene Burke, Time, to-day. Scene, a sitting-room. 3.57: Studio Light Orchestra—Oriental Intermezzo, "In the Soudan" (Sebek); "Down in the Forest" (Landon Ronald). 4.7: Sheila Marsden, soprano—"Songs My Mother Taught Me" (Dvorak); "Spring Nishi" (Schumann), 4.14: Bertha Jorgensen, violin—"Andante" (Tschakowsky), 4.20: Studio Light Orchestra—Selection, "Kissing Time" (Caryll), 4.30: Music. 5.1: Music. 5.30: Weather. 5.45: Close.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air to-night? 7.32: Sporting results. 7.35: Road notes. 7.40: Latest musical releases. 8.0: Chimes.

NIGHT SESSION

8.1: A.I.F. recollections—Shutting the Gates at Villers Bretonneux, Mr. D. Ellis; community singing. 8.15: Community singing transmitted from the Malvern Town Hall; conductor, Frank Hareley. 10.20: Weather. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wave-length, 385 Metres).

EARLY MORNING SESSION

7.30: News. 7.58: Time 8.0: Records. 8.15: News. 8.30: Close.

MORNING SESSION

11.0: Music. 11.5: Social news. 11.55: A cookery talk by "The Etiquette Girl." 12.0 (noon): Close.

MIDDAY SESSION

1.0: Market reports and weather. 1.30: Luncheon music. 2.0: Close down.

AFTERNOON SESSION

3.0: Records. 3.30: Mail train running times. 4.15: News. 4.30: The Carlton Happiness Boys. 5.0: Close.

EARLY EVENING SESSION

6.0: Mail train running times: mail information: shipping news: dinner music. 6.25: Commercial announcements. 6.30: Bedtime stories, conducted by the "Sandman".

Late Commercial News

7.0: News. 7.5: Stock Exchange. 7.8: Metal quotations. 7.7: Market reports. 7.25: Penwick's stock report. 7.30: Weather information. 7.40: Announcements. 7.43: Standard time signals. 7.45: To-morrow's sporting fixtures reviewed.

NIGHT SESSION

8.0: The Ipswich Railway Band (conductor, Lieut. F. W. G. McLeod), selection, "H.M.S. Pinfore" (Sullivan).
8.11: Doris McInnes (soprano), "A Sprit Flower" (Tipton).
8.15: Ipswich Railway Band, cornet solo, "I Passed By Your Window" (Brahm), (with band accompaniment).
8.20: Harry Borradaie, entertainer.
8.30: Ipswich Railway Band, hymn, "Nearer, My God, to Thee" (arr. McLeod), with variations.
8.39: J. P. Cornwell (bass), "In the Heart of the Hills" (Lee).
8.44: Bert Harrow, a little nonsense.
8.53: The Ipswich Railway Band, popular number, "Wedding of the Painted Doll" (Brown).
9.0: Metropolitan weather forecast: week-end road information for motorists officially supplied by the Royal Automobile Club of Queensland.
9.15: The Ipswich Railway Band, selection, "Memories of 1914-1918" (McLeod), founded on war-time favorites and ballads.
9.25: Jeannette Smales (soprano), "Happy Song" (De Rose).
9.32: The Ipswich Railway Band, cornet solo, "Because" (arr. Rimmer), band accompaniment.
9.37: J. P. Cornwell (bass), "By the Light of the Moon" (Loughborough).
9.41: Bert Harrow, more fun.
9.50: The Ipswich Railway Band, selection, "Country Girl" (Monckton).
10.0: News: weather.
10.15: Three-quarters of an hour's syncopeation, The Rhythm Rascals.
11.0: Close.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wave-length, 469 Metres).

MORNING SESSION

11.15: Recordings. 11.45: Kitchen Craft and Menu Talk. 12.1: Recordings. 12.15: News. 12.40: Recordings. 12.52: Railway, Stock Exchange, and Meteorological information. 1.1: Player Piano Set Results. Victoria v. England, at Melbourne. 2.0: Close.

AFTERNOON SESSION

3.0: International Cricket Scores, Victoria v. England, at Melbourne. 3.2: Programme Review and Announcements. 3.5: International Cricket Scores, England v. Victoria, at Melbourne. 4.2: Player Piano Session. 4.15: An Educational Talk. 4.25: Stock Exchange. International Cricket Scores, England v. Victoria, at Melbourne. 4.30: Close.

EVENING SESSION

6.0: Children's Greetings. 6.30: Dinner Session. 7.1: Birthday League Greetings. Sporting Service. "Silbus" gives a selection for to-morrow's races at Port Adelaide and Caulfield. International Cricket

Scores, England v. Victoria, in Melbourne. Stock Exchange, Market Reports. 7.20: Rev. E. S. Kiek, M.A., B.D., will speak to you. 7.35: Sir David Gordon will give a talk of interest to Everybody. 7.45: Mr. A. Grenfell-Price, M.A., B.D., will speak on "Pioneers of Australia."

NIGHT SESSION

8.0: Programme Review.
8.10: A concert from Malverna Methodist Church, Fred Pilgrim, Organ Solo, "Spring Song" (Hollins), Gwen Collett, contralto, "Song of Thanksgiving" (Allitsen), Mrs. Charles Chinner and Mrs. Fred Pilgrim, Violin Duettists, "Andante from Double Concerto" (Bach), Phyllis Webb, soprano, "Night-fall at Sea" (Montague Phillips), "I Heard You Singing" (Coates), Lindsay Jessop and Ray Wood, Vocal Duettists, "Watchman, What of the Night?" (Sargent), Gwen Collett, Contralto, "You Alone of Me" (Sanderson), "Memory" (Edna Rosalind Park), Fred Pilgrim, Organ Solo, "Cantilena Pastorale" (Gulmanti), Phyllis Webb, Soprano, "Morn'g" (Oley Speaks), "The Snowdrop" (Harold Craxton), Mrs. Charles Chinner and Mrs. Fred Pilgrim, Violin Duettists, "Golden Sonata" (Purcell), Ray Wood, Bass, "Star of Eve" (Wagner), "To Anthea" (Hutton).

9.0: Meteorological Information, including Semaphore Tides.
9.2: Overseas Grail Report.
9.3: Announcements.
9.5: From Malverna Methodist Church, continuation of concert, Phyllis Webb and Lindsay Jessop, Vocal Duettists, "The Day is Done" (Lohr), Gwen Collett, Contralto, "Three Fishers" (Hullah), "The Lord is My Light" (Allitsen), Mrs. Charles Chinner, Violin Solos, "In the Cradle" (Bradley), "Perpetuo Mobile" (Bohm), Lindsay Jessop, Tenor, "Mother of Mine" (Tours), Mrs. Charles Chinner and Mrs. Fred Pilgrim, Violin Duettists, "Souvenir de Campagne," "Serenade" (Godard), Ray Wood, Baryt., "Consider and Hear Me" (Wooler), Phyllis Webb, Soprano, "O'er the Mountains" (Quiller), Fred Pilgrim, Organ Solo, "Grand Chorus" (Faulkes).
10.15: News, Weather, Sporting, International Cricket Scores, England v. Victoria, at Melbourne. 10.30: Dance Recordings.
11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wave-length, 455 Metres).

EARLY MORNING SESSION—7.30: Chimes. 7.31: Meteorological report. 7.35: Music. 7.55: Mails and shipping intelligence. 8.0: What's on to-day? 8.5: World-wide cables. 8.10: Musical reproduction. 8.27: Musical reproduction. 8.30: Close.
MORNING SESSION—TRADERS' DEMONSTRATION—10.0: Chimes 10.1: Chimes 10.10: Women's interest talk by Dorothy Graham. 10.30: Organ recital from the Ambassadors Theatre. 11.0: Close.
MIDDAY SESSION—12.30: Chimes. 12.31: Music. 12.35: Market reports. 12.45: Midday news service. 12.55: Items of interest. 1.0: Chimes. 1.1: Weather. 1.2: Luncheon music. 2.30: Close.
THE RADIO MATINEE.—3.30: Chimes. 3.31: Musical reproduction. 3.45: A message from the Labor women's organization. 4.0: Chimes. 4.1: Concert broadcast from Nicholson's studio. 4.55: 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 Auntie Maxine. 6.15: A.B.C. Younger Set session. 6.30: Dinner music. 7.30: Weather. 7.31: News service. 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: Chimes. 8.1: Weather. 8.2: Instrumental trio. 8.15: To-morrow's racing anticipations. 8.30: Instrumental Trio. 8.45: James Conarty, "Helpful Hints to Garden Lovers." 9.0: Chimes. 9.1: Weather. 9.2: Instrumental Trio. 9.15: Ringside descriptions of wrestling contest. 10.20: Temple Court Dance Band. 10.59: Weather report. 11.0: Chimes.

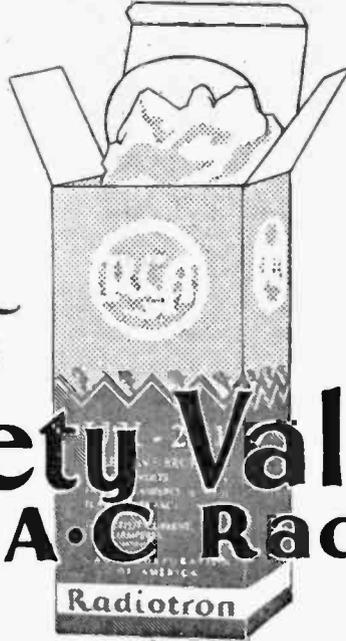
7ZL

Tasmanian Broadcasters Pty., Bursary Bldgs., Elizabeth Street, Hobart (Wave-length, 516 Metres).

11.30 a.m.: Record recital. 11.34: Midlands weather forecast. 11.35: Record recital. 11.55: Tasmanian stations. 9.0: Weather report. 12.0: Shipping information; notices; housewives' guide. 12.8: Record recital. 12.30: News; announcements. 12.40: Record recital. 1.5: Railway auction sales. 1.10: Record recital. 1.30: Close down. 3.0: Record recital. 3.4: Weather. 3.5: Record recital. 4.15: Personalities. 4.30: Close. 6.15: Children's Corner with "Uncle David." 7.10: Record music. 7.30: News session. 7.40: An hour with Harold Williams, baritone, and Galli-Curci, soprano (interspersed with instrumental numbers). 8.45: James Conarty, "The History and Development of Music." 9.45: News session. 10.0: G.P.O. clock chimes the hour. 10.1: Close down.

METAL CABINETS.
Finished in Attractive Designs.
Made by
HARRY CRABB, LTD.,
261 Riley Street, City.
'Phone, FL1887.

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.

38 King Street, Civic Centre, NEWCASTLE. 821 Dean Street, CANBERRA. Keen Street, 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 full 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 UX17A
 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

Local Programmes, Saturday, November 16

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.
 8.10: **CONDITION OF THE ROADS**, supplied by the Main Roads Board.
 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 the A.J.C. Meeting in the running.
NOTE: Results of the Cricket Match, Victoria v. England, played at Melbourne, will be transmitted at approximately 2.5 and 4.15.

During the afternoon a musical programme will be transmitted from the Studio.

4.35: Late Sporting Results.

4.45: **CLOSE**.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 6.45: Children's "Good-night" 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. Weather Forecast. Late news from the "Sun" and "News."
 7.58: To-night's programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

In Radio probably more than in any other form of entertainment, we are continually casting about for something which is different, and to-night our Programme taken from the Coogee Pier on the occasion of the Official Opening of the Shark Proof Enclosure, and the New Market Aeroplane Trip, which we are conducting in conjunction with Wireless Weekly, will, we think, fully realise the expectations of our Listeners.

- 8.0: **FROM COOGEE PIER**: A description of the Surf Mannequin Parade—Dance Music and a Concert Programme from the Pavilion, supplied by well-known Radio Artists. During the evening an illuminated Aeroplane, which is making a Moonlight Trip over Sydney, will pass over Coogee, and an attempt will be made to carry out a transmission from the Plane, describing Coogee by Moonlight. The DH50 Aeroplane has been specially

equipped by "Wireless Weekly."

- At approximately 9 o'clock, description of the Pyrotechnic Display.
 Dance Music from the Pier, and items by the Concert Party until 10 p.m.
 10.0: **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, 355 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: **MR. G. COOPER** will give a talk on "Gardening."
 11.0: G.P.O. Chimes. Close Down.

MIDDAY SESSION—12 noon to 2 p.m.

- 12.0: G.P.O. Chimes
 Announcements.
 12.2: **LUNCH MUSIC**
 1.0: Afternoon news from the "Sun" and "News."
 1.5: Studio Music.
 1.30: **FROM COOGEE PIER**, on the occasion of the Official Opening of the Shark Proof Fence.
 Programme by the Maroubra Silver Band. Description of the Procession.

AFTERNOON ENTERTAINMENT—2 to 5.15 p.m.

- 2.0: **FROM THE STUDIO**—Results of the Cricket Match, ENGLAND v. VICTORIA, played at Melbourne.
 2.5: **BASIL RYE, Baritone**—
 (a) "The Paupers Drive" (Homer)
 (b) "Danny Deever" (Damosch).
 2.12: **THE NEWEST DANCE NUMBERS.**
 2.30: **LOIS EVANS, Soprano**—
 (a) "Give Me Youth and a Day" (Drummond).
 (b) "The Old Clock" (Drummond).
 (c) "Hayfields and Butterflies" (Del Riego).
 2.37: **RADIO RHYTHM.**
 2.47: **CHARLES SADLER**, in Different Numbers—
 (a) "Silly Ass" (Leigh).
 (b) "When Flossie Found her First Grey Hair" (Smith).
 2.54: **A NEW SONG.**
 3.0: **FROM COOGEE PIER**—Description of the scene prior to the Official Opening of the Shark Proof Fence.

His Worship the Mayor will officially open the Shark Proof Area, and will host an Australian Ensign on the Mast of H.M.S. Sydney, in front of the Pier Office.
 At 4 o'clock his Worship the Mayor will open the Surf Sheds.

- 4.20: **FROM THE STUDIO**—Results of the Cricket Match, ENGLAND v. VICTORIA, played at Melbourne.
 4.25: **LOIS EVANS, Soprano**—
 (a) "Cavatina La Sonnambula" (Bellini)
 (b) "Charming Chloe" (Gorman).
 4.32: **CHARLES SADLER**, in Different Numbers—
 (a) "The Grass is Always Greener" (Whiting).
 (b) "Hard Hearted Hannah" (Bates).
 4.39: **MEMORY MELODIES.**
 4.43: **BASIL RYE, Baritone**—
 (a) "Bombardier Jim" (Morgan).
 (b) "Inter Vos" (McFadyen).
 5.0: Complete Sporting and Racing Resume.
 5.15: Close Down.
THE DINNER HOUR—6.15 to 7.55 p.m.
 6.15: **DINNER MUSIC.**

- 6.45: "The Captain" to his Comrades.
 7.5: The A.B.C. Sporting Service.
 7.17: Studio Music.
 7.30: Austradio Musical Reproduction.
 7.55: What's on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 12.

Saturday night's programme through 2BL is always on popular lines; and to-night our offering is no exception—gay stories by Charles Lawrence; new songs by Len Maurice; Slavonic Dance Music by the Australian Broadcasting Dance Band; and banjo solos will, we think, provide a happy radio interlude.

- 8.0: **CHARLES LAWRENCE**, entertainer—
 (a) "The Little Yellow Dog" (M.S.).
 (b) "The Zoo Guyed" (Darling).
 8.10: **HARRISON WHITE, Banjoist**—
 (a) "Good Little, Bad Little You" (Stpet)
 (b) "I'll Always be in Love with You" (Ruby).
 (c) "Dream Train" (Newman).
 8.17: **LEN MAURICE, Popular Vocalist**—
 8.24: **A HUMOROUS INTERLUDE.**
 8.32: **POPULAR PROGRAMME.**
 9.32: Weather Information for the Man on the Land.
 9.34: **AUSTRALIAN BROADCASTING DANCE BAND.**
 9.36: **CHARLES LAWRENCE**, Entertainer—
 (a) "The Fancy Dress Ball" (Henry).
 (b) "Thinnest Girl I Know" (Charles).
 9.58: **HARRISON WHITE, Banjoist**—
 (a) "The Wedding of the Painted Doll" (Brown).
 (b) Popular Selection, including—"I've never seen a smile like yours" (Harrison).
 "Broadway Melod" (Brown).
 "Sweetheart of all my Dreams" (Fitch).
 10.3: **LEN MAURICE, Popular Vocalist.**
 10.10: **A NEW IDEA IN RADIO.**
 10.17: **AUSTRALIAN BROADCASTING DANCE BAND.**
 10.25: Late News from the "Sun" and "News." Late Weather Forecast.
 10.30: **AUSTRALIAN BROADCASTING DANCE BAND.**
 12.0: **"NATIONAL ANTHEM."**
CLOSE.

2GB

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

- 3.0: Musical session.
 5.15: Children's session, by Uncle George.
 6.50: M.-G.-M. Radio Movie Club session.
 7.0: Request Hour.
 8.0: Musical session.
 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Pulling's, Building, Ash St., Sydney (Wavelength, 287 Metres).

- 5.30 p.m.: Children's Hour, conducted by Uncle Jack.
 6.30: Close.
 7.0: Musical programme.
 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 to 8.30.**
EVENING SESSION, 6.30 to 10.15, as usual.

TRANSFORMERS

"B" Eliminator, Power Pack, and Power Transformers for all voltages. Eliminator Chokes at 5/- ea. Transformer Iron cut to size at 1/6 per lb. Rotary Convertors to suit all requirements.

F. T. S. O'Donnell, Griffin & Co., Limited,

M2991. 51-53 Druitt Street, Sydney.



**THEY
ALL USE**

**PHILIPS
VALVES**



B+C+1

9R61

Ltds. of Philips Lamps (Australia) Ltd. (Radio Dept.) Head Office and Showrooms, corner Clarence and Margaret Streets, Sydney, N.S.W.]

Interstate Programmes, Saturday, November 16

3LO

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 311 Metres).

EARLY MORNING SESSION
7.0 to 8.15: See Friday.
MORNING SESSION
10.30 to 12.30: See Friday.

MIDDAY SESSION
1.0: Time. 1.1: Stock Exchange; weather. 1.15: Day's news. 1.25: Description of Kasuka Hurdle Race, 2m. 65yds., V.A.T.C. races at Caulfield, by Eric Welch. 1.55: Melody broadcast.

AFTERNOON SESSION
During the afternoon results of the Warrnambool and Marong races will be broadcast as they come to hand.
2.15: Description of cricket match, England v. Victoria, at M.C.C., by Mel. Morris. 3.0: Description of A-madde Handicap, 1m. 2f., V.A.T.C. races, at Caulfield, by Eric Welch. 3.10: Description of cricket match, England v. Victoria, at M.C.C. by Mel. Morris. 3.35: Description of Tara Steeple Chase, about 2m., V.A.T.C. races, by Eric Welch. 3.45: Description of cricket match, England v. Victoria, at M.C.C., by Mel. Morris. 4.0: Musical interlude. 4.10: Description of Ormond Stakes, 1m. V.A.T.C. races, at Caulfield, by Eric Welch. 4.20: Description of cricket match, England v. Victoria at M.C.C., by Mel. Morris.

THE CHILDREN'S CORNER
5: "Little Miss Kookaburra" 6.10: Musical interlude. 6.15: Birthday greetings.

EVENING SESSION
6.40: Sporting results. 6.55: Musical interlude. 7.0: Time. 7.1: Countryman's session. 7.25: Resume of to-day's cricket match. 7.40: News. 7.45: Wandering Round the World—Madagascar, gascar, by Mr. H. J. G. Esmonde. 8.0: Melbourne Observatory time signal.

NIGHT SESSION
9.0: Victorian Railways Military Band (conductor, Arthur Becher). "Humoreske" (Dvorak), "Aubade Napolitaine" (Aletier).
9.10: Meistersingers' Male Quartette, "The Landlord's Daughter" (Hattori), "By Cella's Arbor" (Horsley), "Simple Simon" (Maury).
9.18: Robert J. Amor, mandoline, "Un Peu d'Amour" (ISlexu), "Me Neenyah" (Spanish).
9.24: Kate Cornell, entertainer, "Mrs. Murphy on Borrowing" (Barry Pain).
9.34: Victorian Railways Military Band, valse, "Di-Hydropaten" (Gungl).
9.44: Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "Serenata" (Toselli); Jovan Massonoff, tenor, "I Hear You Calling Me" (Marshall); Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "Home to Our Mountains" (Verdi).
9.54: Robert J. Amor, mandoline, "Deep Night" (Vallee and Henderson), "I Must Have That Man" (McHugh).
9.0: A special programme has been arranged.
9.30: The Meistersingers' Male Quartette, "Watch Her Kindly Stars" (Buck), "The Feathered Romance" (Bridge).
9.38: Victorian Railways Military Band, intermezzo rocooco, "Rendezvous" (Aletier), march, "Entry of the Bulgars" (Loiter).
9.48: Kate Cornell, entertainer, "A Queer Physician".
9.58: Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "Rose of My Heart" (Lohr); Sybil Graham, soprano, "Flower Song" from "Faust" (Gounod); Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "O Sole Mio" (Di Capua).
10.8: Victorian Railways Military Band, selection, "The Pirates of Penzance" (Sullivan).
10.20: British Official Wireless News; meteorological information; closing of Mine" (Rose and Dixon).
10.30: Paul Jeacle and His Band, dance music.
11.30: God Save the King.

off, tenor, duet, "Serenata" (Toselli); Jovan Massonoff, tenor, "I Hear You Calling Me" (Marshall); Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "Home to Our Mountains" (Verdi).
9.54: Robert J. Amor, mandoline, "Deep Night" (Vallee and Henderson), "I Must Have That Man" (McHugh).
9.0: A special programme has been arranged.
9.30: The Meistersingers' Male Quartette, "Watch Her Kindly Stars" (Buck), "The Feathered Romance" (Bridge).
9.38: Victorian Railways Military Band, intermezzo rocooco, "Rendezvous" (Aletier), march, "Entry of the Bulgars" (Loiter).
9.48: Kate Cornell, entertainer, "A Queer Physician".
9.58: Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "Rose of My Heart" (Lohr); Sybil Graham, soprano, "Flower Song" from "Faust" (Gounod); Sybil Graham, soprano, and Jovan Massonoff, tenor, duet, "O Sole Mio" (Di Capua).
10.8: Victorian Railways Military Band, selection, "The Pirates of Penzance" (Sullivan).
10.20: British Official Wireless News; meteorological information; closing of Mine" (Rose and Dixon).
10.30: Paul Jeacle and His Band, dance music.
11.30: God Save the King.

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

EARLY EVENING SESSION
6.10: News. 6.30: Bedtime stories, conducted by "Uncle Ben." 7.0: To-day's races in detail. 7.20: Sporting notes. 7.30: Sailing notes, by Mr. Fred Smith.

NIGHT SESSION
8.0: A comedy, "The Bontswain's Mate," by W. W. Jacobs. Cast: George Benn and Ned Travers, Ernest Barry; Mrs. Waters (landlady of "The Beehive"), Dulcie Scott. Scene: The Bar of the "Beehive" Inn.
8.30: The Aloha Trio, Hawaiian entertainers. Ben Cloirec (tenor), "Slumber On" (Jackson); Claude Walker, ten minutes with Henry Lawson; Mrs. Robt. Bell (soprano), "Sometimes When I'm Far Away" (Darewski); W. H. Davis, cornet solo, "L'Adieu" (Schuberl); metropolitan weather forecast. Note—At suitable times during the evening the two semi-finals and the final of the main trophy race at the speedway will be relayed; the Aloha Trio, Hawaiian melodies; Ben Cloirec (tenor), "Star Victim" (Archer); W. H. Davis, cornet solo, selected; Mrs. Robt. Bell (soprano), "Let All My Life be Music" (Spross); the Aloha Trio, Hawaiian melodies.
10.0: News; weather. Close.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION
8.15 to 11.0: See Friday.

MIDDAY SESSION
12.0: Description of cricket match, England v. Victoria, at the M.C.C., by Eric Welch. 1.30: Luncheon music. 2.1: The Idylls of the King—The Passing of Arthur, Rev. W. Bottomley. 2.15: Musical interlude. 2.20: Life in the Tropics, Mr. A. A. Downs. 2.25: Musical interlude. 2.40: Old coaching days—Mr. Frank Smiley. 2.55: Musical interlude. 3.0: G.P.O. chimes.

THE RADIO MATINEE
3.1: Paul Jeacle and his band—"Faust Privatities" (Black), "Freeze Out" (Waller). 3.6: Les Rohmer, entertainer—"Old Song of Mine" (Rose and Dixon); "Little Cabin by the Waterfall" (Rohmer). 3.13: Claude Jeacle, baritone—Selected. 3.17: Olive Waite, soprano—"A Summer's Night" (Thomas); "Down Here" (Brahms). 3.24: Norman Phil comedian—A few humorous moments. 3.32: Paul Jeacle and his band—"Is It Possible?" (Dixon); "Guess Who's in Town" (Razall). 3.38: Dolly Burdett, contralto—"Through the April Meadows" (Brahms); "Vol Cie Sapete" (Mozart). 3.45: Bob Libby—Trumpet solo, selected. 3.49: Comedy sketch—"Two in a Trap." Characters: Jim, Chas. R. Dyson. Kit, Mrs. Maurice Dudley. 4.4: Paul Jeacle and his band—"The Pump Song" (Lerner); "Love Thrills" (Meyer). 4.10: Les Rohmer, entertainer—"Lolita" (Stoneham); "La Paloma" (Yradier); "Wedding of the Painted Doll" (Brown). 4.18: Charles Coram—Saxophone solo, selected. 4.22: Olive Waite, soprano—"Open Thy Blue Eyes" (Massenet), selected. 4.29: Norman Phil, comedian—"The Old Showman". 4.37: Paul Jeacle and his band—"Pagan Love Song" (Brown); "What Do I Care?" (Clare); "Rhythm King" (Hoover). 4.45: Dolly Burdett, contralto—"Heartase" (Willoughby); "Charmaine" (Polack). 4.52: Paul Jeacle and his band—"By the Lake" (Lange); "Blue Idol" (Prazer); "That's My Idea of Heaven" (Whiting). 5.1: Music. 5.30: Weather. 5.45: Close.

EVENING SESSION
6.15: Dinner music. 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—Selection, "Aida" (Verdi).
8.10: Garnet Kemsley, recital—Selection from "A Tale of Two Cities" (Dickens); "The Actor."
8.18: Alfred Ackland, violin—"Gavotte" (Boccherini).
8.23: Julia Russell, soprano—"Love, the Jester" (Phillips); "The White Poppy Dances in the Sun" (Linda Phillips).
8.30: National Broadcasting Orchestra—"Ballet Egyptian" (Liszt).
8.40: The A.B.C. Entertainers present thirty minutes of music, mirth, and melody.
9.10: National Broadcasting Orchestra—Selection, "The Geisha" (Jones).
9.20: Newcastle H. Rush, baritone—"Blow, Blow, Thou Winter Wind" (Sargent); "The Carpet" (Sanderson).
9.27: J. Barrile, flute—"Scherzo Capriccio" (Salathel).
9.31: Garnet Kemsley, recital—"Telephone Troubles"; "Simple and Pure."
9.40: National Broadcasting Orchestra—Intermezzo, "Bon Vivante" (Zamecnik); platoon patrol, "Ole South" (Zamecnik); plantation patrol, Julia Russell, soprano—"The Dove" (Landon Ronald); "Chanson de Florian" (Godard).
9.57: National Broadcasting Orchestra—"Dance of the Egyptian Maidens" (Shelley). Japanese intermezzo, "Fujii Ko" (Shelley).
10.5: Weather and news.
10.15: Newstead H. Rush, baritone—"The Sword of Ferrara" (Bullard); "Mending Roadways" (Costes).
10.22: National Broadcasting Orchestra—Selection, "The Pink Lady" (Cavalli).
10.30: "The Rex" Dance Band.
12.0: God Save the King.

40G

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

EARLY MORNING SESSION
7.30 and 8.30: As usual.

5CL
Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

AFTERNOON SESSION

12.0: A Selection for To-day's Races at Caulfield. 12.3: Probable Starters and Selections for To-day's Races at Cheltenham. 12.15: News. Weather. 12.45: Recordings. 1.15: Cheltenham. Riders and Positions for Pennington Hurdle Race. 1.30: Running Description of Pennington Hurdle Race. 1.55: Riders and positions for the Aownsend Gun Handicap. 2.0: Caulfield Race Results. 2.10: Running Description of Townsend Gun Handicap. 2.35: Riders and Positions for Municipal Handicap. 2.50: Running Description of Municipal Handicap. 3.0: Caulfield Race Results. 3.15: Elders and Positions for Kingston Steeplechase. 3.30: Running Description of Kingston Steeplechase. 3.55: Riders and Positions for Dale Welter. 4.0: Caulfield Race Results. 4.10: Running Description of Dale Welter. 4.35: Riders and Positions for Leaden Hall Handicap. 4.50: Running Description of Leaden Hall Handicap, by Mr. Arnold Treloar. 4.55: Resume of Caulfield and Cheltenham Race Results. 5.0: Close.

NIGHT SESSION
6.0: Resume of Caulfield and Cheltenham Race Results. 6.2: Birthday Greetings. 6.30: Dinner Session. 7.1: Senior Birthday League Greetings. Stock Exchange. 7.10: Rev. G. E. Hale, M.A. on "Broadcast Pronunciation." 7.25: Mrs. C. G. Riley on "Items of Interest." 7.40: 5CL's Sporting Service. Results of races at Caulfield and Cheltenham today. District Cricket Scores. Yachting, Rowing, Tennis, and Athletic Results.

NIGHT SESSIONS
8.0: Programme Review.
8.10: A Special Programme has been arranged.
10.20: Results of Races at Caulfield and Cheltenham To-day. Other Sporting Results.
11.30: Dance Recordings.
11.40: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION, 7.30 to 8.30: **MORNING SESSION**, 10.0 to 11.0; **MIDDAY SESSION**, 12.30 to 2.30; **THE RADIO MATINEE**, 3.0 to 5.0; **EARLY EVENING SESSION**, 5.45 to 7.57: See Friday.

EVENING SESSION—(Results of trotting meeting will be broadcast immediately received.) 8.0: Weather report. 8.2: Everson Banjo Troupe. 8.12: Description of motor cycle contest from Speedway. 8.22: Everson Banjo Troupe. 8.32: Description of motor cycle contest from Speedway. 8.42: Everson Banjo Troupe. 8.52: Description of motor cycle contest from Speedway. 9.0: Town Hall chimes. 9.1: Weather report. 9.2: Everson Banjo Troupe. 9.12: Description of motor cycle contest from Speedway. 9.22: Everson Banjo Troupe. 9.32: Description of motor cycle contest from Speedway. 9.42: Everson Banjo Troupe. 9.52: Motor cycle contest from Speedway. 10.0: Chimes. 10.1: Weather. 10.7: Temple Court Dance Band. 10.59: Weather report. 11.0: Close.

7ZL

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

11.30 a.m.: Recital. 11.34: Midlands weather forecast. 11.35: Recital. 11.55: Weather report. 12.0: Shipping information, mail notices; news; wives' guide. 12.8: Recital. 12.30: News; announcements. 12.40: Recital. 1.5: Railway auction sales. 1.10: Recital. 1.30: Close down. 2.45: Transmission from the North Hobart Oval, cricket match. A grade, Sandy Bay v. North West, described by Eric Jones. 4.50: All sporting results to hand. 5.0: Close down. 6.10: All sporting results. 6.25: Children's Corner, with "Uncle David." 7.10: Recorded music. 7.40: Roy Johnson will speak on "Manual Training." 7.50: James Counsel will speak on "Business Affairs." 8.0: Chimes. 8.1: Recital. 8.15: A request programme of popular records. 10.20: Close down.



FADA
Radio

(Imported.)

for unequalled perfection

Built in Fada Dynamic Speakers
Push-pull Power Amplifiers—
Radio Phonographic Combination.

All Electric Sets that leave nothing to be desired by lovers of radio. Before buying any set, call and listen-in to the full range of Fada models. Compare the Tone-Selectivity—Price-Quality.

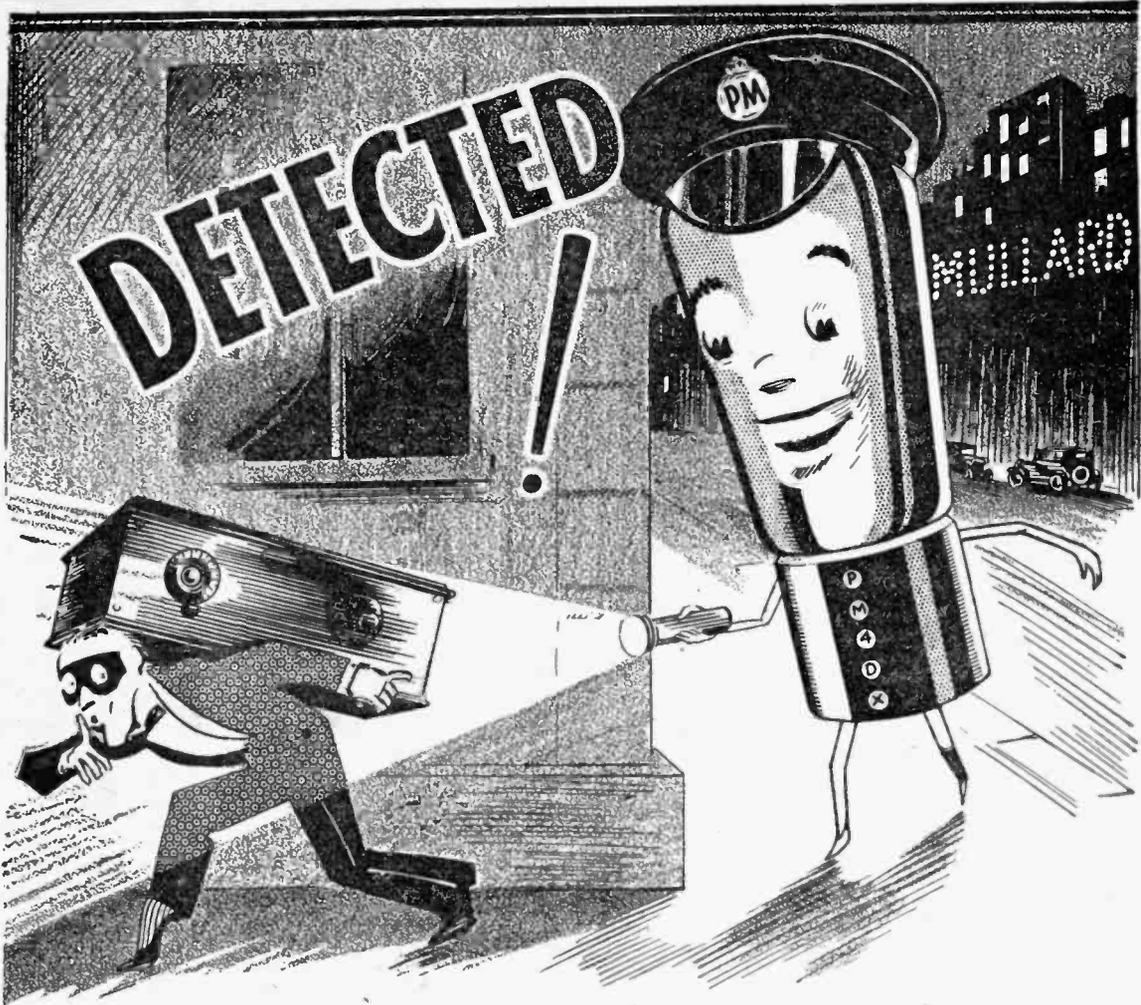
6-7-8-9 Valve Receivers

Special Plugs for Using Gramophone Pickups.

Open Fridays til 9 p.m.

Winkworth's
337 George Street
(Nearly op. Martin Place.)
SYDNEY.

And at 160-164 Parramatta Road, ANNANDALE.



THE MULLARD SPECIAL DETECTOR VALVES

Get Yours NOW and INCREASE the efficiency of your Receiver!

PM 2 DX
Two Volts.
Impedance 9,000 ohms.
Mutual Conductance 1.5
mA/- volts. Fil. Current
0.25 amp.

PM 4 DX
Four Volts.
Impedance 6,000 ohms.
Mutual Conductance 2.1
mA/- volts. Fil. Current
0.1 amp.

PM 6 D
Six Volts.
Impedance 9,000 ohms.
Mutual Conductance 2.0
mA/- volts. Fil. Current
0.1 amp.

ALL
13/6
EACH

Mullard

THE · MASTER · VALVE

ALL
13/6
EACH

Ask your dealer for Booklet describing Mullard Valves or Speakers, or write A. BEAL PRITCHETT (AUST.), LTD., 17 Parker Street, Sydney, or 150 Queen Street, Melbourne.

A12-29

Local Programmes, Sunday, November 17

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.
 10.1: Studio music.
 10.30: This Morning's News from the "Sunday News," "Sunday Times," and "Truth."
 British Official Wireless Press.
 10.45: Musical Items.
 11.0: FROM ST. ANDREW'S CATHEDRAL: Morning Service, conducted by the Very Rev. the Dean of Sydney. Sermon preached by the Most Rev. the Archbishop of Sydney.
 12.15: Studio Music.
 12.30: CLOSE.

AFTERNOON CONCERT—3 p.m. to 4.30 p.m.

- 3.0: FROM THE GORDON THEATRE: Organ Recital arranged by Idwal Jenkins—
 (a) "Bohemian Girl" Overture (Balfe).
 (b) "Pale Moon" (Knight-Logan).
 (c) "Love's Old Sweet Song" (Molloy).
 (d) "Lost Chord" (Sullivan).
 3.15: FROM THE STUDIO: JOHN WARREN, Tenor—
 (a) "Serenata" (Toselli).
 (b) "My Desire" (Cadman).
 3.22: FROM THE GORDON THEATRE: Organ Recital arranged by Idwal Jenkins—
 (a) Selection from "Mignon" (Thomas).
 (b) "Nola" (Arndt).
 (c) "Serenade" (Schubert).
 (d) "Cavatina" (Roff).
 3.37: FROM THE STUDIO: C. R. HALL will tell of "Riding the Flood."
 3.47: EVA NEWBURY, Contralto—
 (a) "Beyond the Dawn" (Sanderson).
 (b) "Tired Hands" (Sanderson).
 3.52: FROM THE GORDON THEATRE: Organ Recital arranged by Idwal Jenkins—
 (a) Selection from "Lilac Time" (Clay).

(b) "Wedding of the Painted Doll" (Brown).
 4.2: FROM THE STUDIO: JOHN WARREN, Tenor—
 (a) "Has Sorrow Thy Young Days Shaded" (Old Irish Traditional).
 (b) "Believe Me, If All Those Endearing Young Charms" (Old Irish Traditional).
 4.9: EVA NEWBURY, Contralto—
 (a) Only the River Running By" (Hopkins).
 (b) "The Glory of the Sea" (Sanderson).
 4.16: FROM THE GORDON THEATRE: Organ Recital arranged by Idwal Jenkins—
 (a) "Aria from Samson and Delila (Saint-Saens).
 (b) "Meditation from Thais" (Massenet).
 (c) "Three Dances from Henry XIII." (German).
 (d) "Prelude by Rachmaninoff—C Sharp Minor."

- 4.30: CLOSE.
EVENING PROGRAMME—6 to 10.30 p.m.
 6.0: A CELEBRITY RECITAL OF GRAND OPERA—
 "TRAVIATA."
 6.40: SIR HENRY BRADDOCK will speak on "THE WOOL INDUSTRY."
 7.0: CONTINUATION OF "TRAVIATA," by MADAME EVELYN GRIEG.
 8.0: HORACE SHELDON AND HIS CAPITOLIANS.
 10.0: MEDITATION MUSIC.
 10.30: CLOSE. NATIONAL ANTHEM.

2BL

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

- MIDDAY SESSION—10 55 a.m. to 3 p.m.**
 10.55: Announcements.
 11.0: FROM THE SYDNEY UNITARIAN CHURCH—Morning Service, conducted by Rev. Albert Thornhill, M.A. Organ Voluntary, Mr. S. V. CLUTSAM. Hymn 217, "What is Religion?" Collect and Lord's Prayer. Solo, "How Lovely are Thy Dwellings," MISS GRACE CAMPBELL. Lesson: Epistle of James 1. Solo: "Incline Thine Ear" (Himmel), Mr. B. MADDOCKS.
 Prayer.
 Announcements.
 Hymn 223: "Sons of Freedom Keep Ye Moving."
 Sermon: "The Proof of Religion."
 Offertory.
 Hymn 147: "Hark, Through the Waking Earth."
 Benediction.
 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: Austradio Musical Reproduction.
 3.0: Close Down.

- LATE AFTERNOON—4.30 to 6.0 p.m.**
 4.30: Gems from "The Great Masters."
 4.45: STANLEY CLARKSON, Basso—
 (a) "Lead, Kindly Light" (Barnard).
 (b) "The Watchman" (Squire).
 4.52: Music of Scandinavia.
 5.10: C. N. BAEYERTZ will continue his series, "Philosophic Thought from Bacon to Bergson."
 5.30: A MOMENT WITH SCHUBERT.
 5.42: STANLEY CLARKSON, Basso—
 (a) "Traveller's Joy" (Brahe).
 (b) "Sea Fever" (Ireland).
 5.49: WITH THE MODERNS.
EVENING SESSION—6.0 to 10.0 p.m.
 6.0: For Children in Hospital—Session conducted by Uncle Steve, Aunt Goodie, and Cousin Marjorie.
 6.50: Organ Music.
 7.0: FROM THE PRESBYTERIAN CHURCH, STRATHFIELD—Evening Service, conducted by Rev. V. C. Bell. Organ: Mr. YATMAN. Sanctus. Invocation. Hymn. Scripture. Solo: Mr. R. FINCHAM.

Hymn.
 Scripture.
 Hymn.
 Prayer.
 Announcements.
 Anthem.
 Hymn.
 Sermon: REV. V. C. BELL.
 Hymn.
 Benediction.

- 8.30: FROM THE STUDIO—Weather Information for the Man on the Land.
 8.32: OUR PROGRAMME TO-NIGHT IS BEING RELAYED BY SAR MELBOURNE. ALLEN McCRISTAL, Pianist—
 (a) "Tango in D Major" (Albinez).
 (b) "Berceuse" (Chopin).
 (c) "Impromptu F Sharp Major" (Chopin).
 8.46: SONG CYCLE: "A PAGODA OF FLOWERS" (Amy Woodforde Finden). Director: G. Vein Barnett. Artists:
 Bertha Waters (Soprano). Amy Ostinga (Contralto). Peter Sutherland (Basso). Lance Jeffree (Tenor).
 9.6: HUGH McLEAN, Violinist—
 "Finale from Concerto" (Vieuxtemps).
 9.13: PETER SUTHERLAND, Basso—
 (a) "Shepherd, See Thy Horse's Foaming Mane" (Korbay).
 (b) "O Farnouth is a Fine Town" (Landon Ronald).
 9.20: BERTHA WATERS, Soprano—
 (a) "Wiata Poi" (Hill).
 (b) "Milfanwy" (Forster).
 9.27: Late Weather Forecast.
 9.30: ALLEN McCRISTAL, Pianist—
 (a) "Scherzino" (Schumann).
 (b) "Prelude G Major" (Rachmaninoff).
 (c) "Caprice Espagnol" (Moszkowski).
 9.42: AMY OSTINGA, Contralto—
 (a) "It Was a Dream" (Cowen).
 (b) "The Willow Song" (Sullivan).
 9.49: HUGH McLEAN, Violinist—
 "Variations" (Paganini-Kreisler).
 9.56: LANCE JEFFREE, Tenor—
 "Onaway, Awake" (Coleridge Taylor).
 10.0: NATIONAL ANTHEM. CLOSE.

2GB

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

- 9.0: Address by Miss Mary Rivett, "Open Secrets."
 9.30: Address by Mr. Victor E. Cromer, "Emergent Evolution."
 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.
 3.0: Musical session.
 5.30: Children's session, by Uncle George.
 7.0: Lecture from St. Alban's Church.
 7.35: Lecture from Adyar House.
 8.15: Sacred concert from Adyar House, by courtesy of Messrs. Suttons, Ltd.; Miss Ruth Pearce Jones pianiste.
 8.23: Miss Beatrice Kendrick, contralto.
 8.30: Mr. Cecil Chaseling, baritone.
 8.37: Mr. Gregory Valentine, violinist.
 8.45: Miss Elsie Peerless, soprano.
 8.52: Miss Ruth Pearce Jones, pianiste.
 9.0: Weather report.
 9.1: Miss Beatrice Kendrick, contralto.
 9.8: Mr. Cecil Chaseling, baritone.
 9.15: Mr. Gregory Valentine, violinist.
 9.23: Miss Elsie Peerless, soprano.
 9.30: Address by Miss Mary Rivett, "Spiritual Daring."
 9.45: Close down.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 267 Metres).

- 10.30 a.m.: Music and request numbers.
 1.0 p.m.: Close.
 5.30: Children's Hour, conducted by Uncle Jack.
 6.30: Close.
 7.0: Musical programme.
 10.30: Close.

(2UE On Page 52)

CRYSTAL CLEAR

For Absolute Fidelity and Purity of Tone the Crystal Set still reigns supreme, giving Maximum Quality at Minimum Cost.

13/6 WILL BUY THE PARTS AND DIAGRAM FOR HOME CONSTRUCTION, OR 19/6 FOR THE SET BUILT AND TESTED.

IN DISTRICTS WHERE INTER-FERENCE IS EXPERIENCED OUR

SUPER SELECTIVE CRYSTAL SET

WILL FILL THE BILL.
 BUILT AND TESTED,

29/6

Hundreds of these Sets are now in use. Join the Throng of Satisfied Listeners.

RADIO CHAIN STORES

29 Royal Arcade, Sydney.

Interstate Programmes, Sun., Nov. 17

3LO

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

MORNING SESSION

10.0: Time. 10.1: Music. 10.20: Express train information; British Official Wireless news; Items of interest. 10.30: Bells of St. Paul's Cathedral. 10.45: "Australdo" musical reproduction. 10.55: Morning service from Wesley Church, Lonsdale Street, Melbourne; preacher, Rev. Dr. Hoban. 12.30: Close.

AFTERNOON SESSION

3.0: Pleasant Sunday Afternoon from Wesley Church, Central Mission, conducted by Rev. J. H. Cain; speaker, Dr. J. Dale, health officer; subject, "Health Week." The Stonnington Male Quartette

THE CHILDREN'S CORNER

6.0: "Brother Bill"; "Bobby Bluegum."

EVENING SESSION

7.0: Arved Norit, violin, and Vassili Ister, piano, "Sonata in A Major," by Cesar Franck, first and second movements. 7.15: "The Beauty Spots of Australia," by Mr. W. T. McConnell. 7.27: Arved Norit, violin, "Valse" (Schubert), (Darwin). 7.25: "Prevention is Better Than Cure," by Dr. Stanley Argyle, M.L.A. 7.45: Arved Norit, violin, and Vassili Ister, piano, third and fourth movements of "Sonata in A Major," by Cesar Franck.

NIGHT SESSION

8.0: Prahran City Band (conductor, Percy Jones), march "Heroes All," Intermezzo "Evening Bells." 8.3: The Harmonists Male Quartette, "At Dawning" (Cadmus); "Oh Who Will O'er the Downs So Free?"

8.15: Pietro Sarcoll, violin, "Stellienne and Rigaudon" (Grancœur-Kreisler), violin solo from "Le Luthier de Cremona" (Hubay), andante from "Concerto" (Mendelssohn), "Tambourin Chinois" (Kreisler).

8.30: Hořace White, tenor, "The Sun God" (János).

8.33: James Fraser, baritone, and Tom Masters, tenor, duet, "I Arise from Dreams of Thee" (Yates).

8.37: Prahran City Band, waltz, "Wildflower."

8.45: One hour with the Masters, arranged by Professor Bernard Heinze. Mary Hotham, mezzo-soprano, "Shadows" (Schubert), "Mine" (Schubert), "The Rossignol" String Quartette, "Quartet in A Minor," Op. 29 (Schubert), Allegro ma non troppo, Andante, Menuetto-Allegretto, Allegro-Moderato: Victoria Wilson, soprano, "Mignon's Song" (Liszt) David Sisserman, cello, "Vocalist" (Rachmaninoff); "Unaccompanied Suite for Cello, in G Minor" (Bach). Mary Hotham, mezzo-soprano, "Sea Calm" (Schubert), "Jealousy" (Schubert). Eleanore Clapham, piano, "Etude" (Scriabine), "Gnomes Reigen" (Liszt). Accompanists, Agnes Scott.

9.48: Victoria Wilson, soprano, "Solweig's Song." "A Lovely Evening in Summer Twas" (Grieg).

9.52: Prahran City Band, extra-act, "Chanson Triste."

9.57: The Harmonists Male Quartette; Frank Nicholson, bass, "The Windmill" (Nelson); quartette, "Eileen Alannah."

10.3: Eleanore Clapham, piano, Ten Minutes with Modern Composers.

10.13: Prahran City Band, march, "Murecaul."

10.20: News; weather.

10.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

11.0: Service from Cairns Memorial Church, East Melbourne. Sermon, Rev. F. A. Hagenaue, M.A. Subject, "Armistice Day." Anthem, "Hark, Hark, My Soul" (Shelley). Soloists, Miss Louise Thornton and Mrs. Abery.

MIDDAY SESSION

12.30: A Studio programme of specially selected reproduced music. 2.0: Frank Lanterman at the Wurliizer, with assisting artists. 3.0: Close down.

AFTERNOON SESSION

4.30: Symphony No. 8 in E Minor (Schubert), Queensland Orchestra. 4.55: "Elle re Croyait Pas" (Thomas); "Adeleu, Mignone" (Thomas); Mario Chamalee, tenor. 5.2: Nocturne in E Flat (Chopin-Sarasate); prize song (Wagner-Wilhelm); Albert Spalding, violin. 5.10: "Would God I were the Tender Apple Blossom" (Old Irish); "Snowy Breasted Pearl" (Old Irish); Elisabeth Rehters, soprano. 5.16: "Silver Cascade"; Valse, "La Plus Que Linte" (Debussy); Walter Gieseking, piano. 5.25: The Week's Good Cause—among the Children of the Lovely Bush, Rev. T. Campbell. 5.41: "Roman Carnival" overture, Minneapolis Orchestra, conducted by Henri Verbruggen. 5.49: "La Paloma" (Fradler); "Come Back to Sorrento" (De Curtis); Giuseppe Danise, baritone. 5.57: "Rigoletto Paraphrase" (Verdi-Liszt); "Rondo Capriccioso" (Mendelssohn); Leopold Godowsky. 6.5: "Festival Te Deum in E Flat" (Buck), Mixed Voices with Orchestra. 5.9: "March Slave" (Tschakowsky), New York Philharmonic Orchestra. 6.17: A special recital of request numbers. 6.47: St. Paul's Cathedral bells.

EVENING SESSION

7.0: Service from St. Paul's Cathedral. Preacher, Canon Baghill. 8.25: Anthem, "Lead, Kindly Light" (Stainer).

NIGHT SESSION

8.30: Transmission relayed from 2BL; song cycles directed by G. Vern Barnett.

9.5: Weather.

10.0: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

MORNING SESSION

11.0: The complete morning service from St. Stephen's Roman Catholic Cathedral will be relayed. 12.0 (noon): Conclusion.

AFTERNOON SESSION

3.15: The band concert provided in the Brisbane Botanic Gardens will be relayed. 4.3: Close.

EARLY EVENING SESSION

6.0: An hour for little listeners

NIGHT SESSION

7.30: The complete evening service from St. Stephen's Roman Catholic Cathedral will be relayed. 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., 114 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION

10.45: Capillon of Bells from the Adelaide Town Hall. 11.0: Service from Pirie Street Methodist Church. Minister, Rev. J. G. Jenkins. Organist, Mr. Harold Parsons. 12.10: News. 12.15: Close.

AFTERNOON SESSION

3.0: A Pleasant Sunday Afternoon Service from Maugham Methodist Church. 4.0: Close.

EVENING SESSION

6.0: Birthday Greetings. Correspondence, Songs, and Stories by "Big Brother." 6.15: "The Bird Lady." 6.45: Church Choir Numbers. 7.1: Senior Birthday League Greetings. 7.3: Service from Parkside Baptist Church. Minister, Rev. B. E. C. Tuck. Organist, Miss Gertrude Coudrey.

NIGHT SESSION

8.20: Announcements. 8.30: Holden's Silver Band, conducted by O. Sumner-Holten, "Silver Threads Among the Gold." "Won't You Buy My Pretty Flowers." (Refrains to be sung by James Riley, tenor.) 8.40: Frank Roberts, Wurliizer Organist. "Henry VIII Dances" (German). 8.47: Marcelle Berardi, Soprano. "Ay, Ay, Ay" (Felix). "Carcelera" (Chopin). 8.54: Holden's Silver Band "Reminiscences of the Plantation." 9.4: James Riley, Tenor (accompanied by Frank Roberts at the Wurliizer Organ). "Mother Machree." 9.8: Holden's Silver Band. "Horsalich püt mieh Vorlangon." 9.18: Marcelle Berardi, Soprano. "La Partida" (Alvarez). "Tu Habanera." 9.23: Frank Roberts, Wurliizer Organist. Selection, "Rio Rita" (Tierney). 9.32: Holden's Silver Band. "Rock of Ages." "Lead, Kindly Light."

9.42: C. Balcock, Flugel Horn. "Annie Laurie" (accompanied by Holden's Silver Band). 9.46: James Riley, Tenor. "The Trumpeter" (Dix). 9.49: Holden's Silver Band. "I Don't Want to Play in Your Yard." "Just Before the Battle, Mother." (Refrains to be sung by James Riley.) 9.55: News.

10.0: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

MORNING SESSION—10.40: Sporting results. 10.50: Sunday news service. 11.0: Church service, Salvation Army. 12.30: Musical reproduction. 1.0: Close.

AFTERNOON SESSION—3.0: Musical reproduction. 4.0: Talk by Basil Kirk, Magic Carpet series. 4.15: Musical reproduction. 4.55: This evening's programme. 5.0: Close.

EVENING SESSION—6.30: Children's session, conducted by Rev. E. Hogg. 7.15: Musical reproduction. 7.30: Service, Wesley Church. 8.45: Special musicale, arranged by Bert. Howell. 10.30: Close down.

RADIAR

During NOVEMBER and DECEMBER (only) our 3-Valve All-Electric Set will be reduced from £23/10/- to £20, and a Loud Speaker will also be given FREE as a Xmas offering.

Note the Only Address:—

The Radiar Wireless Co.,

Sixth Floor, 114 Castlereagh Street (near Market Street).

PHONE, M2687. RYDE 928 NIGHT.

MAGNA VOX



Magnavox Beverly

Volume Unconfined

Magnavox Dynamic Power Speakers differ from other speakers both in principle of operation and in construction.

They are made under exclusive Magnavox patents covering principles which are acknowledged by experts as the only type of speaker construction capable of accurate radio reproduction.

While these speakers are made primarily to provide more natural and enjoyable music or speech in the home, the volume is available from a low whisper to a volume far in excess of any normal home requirements—all without distortion.

Get all the volume needed for the largest interior with Magnavox Dynamic.

GET ALL YOUR SET CAN GIVE.

MAGNAVOX BEVERLY A.C. Cash Price, £11. Terms: Deposit £1, and 19 weekly payments of 11/-.

MAGNAVOX BELVEDERE. Cash Price, £11/10/-. Terms: Deposit £1 1/3/-, and 19 weekly payments of 11/6.

MAGNAVOX UNIT A.C., £7/15/-. Terms: Deposit 15/6, and 19 weekly payments of 7/9.

All types of Magnavox Speakers stocked by us. Demonstrations without obligation.

COUNTRY CLIENTS supplied with parts or loud speakers on terms. Deposit 25 per cent. of cash price, and the balance in five monthly payments.

Colville-Moore Wireless Supplies Ltd.,

4 and 10 ROWE STREET, SYDNEY.

Phones, B2261, B4594.

Local Programmes, Monday, November 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 Telegraph Pictorial."
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

- 10.30: Announcements.
10.52: A.B.C. Racing Observer.
10.45: HORACE WEBER 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 to 2.30 p.m.

- 1.0: FROM THE AEOLIAN HALL—Lunch Hour Music by the Sverjensky Instrumental Ensemble.
2.0: Stock Exchange, second call.
2.2: A Glance at the afternoon "Sun."
2.7: AN AFTERNOON STORY.
2.27: Announcements.
NOTE: Results of the Cricket Match.

Victoria v. England, played at Melbourne, will be transmitted at approximately 2.5.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: THE 2FC INSTRUMENTAL TRIO.
2.42: BETTY ARMSTRONG, Soprano—
(a) "Lovers in the Lane" (Lehmann).
(b) "I Pass by Your Window" (Brahe).
2.49: THE 2FC INSTRUMENTAL TRIO.
3.0: EDUCATIONAL SESSION, under the auspices of the Department of Public Instruction—
Mr. E. Breakwell, Supervisor of the School of Agriculture—"Some Curious Insects,"
Mr. H. F. Treherne, Supervisor of Music—"Brahms."

3.30: THE 2FC INSTRUMENTAL TRIO.

- 3.42: BETTY ARMSTRONG, Soprano—
(a) "I Heard You Singing" (Coates).
(b) "A Dream" (Bartlett).
3.49: THE 2FC INSTRUMENTAL TRIO.
4.0: ROSE ANTELL DE WARREN will speak on "Love Stories of Famous Women."
4.15: Results of the Cricket Match, Victoria v. England, played at Melbourne, will be given.

4.20: THE 2FC INSTRUMENTAL TRIO.

- 4.28: Stock Exchange, third call.
4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55

- 5.45: Children's "Good-night" Stories, told by the "Hello Man," assisted by Aunt Eily.
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." Truck Bookings.
7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30

- Now that the Wrestling Contests have ceased our Classic Programme on the Monday Night is faced through 2BL by Band Music and Entertainment of the Popular Variety. To-night Alexander Sverjensky is contributing to 2FC's Programme, and there are Violin Solos by Dagmar Thomson and Song Groups by Alfred Cunningham and Beatrice White.

8.0: ALFRED CUNNINGHAM, Baritone—

- (a) "When Bright Eyes Glance" (Hedgecock), Orchestral Accompaniment.
(b) "Tally Ho" (Leon).

8.7: DAGMAR THOMPSON, Violin Solos—

- (a) "On Wings of Song" (Mendelssohn).
(b) "Variations" (Tartini-Kreisler).

8.15: THE NATIONAL BROADCASTING ORCHESTRA—

- (a) Overture, "Fingal's Cave" (Mendelssohn).
(b) Suite for Piano and Strings, "The Seasons" (Ames).

8.30: BEATRICE WHITE, Contralto—

- (a) "Beloved, it is Morn" (Hickey).
(b) "Mighty Lak a Rose" (Nevin).

8.37: ALEXANDER SVERJENSKY, Pianist—

- (a) "Romance" for Piano and Strings (Mozart).
(b) "Wandering" (Schubert-Godowski). Orchestral Accompaniment.

8.52: THE NATIONAL BROADCASTING ORCHESTRA—

- Selection, "A Waltz Dream" (Strauss).
9.5: THE COUNTRY MAN'S WEATHER SESSION—

- (a) New South Wales Forecasts.
(b) Interstate Weather Forecast.

9.6: STEELE RUDD will speak on "The Miserable Clerk."

9.21: ALFRED CUNNINGHAM, Baritone—

- (a) "She Alone Charmeth My Sadness" (Gounod), Orchestral Accompaniment.
(b) "Down Vauxhall Way" (Oliver).

9.28: ALEXANDER SVERJENSKY, Pianist—

- "Fantasie in F Minor" (Chopin).
9.40: THE NATIONAL BROADCASTING ORCHESTRA—

- (a) "5th Movement Symphony in E Minor" (Dvorak).
(b) "At the Summit of St. Bernard" (Lotler).

(c) "Pierrot and Pierrette" (Vescey).

9.55: BEATRICE WHITE, Contralto—

- (a) "Through You" (Forster).
(b) "Soul of Mine" (Hoolley).

10.2: DAGMAR THOMPSON, Violinist—

- (a) "Slavonic Dance" (Dvorak-Kreisler).
(b) "Menuet" (Porpora-Kreisler).

10.9: THE NATIONAL BROADCASTING ORCHESTRA—

- (a) "Bagelle" (Heimendahl).
(b) "Canzonetta" (Heimendahl).

- 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, 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 Telegraph Pictorial."

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 and Announcements.
12.2: LUNCH MUSIC.
1.0: Afternoon news from the "Sun."
1.5: Studio Music.

1.15: Women's Interest Talk—MATRON

- McMILLAN will continue her talk on "Plunket Mothercraft," and her subject this afternoon will be "A Study of the Toddlers."

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—W. HASELDINE will speak on "The Artistry of Leather Work."
2.45: STUDIO MUSIC.

3.0: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters, in dance music.

3.12: FROM THE STUDIO—MARJORIE PRITCHARD, Popular Vocalist—

- (a) "Carolina Moon" (Davis and Burke).
(b) "Building a Nest for Mary" (Greer).

3.19: CLIFF HANNEY, Violinist—

- (a) "Melodie" (Tschaiakowsky).
(b) "Hymn to the Sun" (Kreisler).

3.26: SONGS OF TO-DAY.

3.32: FROM THE ORIENTAL—Sydney Simpson's Syncopaters, in dance music.

3.45: FROM THE STUDIO—"BRINGA,"

- "With the Northern Aborigines Catching Alligators."
4.0: KATHLEEN ROE, Pianist—

- (a) "Snow is Dancing" (Debussy).
(b) "Menuet" (Debussy).
(c) "Jardin sous la Pluie" (Debussy).

4.7: MARJORIE PRITCHARD, Popular Vocalist—

- (a) "I'll Always be in Love with You" (Steph).
(b) "Dream Train" (Baskette).

4.14: CLIFF HANNEY, Violinist—

- (a) "Bolero" (Burlleigh).
(b) "Orientale" (Cesar-Cui).

4.21: FROM THE BALLROOM OF THE ORIENTAL—Sydney Simpson's Syncopaters, in Dance Music.

4.31: FROM THE STUDIO—MEMORY MELODIES.

4.45: The Trade Hour—Demonstration Music

- 5.45: Weather Information, Close Down.
6.15: DINNER HOUR—5.15 to 7.55 p.m.

6.45: THE BOYS' AERO CLUB, conducted by Mr. Norman Lyons.

7: Studio Music.

- 7.15: 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

- The innovation through 2BL Service on Monday night—a programme of band music—is finding universal favor. In addition we have popular songs, saxo-



ELECTROLYTIC CONDENSERS

2000
MFD.,
25/-



This is the Condenser that makes possible the wonderful "Stedipower" L.T. Unit. Smooths out ripple and hum from the mains and gives that smooth, unfluctuating current that ensures perfect reception on a silent background.

There are T.C.C. Condensers for every purpose, and there are none better anywhere.

Obtainable all Radio Dealers

phone solos, new comedy numbers, and our Weekly Sound Film Feature.

8.0: THE MARRICKVILLE SILVER BAND.

(a) "My Fortress" (Vanderkam).

(b) "The Old Rustic Bridge" (Arr. Hawkes)

8.15: NORMAN FRANCIS, Tenor.

8.22: 2BL'S WEEKLY SOUND FILM FEATURE.

8.32: FROM THE STUDIO—WILLIE SHINE

Comedian—

(a) "Taxes."

(b) "Foods of all Nations."

8.39: THE MARRICKVILLE SILVER BAND

(a) "Songs of Ireland" (Arr. Goldsmith).

(b) "Ida and Dot" (Lozey). Soloists, N. H. F. ...

8.52: GOODIE REEVE, in something different.

9.7: JOSEF KAARTINEN, Saxophone Solos,

(a) "La Cinquantaine" (Gabriel-Marla).

(b) "Sax-O-Ghost" (Josef Kaartinen).

9.16: INA VARINI, Popular Vocalist.

9.23: THE MARRICKVILLE SILVER BAND

"Army of Brave" (Arr. Marshall)

9.33: Weather Information for the Man on

the Land.

9.35: NORMAN FRANCIS, Tenor.

9.42: WILLIE SHINE, Comedian—

Sketch, "The Christening."

9.49: THE MARRICKVILLE SILVER BAND

(a) "Gems from Great Masters" (Arr. Slater).

(b) "Crowns of Victory" (Coles).

10.0: INA VARINI, Popular Vocalist.

10.7: JOSEF KAARTINEN, Saxophone

Solos—

(a) "Valse Lento" (Chopin—Arr. Kaartinen).

(b) "Russian Rag" (Cabb—Arr. Kaartinen)

10.14: THE MARRICKVILLE SILVER BAND

—Selected.

10.25: Late News from the "Sun."

Late Weather Forecast

10.30: NATIONAL ANTHEM. CLOSE.

2GB

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

10 a.m. to 11.30. 2.0 to 3.30. 5.15 to 7.45, as usual.

8.0: Miss Mary Neal, contralto.

8.7: Symphony Orchestra.

8.15: Mr. Lionel Lunt, baritone.

8.23: Violin solos.

8.30: Mr. Jack Win and Mr. Heath Burdock, humor.

8.35: Miss Elsie Brown, soprano.

8.45: Address.

8.0: Weather report.

8.1: Symphony Orchestra.

8.10: Miss Mary Neal, contralto.

8.20: Mr. Heath Burdock, Shakespearean recital.

8.30: Mr. Lionel Lunt, baritone.

8.40: Violin solos.

8.50: Miss Elsie Brown, soprano.

10.0: Instrumental music. 10.30: Close.

2UW

Radio Broadcasting Ltd., Paine's Building, Ash St., Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30 as usual.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack. 8.30: Close.

7.0: Request numbers.

7.45: Radio talk, by Mr. E. Homfray.

8.0: Light orchestral concert.

9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.

9.10: Music. 10.30: Close.

2KY

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

Morning and Children's sessions as usual.

EVENING SESSION.

7.0: Musical interlude.

7.15: Dance music.

7.30: A talk on Gardening, MR. G. L. GILL-LATLY.

7.45: Militant Women's Group.

8.0: Overture.

8.8: Tenor solos.

8.15: Dance music.

8.30: Request numbers.

8.45: Soprano solos, Miss Wright.

9.0: Novelty interludes.

9.10: Selection of latest Parlophone, Columbia, Regal, Brunswick, and Golden Tongue records. 10.0: Closing announcements.

2UE

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

EARLY MORNING SESSION, 7.15 to 8.30, as usual.



Extraordinary value at an ordinary price!



This is the famous "Ever-Ready" HEAVY DUTY 45 Volt H.T. "B" Battery. Specially constructed of highest quality materials throughout. Ideal for 3 and 4 valve sets. Offers economy unexcelled by any other make of battery of equal size and capacity, yet sells for only

20/-

The continued popularity of "Ever-Ready" Radio Batteries is proof sufficient of their worth.

The "Ever-Ready" line, notable for both its variety of types and the many famous "Ever-Ready" features, offers you a fine opportunity to economise on your radio battery budget.

Wire them in to-day! Stocked by most radio dealers.

Your copy of an interesting coloured "Ever-Ready" folder will be forwarded by return mail, on request. Write for it to-day!

N.S.W. Wholesale Distributors:
THE EVER-READY CO.
(Gt. Britain), LTD.,
163 PITT STREET, SYDNEY.



Local Programmes, Tuesday, November 19

2FC

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength, 431 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 "Daily Telegraph Pictorial."
 7.4: Austradio Musical Reproduction.
 7.45: Malls 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: HORACE WEBER 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 Lecture, by Carlton Fay.
 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.

NOTE: Race Results from Menangle will be transmitted as received.

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."
 2.7: POPULAR EDUCATION: Nature's Wonders—"Secrets of the Sea," by T. Iredale.
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: THE 2FC INSTRUMENTAL TRIO.
 2.42: ETHEL MULLER, Contralto—
 (a) "Soul of Mine" (Barns).
 (b) "When My Ships Come Sailing Home" (Dorel).
 2.45: THE 2FC INSTRUMENTAL TRIO.
 3.0: HILDA NELSON, Soprano—
 (a) "The Fuchsia Tree" (Quilter).
 (b) "Sun Flakes" (Phillips).
 3.7: THE 2FC INSTRUMENTAL TRIO.
 3.17: GERTRUDE MACK will speak on "Manila to Hongkong."
 3.32: THE 2FC INSTRUMENTAL TRIO.
 3.45: ETHEL MULLER, Contralto—
 (a) "A Tallman" (Barns).
 (b) "One Fleet ne Hour" (Lee).
 3.52: THE 2FC INSTRUMENTAL TRIO.
 4.2: HILDA NELSON, Soprano—
 (a) "Carol" (Freire).
 (b) "The Hills of Donegal" (Sanderson).
 4.9: 2FC INSTRUMENTAL TRIO.
 4.28: Stock Exchange, third call.
 4.30: CLOSE.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Children's "Good-night" 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 service from the "Sun." Truck bookings.
 7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.3 p.m.

- The State-wide Radio Dance Night on Tuesday through 2FC attracts many dancers, who perhaps might otherwise not have such a favorable opportunity of arranging home Parties. Through 2BL Service the Classic Programme arranged by the Rose Bay Music Club will please the artistic taste of Music Lovers.
- 8.0: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 8.12: CHARLES LAWRENCE, Entertainer—"A Melodrama" (Sydney).
 8.19: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 8.31: 2FC WEEKLY SOUND FILM FEATURE.
 8.38: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 8.50: NICHOLLS AND HIS STEEL GUITAR.
 8.57: THE COUNTRY MAN'S WEATHER SESSION—
 (a) New South Wales Forecasts.
 (b) Interstate Weather Synopsis.
 9.0: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 9.12: LOUISE HOMPFREY, Lady Baritone—
 (a) "Kling for a Day" (Florito).
 (b) "Dusky Stevedore" (Johnson).
 9.19: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 9.31: CHARLES LAWRENCE, Entertainer—"The Cruise" (MS.)
 9.38: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 9.50: NICHOLLS AND HIS STEEL GUITAR.
 9.57: THE AUSTRALIAN BROADCASTING DANCE ORCHESTRA.
 10.9: LOUISE HOMPFREY, Lady Baritone—
 (a) "Half Way to Heaven" (Robinson).
 (b) "Building a Nest for Mary" (Greer).
 (c) "Lady Divine" (Shilkret).
 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: Malls 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.
 10.2: News from the "Labor Daily."
 10.5: News from the "Daily Telegraph Pictorial."
 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: LUNCH MUSIC.
 1.0: Afternoon news from "The Sun."
 1.5: Studio Music.
 1.15: A Talk on "Electric Appliances," prepared by M. H. Ellis.
 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: FRED ARLINGTON-BURKE will speak on "Nature's Laws of Compensation." Second Series.
 2.45: RADIO RHYTHM.
 3.0: LAUREL MATHER, Popular Vocalist—
 (a) "Lady Divine" (Shilkret).
 (b) "Josie and Me" (O'Hagan).
 3.7: THE NEWEST DANCE MUSIC.
 3.17: DORA LINDSAYE, Scottish Comedienne—
 (a) "Fair Maid of Perth" (Lindsay).
 (b) "My Sweet Antonio" (Hyde).
 3.24: ARCHIE FOREST, Mouth Organ Solos
 (a) "That's My Weakness Now."
 (b) "Love's Old Sweet Song" (Molloy).
 (c) "Pickin' Cotton."
 3.31: SONGS OF TO-DAY.
 3.45: TOM GURR will talk on "The Maori as Warrior and Man."
 4.1: LAUREL MATHER, Popular Vocalist—
 (a) "My Melody" (Porter).
 (b) "That's You, Baby" (Gottler).
 4.7: MEMORY MELODIES.
 4.17: DORA LINDSAYE, Scottish Comedienne—
 "To-morrow Morning" (Lindsay).
 4.24: ARCHIE FOREST, Mouth Organ Solos
 (a) "Love Dreams."
 (b) "Melody in F" (Rubinstein).
 (c) "Liberty Bell March."
 4.31: 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.

- 6.15: DINNER MUSIC SESSION.
 6.45: THE GIRL GUIDES' CLUB, conducted by Miss Gwen Varley.
 7.5: Studio Music.
 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.

- Our classic programme to-night is from the Rose Bay Music Club. Lovers of good music will appreciate the delightful offering which the club has prepared for this evening.
- Through 2FC Service the State-wide Radio Dance Night will provide pleasant contrast for listeners to whom gay music and popular songs and stories appeal.
- 8.0: FROM THE ROSE BAY MUSIC CLUB, FRANK HUTCHENS and LINDLEY EVANS, Two Pianos—
 (a) "Prelude and Fugue in C Minor" (Bach-Bauer).
 (b) "Andante" (Sinding).
 (c) "Variations on a Theme by Beethoven" (Saint-Saens).
 MISS RENE MAXWELL, Soprano—
 (a) "Chanson Norwegienne" (Fourdrain).
 (b) "Nocturne" (Franck).
 (c) "Mandoline" (Debussy).
 8.55: FROM THE STUDIO—
 Announcements and Weather Information for the Man on the Land.
 V. C. BELL will speak on "The Man with the Liver."

PHOTO-ELECTRIC CELLS

Disposal Liquidators Stock

BRAND NEW STOCK STILL IN BOND.

A unique chance of obtaining the latest types of English (Osram) and Continental potassium "gas-filled" photo-electric cells UNDER COST PRICE.

Stock of cells as above recently landed; condition and quality guaranteed perfect; as used by leading manufacturers of Talkies and Television. Old retail prices: £5.

New special offer:

1 to 9, £2/17/6 each.
 9 to 29, £2/15/- each.
 30 to 99, £2/10/- each.

Immediate delivery, terms 5 per cent. cash, 30 days net.

Orders for 30 cells or more special discount on application.

KINEMA PRODUCTS LIMITED,

Watson House, 9 Bligh Street.

SYDNEY

9.15: FROM THE ROSE BAY MUSIC CLUB:
FRANK HUTCHENS and LINDLEY EVANS. Two Pieces—
(a) "Sous Bols" (Staub).
(b) "Romance" (Racan-aninoff).
(c) "Toccatà" (Widor-Phillip).
(d) "The Dream" (Arensky).
(e) "Blue Danube Waltz" (Strauss).
Paraphrase by Evler-Chasins.
RENE MAXWELL, Soprano—
(a) "I Heard a Piper Piping" (Bax).
(b) "Fairytale" (Stanford).
(c) "Johnnie" (Stanford).

10.10: FROM THE STUDIO—
AUSTRADIO MUSICAL REPRODUCTION.

10.25: Late News from the "Sun."
Late Weather Forecast.

10.30: NATIONAL ANTHEM. CLOSE.

2GB

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

10.0 a.m. to 11.30, 2.0 p.m. to 3.30, 5.15 to 7.45, as usual.
8.0: Miss Edna Lister, contralto.
8.7: Instrumental Trio.
8.15: Mr. Barend Harris, baritone.
8.22: Symphony Orchestra.
8.30: Mr. Jack Win and Mr. Heath Burdock, humor.
8.35: Miss Gladys Verona, soprano.
8.42: Band selections.
8.50: Miss Edna Lister, contralto.
9.0: Weather report.
9.3: Address.
9.15: Instrumental Trio.
9.25: Mr. Barend Harris, baritone.
9.35: Mr. Jack Win and Mr. Heath Burdock, humor.
9.40: Symphony Orchestra.
9.50: Miss Gladys Verona, soprano.
10.0: Instrumental music.
10.30: Close.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St.,
Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30 as usual.

EVENING SESSION.

5.30: Children's Hour, conducted by Uncle Jack.
6.30: Close.
7.0: Request numbers.
8.0: Song recital, by Peter Dawson.
9.0: Comments on Foreign Affairs, by Mr. J. M. Prentice.
9.10: Music.
10.30: Close.

2KY

Trades and Labor Council, Goulburn St., Sydney
(Wavelength, 290 Metres).

MORNING SESSION AND CHILDREN'S SESSION AS USUAL.

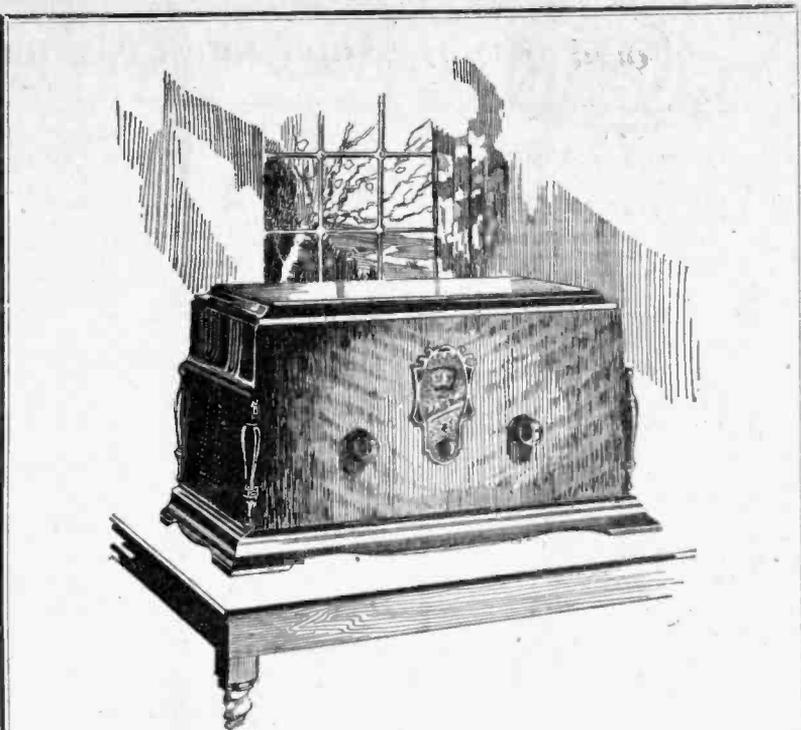
EVENING SESSION.

7.0: Musical Interlude.
7.15: SPORTING FEATURE. Turf topics; how they should run to-morrow. MR. GEO. A. DAVIS.
7.45: Request numbers.
8.0: Orchestral selections.
8.10: Women's Information Service. MRS. GRAY.
8.25: Baritone solos—MR. HIGGINS.
8.33: Pianoforte solos—MR. HANCOCK.
8.40: Music and request numbers, from the Studio; SPORTING FEATURE, from the ringside of McHugh's Leichhardt Stadium; results of early events, and full description of 15-round event.
8.50: 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, 10.0 to 12.0, AFTER-NOON SESSION, 1.0 to 2.30, EVENING SESSION, 6.30 to 10.15, as usual.



Colville-Moore AC Three Receiver

A Triumph in Tone and Mechanical Perfection

100 p.c. All-Electric

Right off your Power or Electric Light Socket

PLUG IN—TUNE IN.

No Aerial or other loose wires. Solves your Entertainment Problem

SOME POINTS OF COLVILLE-MOORE SUPERIORITY

Duoced Maple Cabinet, of unique and pleasing design. Power equipment and Valves totally Philips. Super selectivity obtained with special wave-trap. Tonal reproduction unequalled by any other Receiver. Twelve Months' Guarantee and Service. Imposing and binding Warranty issued with every Receiver.

Let us show you all our latest models at
No. 4 Rowe Street

AC THREE, Table Model, complete with Speaker. CASH PRICE, £29. Dep. £6. Monthly £2/2/9.

AC THREE, Console Model, complete with Speaker. CASH PRICE, £34. Dep. £7. Monthly £2/10/1.

AC SIX, Console Model, complete with Speaker. CASH PRICE, £56. Dep. £12. Monthly £4/1/5.

Demonstrations in Your Home Without Obligation

Colville-Moore Wireless Supplies Limited

'Phones, B2261, B4594. 4 and 10 Rowe Street, Sydney

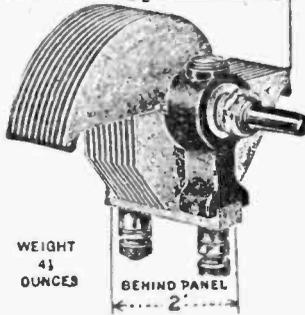


BRITISH MADE
VARIABLE
CONDENSER

Is the SMALLEST, LIGHTEST, MOST EFFICIENT Obtainable

SPAN FULLY OPEN

3 1/2"



WEIGHT
4 1/2
OUNCES

BEHIND PANEL
2"

Construction and Performance
SECOND TO NONE.

THE PRICE IS RIGHT.

.0005—9/6; .00035—8/6;
.00025—8/6.



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.

Interstate Programmes, Tues., Nov. 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
1.0 to 2.0: See Friday.

AFTERNOON SESSION

2.0: "Stories from the Operas," with musical illustrations, by Miss Lucy Ahon, B.A. 2.15: Description of international cricket match, England versus Victoria, at Melbourne Cricket Ground, by Mel Morris. 4.0: Musical interlude. 4.15: Description of cricket match resumed. 6.0: Stump scores.

THE CHILDREN'S CORNER

6.10: Birthday greetings from "Bobby Bluegum."
EVENING SESSION
6.35: Musical interlude. 6.40: Girl Guide doings. 6.55: Musical interlude. 7.0: Time. 7.1: Countryman's session. 7.25: For the man on the land. "Topping-off Table Poultry," by Mr. W. C. Rugg. 7.40: News. 7.45: "Public Finance in Australia," by Professor D. B. Copland, M.A., D.Sc. (under the auspices of the University Extension Board). 8.0: Time.

NIGHT SESSION

8.0: National Broadcasting Orchestra, overture. "Masaniello" (Auber). 8.8: Chrissie Moore, mezzo-soprano, "A Farewell" (Trehearne). "The Loreley" (Liszt). 8.15: Pierrot and Pierrette. Pierrot with his piano and Pierrette with her saxophone. 8.25: J. Harcourt Bailey and the Sundowner Male Quartette present "The Nonsensical Navvies," at the construction camp at Wiregrass Dam.

Choral Music.

8.45: Melbourne Philharmonic Society (conductor, Professor Bernard Heinze; pianist, Miss Isabe Adams), transmission from Australian Church, Russell Street, Melbourne. Cantata, "Blest Pair of Sirens" (Parry); part-song, "Ring Out, Wild Bells" (Percy Fletcher); "Hallelujah Chorus" from "Mount of Olives" (Beethoven).

Popular Music.

9.15: National Broadcasting Orchestra, a characteristic novelty, "In a Clock Store." 9.25: Chrissie Moore, mezzo-soprano, "Life" (Curran). "Thoughts Have Wings" (Lehmann). 9.32: Edouard Lambert violin. 9.40: Sundowners' Male Quartette, "Kentucky Babe." 9.44: J. Harcourt Bailey, entertainer, "Girls and Things." 9.47: Sundowners' Male Quartette, "Yankee Rose." 9.50: National Broadcasting Orchestra, "Four Indian Love Lyrics" (Finden). 10.0: Pierrot and Pierrette. Pierrot with his piano and Pierrette with her saxophone. 10.10: National Broadcasting Orchestra, selection from "The Fortune Teller" (Berbert).

News Session

10.20: News: weather.
10.30: Paul Jeacle and His Band, latest dance numbers.
11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 484 Metres).

MORNING SESSION

8.15 to 11.0: See Friday.

MIDDAY SESSION

12.0: Description of cricket match, England v. Victoria, at the M.C.C. by Eric Welch. 1.30: Luncheon music. 2.0: Chimes.

AFTERNOON SESSION

2.1: Special Health Week address—Abdominal development and health, Mr. Aaron Beattie. 2.15: Musical interlude. 2.20: "Useful Crafts at Home—Making Christmas presents, Mrs. Henrietta Walker. 2.35: Musical interlude. 2.40: The Latest Fashions—Mamade La Mode. 2.55: Musical interlude. Popular matinee. 3.0: Paul Jeacle and his band—"My Troubles are Over" (Monaco). "Rhythm King" (Hoover). 3.6: Alf Lawrence, entertainer—"The Evolution of the Popular Song. 3.16: Paul Jeacle, saxophone—Selected. 3.20: Carmen Mascagni, soprano—"A Song Remembered" (Coates). "Wondering Why" (Coningsby Clarke). 3.27: Paul Jeacle and his band—"Steamboat" (Robinson). "Pagan Love" (Brown). 3.33: Donald Gordon, tenor—"Arise, O' Sun" (Day). "A Dream" (Bartlett). "I Love You More" (Dorothy Lee). 3.40: Bob Adams, trumpet—Selected. 3.46: Alf Lawrence, entertainer—Selected. 3.53: Paul Jeacle and his band—"Bolshievik" (Jaffe). "Speech" (Clare). 4.4: Carmen Mascagni, soprano—"Waltz Song," from "Tom Jones" (German). "I had a Garden" (Royce). 4.11: Bruce Wite, piano—Selected. 4.15: Donald Gordon, tenor—"The Trumpeter" (Dix). "Youth" (Allitsen). 4.22: Paul Jeacle and his band—"It don't mean a thing without you" (Davis). "It's a Wonderful World, after all" (4.15). Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air to-night? 7.32: Sporting results. 7.35: Latest musical releases. 7.50: Special Health Week address, Sir James Barrett. 8.0: G.P.O. chimes.

NIGHT SESSION

8.1: Wild Life Afloat—Captain Donald MacLean. Dancing and Popular Music. 8.15: Paul Jeacle and his band—"Just Across the Street" (Newmap). "Rhythm King" (Hoover). 8.22: Jovan Massonoff, tenor—"Memory of a Song" (Nicholls). Sybil Graham, soprano—"Dream

of Delight" (Nicholls). Sybil Graham and Jovan Massonoff—Duet, "O Sole Mio."

8.32: Bruce Wite, piano—Selected. 8.36: Iza Crossley, entertainer—Impersonations: "Holding Hands" (underneath the Stars). 8.44: Paul Jeacle and his band—"I Hope I don't meet Molly" (Woods). "Shout Hallelujah" (Dixon). "The Little Green Valley" (Robinson). A Dramatic Interlude. 8.52: One-act play—"The Widower" (Lawrence Clarke). Produced by Terence Crisp. Characters: Joseph Yule, W. H. Chandler; Mary Oldrieve, Betty Rae; Edward Trefusis, Terence Crisp, a policeman, Jack Wilshire. Scene: The living-room of a cottage in Kent; on a sofa near the window lies the body of a little child—a girl of five—covered with a white counterpane.

More Dancing and Popular Music. 9.7: Paul Jeacle and his band—"Lila" (Gottler). "Slow Gee Gee" (Bee). "Sustanna" (Williams) 9.16: Sybil Graham, soprano—"Sleepy Old Street, Sleepy Old Town" (Mary Nightingale). "When I say Good-bye to you" (Da Costa). Jovan Massonoff, tenor—"Home O' Mine" (Murdoch). "Mother of my Dreams" (Norman). Sybil Graham and Jovan Massonoff—"Misereere" from "Il Traviatore" (Verdi). 9.26: The Blue Bird Bros.—In comedy and imitations.

9.38: Claude Jeacle, baritone—Selected. 9.40: Iza Crossley, entertainer—"My Mother's Eyes" (Moya Crossley). "Obstination" (Fontenaille). 9.48: Charles Corum, bass saxophone—Selected. 9.54: Paul Jeacle and his band—"I'm Coming, Virginia" (Heywood). "The Pump Song" (Lerner). "Rubinesque" (Rubenstein). 10.0: Weather and news. 10.10: Paul Jeacle and his band—"Rhapsodie Russe" "Dance of the Paper Dolls" (Tucker). "My Troubles are Over" (Monaco). 10.20: The Blue Bird Bros.—In comedy and imitations. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

For day sessions, see Friday.

NIGHT SESSION

8.0: Mrs. Matthew's Cadenza Plectral Club and Banjo Band, march, "Repass Band" (Sweeney). 8.4: C. V. Woodland (baritone). "The Erl King" (Schubert). "The Wealth" (Schubert). 8.15: Claire Matthews and Elspeth Capper, violin duets. "Minuet" (Goddard). "Serenade" (Goddard). 8.25: Sid Smith, with the banjo band, popular numbers. 8.32: Ruth Trezurtha (elocutionist), "The March" (Squire).

8.37: The Cadenza Plectral Club, "Sullivan's Operatic Gems" (arr. Toehahn). 8.48: Kevie McAllister and Co., a snort sketch. 9.0: Metropolitan weather forecast.

9.1: Cadenza Quartette, "Neapolitan Nights" (Zamecnik). 9.6: C. V. Woodland (baritone), "Song of the Flea" (Moussorsky). "To the Forest" (Tchaikowsky). "Bells of the Sea" (Solman).

9.18: Hughie O'Donnell (tenor banjoist), "The Volunteers" (Bacon). 9.23: Elspeth Capper (soprano), selected.

9.26: Mrs. Matthews' Banjo Band, "Whistling Rufus" (Mills), popular numbers. 9.40: Ruth Trezurtha (elocutionist), "He Fell Among Thieves" (Newbolt).

9.44: Cadenza Plectral Club, "My Heart at Thy Sweet Voice" (Saint-Saens). 9.50: Leo Crump, with the Banjo Band, "Medley of Airs" (Warren). 10.0: News: weather.

5CL

Central Broadcasters, Ltd., 114 Hindmarsh Square, Adelaide (Wavelength, 400 Metres).

MORNING SESSION

During the day descriptions of the Inter-State cricket, South Australia v. New South Wales, will be given. 11.15 to 2.0: See Friday.

AFTERNOON SESSION

3.0 to 4.30: See Friday.

EVENING SESSION

6.0 to 7.0: See Friday.

NIGHT SESSION

8.10: Announcements. 8.10: A presentation of the opera, "The Bohemian Girl" in which the following artist will take part, Marcelle Berardi, Dino Pellaroli, Gwen Collett, Fred Guster, Bert Woolley: explanatory remarks by Besse Francis.

9.0: Weather, etc. 9.2: Overseas grain report. 9.5: Continuation of the opera, "The Bohemian Girl."

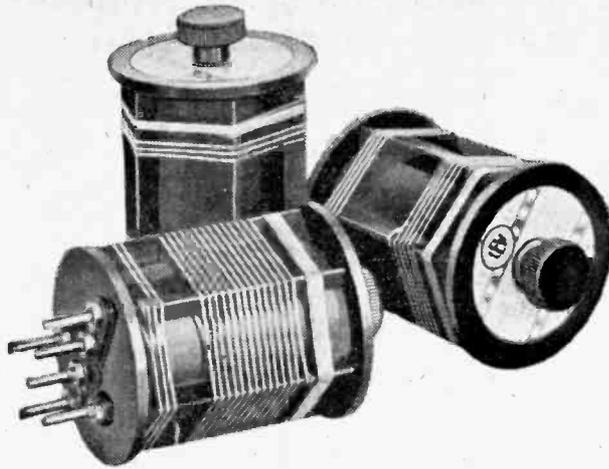
10.15: News: weather: sporting, including cricket scores. 10.30: Dance music. 11.0: Close.

6WF

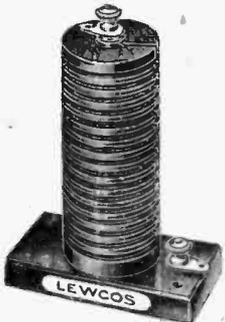
Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION. MORNING SESSION. MIDDAY SESSION. THE RADIO MATINEE. EARLY. See Friday.

EVENING SESSION—8.0: Weather. 8.2: Ambassador's Unit Orchestra. 8.7: Les Waldron at the Wurilizer organ. 8.15: Maylands Orpheus Society. 9.0: Weather. 9.2: Announcements. 9.5: Stage presentation from Ambassador's Theatre. 9.30: Maylands Orpheus Society. 10.0: Weather. 10.5: Temple Court Dance Band. 10.58: Weather. 11.0: Close.



AGAIN! THESE COILS WERE SELECTED



"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.

Once again "LEWCOS" Short Wave Coils were selected for the All Wave Receiver, fully described in this issue of "Wireless Weekly." "LEWCOS" coils embody every feature demanded by the set builder to-day. They will be found ideal for the "MODERN TWO" Receiver. The secondary is wound with SILK INSULATED COPPER STRIP, ensuring rigidity, besides lowest possible losses and ultra fine tuning. The ribbed construction of the former is of approved low loss design. "LEWCOS" coils are solidly constructed, so that they may be handled roughly without risk of damaging.

"LEWCOS" SHORT WAVE COILS

A.M.S. 2, 15 to 25 metres	15/-
A.M.S. 4, 20 to 45 metres	15/-
A.M.S. 9, 40 to 90 metres	15/-
A.M.S. 25, 90 to 250 metres	15/-

Also,

"Lewcos" AM5 Coil for Broadcast Wave Lengths.
PRICE, 17/6.



"LEWCOS" FIXED POTENTIOMETER.

This latest addition to the famous "Lewcos" range of radio products has been specially designed to control reaction of broadcast receivers. With this potentiometer there is no violent breaking into oscillation. Reception is smoothed out and improved.

PRICE, 9/6.



BRITISH AND BETTER

Obtainable at all good Radio Dealers

THE LIVERPOOL ELECTRIC CABLE CO., LTD.,

In conjunction with their Associated Company

LONDON ELECTRIC WIRE CO. AND SMITHS LTD.,

LEWCOS HOUSE, 233 CLARENCE STREET, SYDNEY

Telephones: M3821, MA1966

Local Programmes, Wednesday, November 20

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 Telegraph Pictorial."
 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: HORACE WEBER 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: C. W. MANN will speak on "Do You Know Your Child—The Adolescent."
 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.

NOTE:—Race results from Ascot will be transmitted as received.

- 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."
 2.7: STUDIO MUSIC.
 2.27: Announcements.

- THE RADIO MATINEE—2.30 to 4.45 p.m.**
 2.30: RADIO RHYTHM.
 2.42: WARD LEOPOLD, the Strumming Serenader—

- (a) "I'll Always be Mother's Boy" (Stept).
 (b) "Dream Canoe" (Leopold).
 2.49: MODERN MUSIC.
 3.0: HILDA GRACE, Novelty Pianist—
 (a) "The Man I Love" (Jershwin).
 (b) "A Sylvan Glade" (Knight Song).
 3.7: LEN MAURICE, Popular Vocalist—
 (a) "When My Dreams Come True" (Berlin).
 (b) "Mean to Me" (Turk).
 (c) "Here We Are" (Kahn).

- 3.15: THE NEWEST DANCE NUMBERS.

- 3.30: WARD LEOPOLD, the Strumming Serenader—

- (a) "Sweetheart of All My Dreams" (Fitch).
 (b) "Junior" (Donaldson).
 3.37: MEMORY MELODIES.

- 3.47: HILDA GRACE, Novelty Pianist—
 (a) "In the Spotlight" (Jarnagin).
 (b) "Miss Personality" (Lapman).

- 3.54: NEW DANCE MUSIC.

- 4.4: LEN MAURICE, Popular Vocalist—
 (a) "Where the Bab, Bab, Babbling Brook" (Pease).
 (b) "I Want to Meander in the Meadow" (Tobias).
 (c) "Jossie and Me" (O'Hagan).

- 4.11: POPULAR MUSIC.

- 4.28: Stock Exchange, third call.

- 4.30: RADIO RHYTHM.

- 4.45: CLOSE.

- EARLY EVENING SESSION—5.45 to 7.55**

- 5.45: Children's Good-night Stories," told by the "Hello Man," assisted by Uncle Ted and "Sandy."
 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 "Sun." Truck Bookings.

- 7.58: To-night's Programme.

- THE EVENING PRESENTATION—8 to 11.30**

Our offering to 2FC Listeners to-night is the complete relay from 3LO, Melbourne, of the Revue by the Humphrey Bishop Company. Through 2BL Service the Overture and Stage Presentation from the State Theatre. The Wednesday night feature—a Radio Play by Brunton Gibb. We would draw the attention of listeners to the fact that as the relay from 3LO will not permit of an interval the usual Humorous Stories

in Dialect by C. N. Baeyertz will be given to-night through 2BL Service.

- 8.0: RELAY FROM 3LO, MELBOURNE—REVUE, BY THE HUMPHREY BISHOP COMPANY.

- 10.15: FROM THE STUDIO—Announcements.

- Late Official Weather Forecast.

- 10.20: FROM THE NIEUW HOLLAND—Dance Music, by Cec. Morrison's Band. Opportunity will be taken of describing the vessel between dance groups.

- 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: usic 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 Telegraph Pictorial."

- 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 and Announcements.

- 12.2: LUNCH MUSIC.

- 1.0: Afternoon News from the "Sun."

- 1.5: Studio Music.

- 1.15: Women's Interest Talk—GOODIE REEVE will talk on "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: DR. HAROLD NORRIE will speak on "Outstanding Personalities in Australian History," and his subject this afternoon will be "HAMILTON HOME."

- 2.45: SONGS OF TO-DAY.

- 3.0: EDWARD TRENTON, Violinist—

- (a) "Andante Religioso" (Thorne).
 (b) "Mazurka" (Chopin-Kreisler).

- 3.17: MURIEL SUTHERLAND, Mezzo—

- (a) "Beloved, Sleep" (Slater).
 (b) "Afterwards Love" (d'Hardelot).

- 3.24: MAY WILLIS, Pianist—

- (a) "To a Wild Rose" (Edward MacDowell).
 (b) "Will o' the Wisp" (Edward MacDowell).

- (c) "To a Water Lily" (Edward MacDowell).
 (d) "Of Br'er Rabbit" (Edward MacDowell).

- 3.31: NEW SONGS.

- 3.45: C. PRICE CONIGRAVE will speak on "Vlaming and Rottneft Island."

- 4.0: EDWARD TRENTON, Violinist—

- (a) "Canzonetta" (Tschalkowski).
 (b) "The Bee" (Schubert).

- 4.7: MURIEL SUTHERLAND, Mezzo—

- (a) "Rest Thee Sad Heart" (Del Reigo).
 (b) "When I Am" (Wright).

- 4.14: A STUDIO ITEM.

- 4.21: MAY WILLIS, Pianist—

- "Theme Variet" (Padrewski).
 4.28: 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.**

- 6.15: THE BOYS' RADIO CLUB, conducted by Mr. Norman Lyons.

- 7.5: GRAHAM KENT will talk on "Bridee."

- 7.20: 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—8.0 to 10.30**

The feature of 2BL's programme is the play by Brunton Gibb, the Overture and Presentation from the State Theatre will be broadcast, and there are song groups by Alexander Raff and Nora Hill.

Through 2FC Service we are relaying from

3LO Melbourne the complete programme by the Humphrey Bishop Company. At 10.30 Dance Music will be taken from the "Nieuw Holland" by Cec. Morrison's Dance Band. Listeners will also be entertained with a description of the Vessel.

- 8.0: FROM THE STATE THEATRE—Overture by Will Prior's Orchestra, with Price Dunlavy at the Grand Organ.

- 8.8: FROM THE STUDIO—CARLTON FAY, Pianist.

- 8.18: ALEXANDER RAFF, Bass-Baritone—

- (a) "The Ginchy Road" (Edward).
 (b) "The Song of the Clock" (Burchell).
 (c) "Gentlemen, the King" (Gleeson).

- 8.25: To-night, as our programme through 2FC Service is an uninterrupted relay from 3LO Melbourne, Mr. C. N. BAEYERTZ will continue his series of Dialect Stories through 2BL.

- 8.45: FROM THE STATE THEATRE—Stage Presentation.

- 9.0: FROM THE STUDIO—

- NORA HILL, Soprano—

- (a) "I Dreamt That I Dwelt," from "The Bohemian Girl" (Balfé).
 (b) "Ballatella," from "Pagliacci" (Leoncavallo).

- 9.7: CARLTON FAY, Pianist.

- 9.17: VINCENT ASPFY, Violinist—

- (a) "The Hunt" (Chiabrano).
 (b) "Serenade" (Lehar).

- 9.24: Weather Information for the Man on the Land.

- 9.26: BRUNTON GIBB, in a Sketch entitled "The Stepmother" (Milne).

- 9.56: ALEXANDER RAFF, Bass-Baritone—

- (a) "Tommy Lad" (Margetson).
 (b) "Harlequin" (Sanderson).
 (c) "Border Ballad" (Cowan).

- 10.1: VINCENT ASPFY, Violinist—

- (a) "Introduction and Tarantelle" (Sarasate).
 (b) "Pale Moon" (Logan-Kreisler).
 10.8: NORA HILL, Soprano—

- (a) "Thro' the Last Glimpse of Erin" (Moore).
 (b) "The Next Market Day" (Hughes).
 (c) "The Ballvure Ballad" (arr. Hughes).

- 10.15: MUSICAL ITEMS.

- 10.25: Late News from the "Sun"

- Late Weather Report.

- 10.30: NATIONAL ANTHEM. CLOSE.

2GB

Theosophical Broadcasting Station 21 High St., Sydney (Wavelength, 316 Metres).

- 10.0 a.m. to 11.30, 2.0 p.m. to 3.30, 5.15 to 7.45, as usual.

- 8.0: Miss Heather Kinnaird, contralto.

- 3.7: Symphony Orchestra.

- 8.15: Mr. Cecil Houghton, tenor.

- 8.22: Violin solos.

- 8.30: Mr. Jack Win and Mr. Heath Burdock, humor.

- 8.35: Miss Marjorie Cole, soprano.

- 8.43: Symphony Orchestra.

- 8.50: Miss Heather Kinnaird, contralto.

- 9.0: Weather report.

- 9.3: Address.

- 9.15: Violin solos.

- 9.25: Mr. Cecil Houghton, tenor.

- 9.35: Mr. Jack Win and Mr. Heath Burdock, humor.

- 9.40: Symphony Orchestra.

- 9.50: Miss Marjorie Cole, soprano.

- 10.10: Instrumental music. 10.30: Close.

2UW

Radio Broadcasting Station 143, Prince's Building, Ash St., Sydney (Wavelength, 267 Metres).

- MIDDAY SESSION.**

- 12.30 to 4.30, as usual.

- EVENING SESSION.**

- 5.30: Children's Hour, conducted by Uncle Jack.

- 6.30: Close.

- 7.0: Request numbers.

- 8.0: A Modernist Hour.

- 9.0: Comments on Foreign Affairs, by Mr J. M. Prentice.

- 9.10: Music. 10.20: Close.

2UE

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

- EARLY MORNING SESSION, 7.15 to 8.30,**

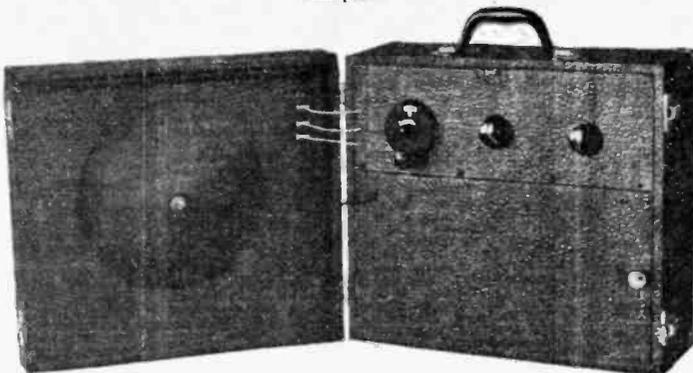
- MIDDAY SESSION, 10.0 to 12.0, EVENING SESSION, 6.30 to 10.15, as usual.**

Build the Wonderful Little Tom Thumb 3 Portable Set

Everything needed. Cabinet, Batteries, Valves, Speaker, etc.,

£7/15/-

Simply-explained Booklet how to build this set in 40 minutes, 1/- Free with parts.



BUILD LEVENSON'S ALL-ELECTRIC 3 RADIO.

THE WONDER OF THE AGE. Just Plug into Light or Power Socket. THAT'S ALL.

ALL PARTS COST £4 19 4
 VALVES £4 19 0
 A.B.C. PACK PARTS £3 7 0
 CABINETS TO SUIT £2 5 0

HOW TO BUILD THIS SET. ILLUSTRATED BOOKLET NOW READY, 1/- FREE WITH PARTS.

Famous Loud Speakers at Snap-quick Prices.
 Amplion A.R. 23 Loud Speaker, £9/9/- My price. £4/10/-

Amplion A.R. 88 Loud Speaker, 90/- My price just half now. 45/-

English Geophone Loud Speakers, £8/8/- Now 30/- Bakelite Flare.

American 6valve All Shielded Radio. The Famous "Day Fan." Chassis only. £20 agents' price. My Price, £10. Or, Ready Fitted with Best Quality Components, Speaker, etc. £23/10/-

6-Volt Accumulator, 90/ value. Now £2/15/- Hard Rubber Case. 4-volt. 50/ list price. Now 30/-

Just Landed—Germany's Best Cone Speaker. Beautifully-finished Wood and Silk Cabinet. Selected for recent World Flight. "Graf Zeppelin." £4/4/-

Renown Coil Kit, 10/6.
 Reinartz Coil, 4/9.
 De Jur Browning-Drake Coil Kit, 22/6.
 De Jur Inter-State 3-coil Tuner, 15/6.

B.T.H. BRITISH VALVES.
 UX Bases.
 13/6 and 22/6 everywhere. My Price, 6/6.
 2, 4, and 6 volt Series.

Like-a-Flash Superior UX Base Valves.
 UX 201A 6/6
 UX 199 8/6

Speed Tubes. America's Best. Just Arrived.
 UX 201A 7/6
 277 AC Det. 13/6
 236 A.C. Amp. 10/6
 280 1/2-wave Rect. 19/6
 200 AA Super Power Det. 16/6
 112A Power Amp. 12/6

LEVENSON'S LIKE-A-FLASH "A" BATTERY CHARGER.
 Adjustable to 2, 4, and 6 volt Accumulators, 6/-. Not a Trickle Charger.

By-pass Condensers, 1000-volt Test—
 1 mfd. 2/9
 2 mfd. 3/3
 4 mfd. 7/-
 Extra heavy duty ... 9/-

Levenson's Like-a-Flash A.B.C. Transformers, for all sets, 35/- Double chokes, to suit same heavy duty, 25/-
 50-henry Chokes, 8/6.
 Voltage Dividers, 7/6.
 A.B.C. Pack Housing Cans, 6/6.

COIL SHIELDS, 3/6 EACH.

WATES' 3-IN-1 AMP. VOLT-METERS, 11/6.

EVEN GREATER SUCCESS



BUILD LEVENSON'S "B" BATTERY ELIMINATORS. Any child could build. For sets up to 3 valves, everything needed, £2/8/6. For sets over 3 valves, £4/5/6. Charts 6d. Free with parts.

BUILD LEVENSON'S "A" BATTERY ACCUMULATOR CHARGER. So simple. Any child could build it in 15 minutes. Everything supplied, 50/- Vol. charge, 2, 4, or 6 volt accumulators. Not a trickle charger. Simple charts supplied with each kit.

7-way Battery Cable yd. 1/3
 U.Y. Sockets 1/8
 7-way Acid-proof Cables 3/6
 20ft. Speaker Cords 2/3
 10ft. Speaker Cords 1/9
 5ft. Speaker Cords 1/3

Lissen New Process "B" Batteries. Just Landed. 60 volts ... 13/6
 100 volts ... 22/6

Magnus Professional Head-sets, 4000 ohms, 35/. Now half-price, 17/6.

3-Gang Commercial Condensers, mfd. with Dial and Rheo., £4, now £1.

English Ball-bearing 0007 Condensers, single-hole mounts 5/8.

LIKE-A-FLASH
 45-volt Heavy Duty "B" Batteries, 25/ value, now 15/. Thousands sold, never a complaint. There's a Reason.

Diora Midget 3in. Vernier Dials, 3/. Alpha De Luxe Vernier Dials, 6/9
 Like-a-flash 4in. perfect action Vernier Dials, 5/6

Midget Coil Kits, for 5-valve sets, 15/, now 5/6.
 Pancake Coil Kits, of 3 coils, 3/.

De Jur Output Transformers, the best made, 30/.

LISSEN ENGLISH GOODS.
 R.F. Chokes, 6/9. Transformers, 12/6. Super Transformers, 24/. Grid Leaks, 1/. Gramophone Pick-Ups, 15/. Speaker Unit, 13/6. Reeds for Cone Speaker Building, 1/.

Lissen English Gramophone Pick-ups, 15/.
 De Jur Pick-up, £2/12/6.
 Tone Arm, 12/6 extra.
 Gradcon Pick-ups, 90/. A few left. To clear, 30/.

Grid Leaks, 1 up to 10 Megs., 1/3.
 Grid Condensers, 1/9.
 2in. Bakelite Dials, 1/.

Push-pull Switches, 1/-.
 Rheostats, 1/9.

R.U.F. Semi-fixed Crystal Detectors. Panel mount, 6/6.
 Baseboard mount, 4/6. Each one guaranteed.

Electron 100ft. Insulated Aerials, 2/.
 Morris Ball Aerials improves reception, eliminates static, 30/ each. Larger Type, £3.

English Reaction 0001 Condensers, single-hole mount, 5/6.

De Jur Switch Rheostats, 3/9.
 De Jur Filament Switches, 2/3.
 De Jur Illuminated Dials, 12/6.
 S.C.O. Transformers, 12/6.

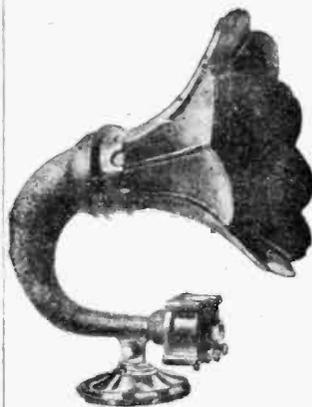
De Jur Battery Strip, 2/9.
 Amisco Battery Strip, 1/6, now 3/9.

Compact 0003 Brass Plate Variable Condensers, 10/6, now 4/9.

Build Your Own Loud Speaker. Continental Cone Speaker Unit, 13/6. Ready-made cones, 1/3.

Orionoid 0005 Variable Condensers, with 4in. Bakelite Dial. Now 8/6.

Variable Condensers, just landed. All capacities excepting .0005. Up to 15/ value. Now 3/ each.



Amplion Famous A.R.19 Loud Speaker. £6/10/ List Price. My Price, 50/.

Send 9d in Stamps for Illustrated Catalogue. Coupon enclosed, valued 4/.
 Also Bargain Bulletin List of Sets to Build Yourself.
 Charts, 6d each, Free with parts.
 Send 5/ for Large Bunch of Charts and Booklets to Build Your Own Sets, Chargers, Eliminators, Portables, etc.

Special attention to Mail Orders. Please add postage, as prices are cut to quick. Sane service. Satisfaction assured.

Levenson's Radio

The Palace of Wireless,

226 PITT STREET, SYDNEY
 Branch, 86A Pitt Street.

Interstate Programmes, Wed., Nov. 20

Radio Dealers!

We can show you increased profits and lines that lead to more business

Eclipse Radio

not only stock all standard lines, but can offer exclusive and guaranteed goods that will show you better returns.

4 GANG CONDENSER

Each section fitted with trimmer, 57/6

DRESNER SHORT-WAVE KIT

with world-wide reputation complete with tuning and reaction condenser and choke.

32/6

Delmonte Speakers, 38/6

Saxon Batteries
Western Electric and
Para Headphones, Etc.

Wholesale Only.

GUARANTEED BY THE AGENTS



32 Clarence St., Sydney

PHONE. B2002

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

1.0 to 2.0: See Friday. 1.55: Description of Craigie Maiden Flats, five furlongs, Woodend Cup meeting, by Eric Welch. 2.0: Reading, "The British Privilege of Grumbling" (John Wagstaff), Mr. John Coyne. 2.20: Musical interlude. 2.25: Description of J. C. Keating Handicap, 5½ furlongs, Woodend races, by Eric Welch. 2.35: Musical interlude. 2.40: "Modern Democracies," by Hon. J. H. Keating. L.L.E. 2.55: Musical interlude. 3.0: Time.

THE RADIO MATINEE

3.0: National Broadcasting Orchestra, "Two Sketches" (Frommel). 3.5: Description of Woodend Gold Cup, 9½ furlongs, Woodend Cup meeting, by Eric Welch. 3.15: Christie Moore, mezzo-soprano. "Silent Noon" (Vaughan Williams), "Prelude" (Landon Ronald). 3.22: National Broadcasting Orchestra, suite, "Carnaval Venetien" (Burgman). 3.32: "The Gramophone Man," "Blue Hawaii," selected. 3.39: Tasma Tierney, cello, "Ahi Moon of My Delight" (Lehmann). 3.42: Description of Koovala Trial Handicap, 6 furlongs, Woodend Cup meeting, by Eric Welch. 3.50: National Broadcasting Orchestra, intermezzo, "Marionettes" (Zamecnik). 3.54: A comedy sketch, "The Thief," Lil (the Thief), Dulcie Hall; Dr. Burton, Ford, Mrs. Dr. Burton, Leonie Levy. 4.6: Christie Moore, mezzo-soprano. "My Treasure" (Trevalsa), selected. 4.13: Description of Clyde Highweight Handicap, 1 mile, Woodend Cup meeting, by Eric Welch. 4.23: "The Gramophone Man," "My Antonia," selected. 4.30: National Broadcasting Orchestra, selection, "Rio Rita" (Tierney). 4.43: Description of Lyndhurst Jumpers Flat Race, 1¼ mile, Woodend Cup meeting, by Eric Welch. 4.50: Close down.

THE CHILDREN'S CORNER

5.45: "Little Miss Kookaburra." 6.45: Special Health Week address, "The Necessity of Exercise," by Mr. Clarence Weber. 6.55: Musical interlude. 7.0: Time. 7.1: Countryman's session. 7.25: Modern Steels, "The Effect of Nickel on Steel," by Prof. J. Neill Greenwood, D.Sc. 7.40: News. 7.45: "Our Radio Service to Listeners," by Mr. H. K. Love. 8.0: Time.

NIGHT SESSION

8.0: The Humphrey Bishop Musical Comedy Company. Overture, conducted by Mr. Humphrey Bishop; Mr. Humphrey Bishop discourses on his travels, Sydney Montigue, Marie Landon, and the company in a ragtime ensemble; Thelma Trott and Denise Sheard will sing "Love, Here is My Heart"; George ("Scratcher") Ross and Maurice Jaffey, in a comedy interlude; Sydney Montigue and The Girls; Arthur Hemsley and Elaine Maye, in a Devonshire comedy sketch; Thelma Trott and Maurice Jaffey will sing; Gwen Weston, Maurice Jaffey, and George ("Scratcher") Ross, in a comedy sketch; George ("Scratcher") Ross, the Lancashire comedian; Marie Landon, Sydney Montigue, and Maurice Jaffey, in a comedy sketch; Cecille Audibert will sing "Cigarette"; Nick Morton, the humorous Sentimentalist; Maurice Jaffey and The Girls; George ("Scratcher") Ross, in further "Scratcherisms"; Maurice Jaffey, Cecille Audibert, and the company in "The Rollicking Buccaneers." 9.30: An orchestral interlude. 9.40: Extracts: Cecille Audibert, Thelma Trott, Elaine Maye, Marie Landon, and Gwen Weston, in grave and gay quintettes; Denis Sheard, with "When My Ships Come Sailing Home"; Nick Morton, assisted by Sydney Montigue and Maurice Jaffey, in a comedy sketch; Thelma Trott, "Heaven in Your Smile" (George "Scratcher") Ross, assisted by Sidney Montigue, comedy sketch; Cecille Audibert and Maurice Jaffey; Nick Morton and Marie Landon, comedy interlude; Arthur Hemsley and Elaine Maye, "Childhood Days"; George ("Scratcher") Ross; Nick Morton, and the company in a comedy finale. 10.40: British Official Wireless news; meteorological information; items of interest. 10.50: Paul Jeacle and His Band. 11.30: God Save the King.

3AR

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

MORNING SESSION

8.15 to 11.0: See Friday.

MIDDAY SESSION

12.0 to 2.0: See Friday.

AFTERNOON SESSION

2.1: Band music—Coldstream Guards Band. 2.6: Whispering baritone—Jack Smith. 2.9: "Cellist"—Beatrice Harrison. 2.12: Male quartette—National Cavaliers. 2.15: Band music—Royal Air Force Band. 2.18: Tenor—Ernie Carroll. 2.22: Orchestral—Royal Opera Orchestra. 2.30: Soprano—Dame Nellie Melba. 2.34: Violin—Erica Morini. 2.38: Choral—Sistine Choir. 2.42: Band music—Black Diamonds Band. 2.45: Whispering baritone—Jack Smith. 2.46: Piano—Adam Carroll. 2.54: Soprano—Dame Nellie Melba. 2.57: Band music—Black Diamonds Band. Mainly for women. 3.0: Special Health Week address—Health and Physical Culture for Women, Miss Cadwallader. 3.15: Musical interlude. 3.20: "The School Child"—Creating a love for music, Miss M. Lush. 3.35: Musical interlude. 3.40: Home Management—Care of Household Equipment, Miss Kathleen Benningfield. 3.55: Musical interlude. 4.0: Women's Status in other Countries—Miss Nora Collison. 4.15: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air to-night? 7.32: Sporting results. 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION

8.1: Why we Behave as Human Beings—The Sex Instinct, Prof. J. A. Gunn, M.A., B.Sc., Ph.D. An Evening with Beethoven. 8.15: Mabel Nelson, piano—Movement from Sonata (Beethoven). 8.20: A Studio reproduction of Symphony No. 7 (Bach). Op. 92 (Beethoven). "Poco Sostenuto). Vivace." "Allegrretto." "Presto." "Allegro Con Brio." Felix Weingartner and Royal Philharmonic Orchestra. 9.0: A.B.C. String Quartette—Movements from quartette (A special reproduction of Choral Symphony, No. 9 in D Major (Beethoven). Soloists—Elsie Suddaby, Nellie Walker, Walter Widdop, Stewart Robertson. 10.20: Weather and news. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

Day sessions as usual, see Friday.

NIGHT SESSION

8.0: The Studio Dance Orchestra, dance music. 8.10: Harry Grundten and Mark Solomon, entertainers. 8.25: The Studio Dance Orchestra, dance music. 8.35: Jas. Brett, songs and patter. 8.45: The Studio Dance Orchestra, dance music. 9.0: Metropolitan weather forecast. 9.5: John Morrison, entertainer, "The Mirror." 9.15: The Studio Dance Orchestra, dance music. 9.25: Mrs. Lillian Corrigan (harpist), selected melodies. 9.35: The Studio Dance Orchestra, dance music. 9.45: Mrs. Roy Parkinson (soprano), "Spinning Song" (Reimann), "Butterflies" (Riemann). 9.55: The Studio Dance Orchestra, dance music. 10.5: News supplied by the metropolitan dailies. 10.20: The Studio Dance Orchestra, dance music. 11.0: Close down.

5CL

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

MORNING SESSION

During the day a description of the cricket, South Australia v. New South Wales, will be given. 11.15 to 2.0: See Friday.

AFTERNOON SESSION

3.0 to 4.30: See Friday. 6.0 to 7.0: See Friday. 7.40: Rev. E. S. Klek, M.A., B.D. 7.55: An Address to Boy Scouts.

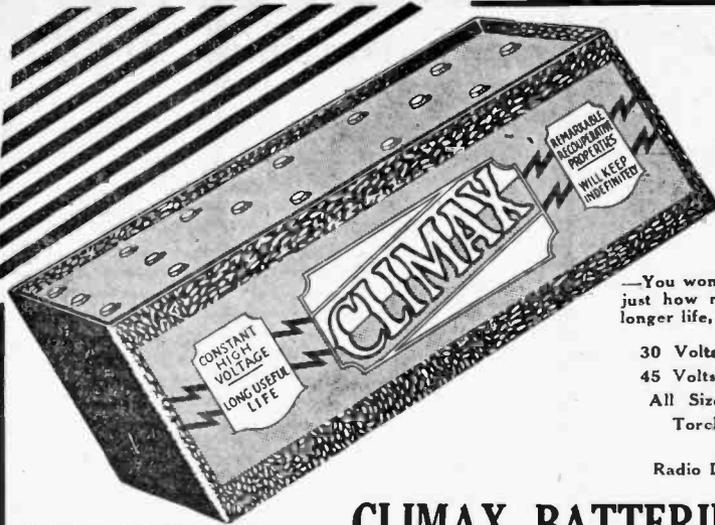
NIGHT SESSION

8.8: Waltz, "Merry Widow." 8.17: Old-time Choruses by the Lyric Male Quartette, "At Event" (J. L. Davey), "Pussy's in the Veil" (Herbert). 9.24: Marine Four-step, "Red Wing." 9.33: Jack Burgess and Netta Rodney in Old-time Melodies. 8.37: Barn Dance, "Waiting at the Church." 8.45: Miscellany, "The Road to Anywhere." 8.51: Frank Perrin, English Comedian. 8.54: Jolly Miller Waltz, "Variety Tunes." 9.0: Meteorological Information, including Semaphore Tides. 9.2: Overseas Grand Report. 9.3: Lyric Male Quartette, "The Moon Man" (Macy), "Juanita" (Parks). 8.10: Alberts, "Old Refrains." 9.24: Jack Burgess and Netta Rodney. 9.28: Military Two-step. 9.35: Old-time Choruses by the Lyric Male Quartette, "Old Kentucky Home," "Two Files." 9.42: Valeta, "Kiss of Spring." 9.50: Chereos. 9.52: Polka, "Little Brown Jug." 10.0: Frank Perrin, English Comedian, will entertain you again. 10.15: News, Weather Sporting, including a resume of Woodend Race Results, Cricket Scores, South Australia v. New South Wales. 10.25: Lancer Selection. 10.40: Old-time Choruses by the Lyric Male Quartette, "Mary," "An Evening Pastoral." 10.47: Barn Dance, "Show Me the Way to Go Home." 10.52: Jack Burgess and Netta Rodney in some more Old-time Melodies. 10.56: Waltz, "Till We Meet Again." 11.0: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION. MORNING SESSION. MIDDAY SESSION. THE RADIO MATINEE. EARLY EVENING SESSION: See Friday. EVENING SESSION.—(First hour's programme, light and popular music.) 8.0: Weather report. 8.2: Beryl Scott, entertainer, at piano. 8.3: Sketch from Dickens declaimed by Harley Edwards. 8.19: The Versatile Two, entertainers. 8.50: Theo Meugens, tenor. 8.57: Announcements (classical programme). 9.0: Weather. 9.1: Lord Byron and his poetry, "Don Juan," by Anita Fitzgerald. 9.16: Classical pianoforte solos by Otto Kaiser. 9.23: Signor de Micheli, baritone. 9.30: Classical pianoforte solos by Otto Kaiser. 9.37: Zlata Kalminkoff, cellist. 9.41: Signor de Micheli, baritone. 9.48: Zlata Kalminkoff, cellist. 9.56: Musical reproduction. 10.0: Weather. 10.5: Temple Court Dance Band. 10.59: Weather. 11.0: Close.



CLIMAX

The Battery that Lasts Longer

—You won't know what you are missing in Radio enjoyment, and just how much of your Battery Money you can save by their longer life, until you install Climax.

30 Volts, 8/-.
45 Volts, 12/-.
All Sizes for Torches.

45-V. Heavy Duty
24/- Now here.
Climax "C" Batteries—
9 Volts, 4/-.
15 Volts, 6/-.

60 Volts, 16/-.
90 Volts, 24/-.
Give your Set more power with a CLIMAX.

Radio Dealers, Write for Attractive Proposition and Special Discounts.

CLIMAX BATTERIES FOR YOUR TORCH

The next time you order torch batteries, see they are "CLIMAX." You will be rewarded with a steadier, brighter, and never-failing light, plus longer life and service, than you have ever had before. Mono Cells, 8d. Double Cells, 3 volts, 1/4; Triple Cells, 4½ volts, 2/-; Flat Cells, 4½ volts, 1/-.



WHOLESALE RADIO DEALERS, MERINO HOUSE, 57 YORK STREET, SYDNEY, N.S.W.

RADIO DEALERS

We carry all Standard Lines in Radio. PHONE, B2409-10 for Quick Service.



BRITON—MAKER OF MEN.

I'll Make You Feel Alive!
I'll give you a new and wonderful THRILL! I'll put glorious new LIFE into every cell, nerve and organ of your body. Man, things happen when I start working on that body of yours! And they happen FAST. Floods of vitality surge through you, your vital organs tune up and start hitting on all six; your muscles begin to GROW. In 30 days you're a changed man. You feel better and look better than you ever did in your life. Your body has been completely rebuilt—you'll wonder where those big, beautifully proportioned muscles came from!
Another MIRACLE IN MUSCLE. Yes, and this time it's YOU. Just give me a few minutes a day in your own home—and watch yourself.

I Don't Promise Anything.
I GUARANTEE to put two inches of solid muscle on your arms; to increase your chest five inches; to develop your neck to a size larger collar, to add three inches of powerful development to your thighs; two inches to your calves; to give you a firm, slim waistline that will make you take in a notch or two in your belt. And I don't ask you to take my word for it—I don't promise anything—I back every statement with an iron-clad GUARANTEE. I've done all this for others. I can do it for you. Get the PROOF—send for my amazing new book—now; it's FREE.

I WANT YOU NEXT

New—Sensational—Extraordinary! The greatest demonstration of muscle-building known to the world of physical culture! YOU can be next! Almost overnight I'll transform you into a marvel of muscular power—give you astounding new health, strength, and vitality. Read how!

MIRACLES IN MUSCLE! You hear everybody talking about them. Physical culture authorities are amazed. Think of it! Men made over—almost overnight. Puny, sickly weaklings transformed into superb specimens of MANHOOD! Strong men made STRONGER. This astounding new method works its wonders for ALL—young or old, sick or well. Incredible? Yes! But this is an age of marvels. We speed across continents by aeroplane, where once we plodded by stage coach. We talk through the air by radio, where once we depended upon slow-footed couriers. And now BRITON brings to physical culture the greatest advance of the century.

BRITON, the pioneer—the first in the field—to-day, as always, is years ahead of his time. Briton training—the original, the genuine, the system that has built the world's great strong men—still sets the pace—startling new developments make it the most modern system of body-building in the world. Ordinary systems become as old-fashioned as the one-horse shay in comparison. Briton training accomplishes almost overnight what other systems can never accomplish in months and years!

THE GREATEST BOOK IN THE WORLD,

"The Secrets of Muscular Strength"

It's FREE! This book will startle you, amaze you. Get it while it is FREE!
107 PITT STREET, SYDNEY, N.S.W.

RIP THIS OUT — SEND NOW!

IT IS FREE

Please send me, absolutely free and without any obligation on my part, a copy of your latest book—"Secrets of Muscular Strength and How to Acquire It." I enclose 6d in stamps for postage.

NAME

FULL ADDRESS

ALFRED J. BRITON
107 PITT STREET, SYDNEY, N.S.W.
Dept. WW.

(Known throughout the Southern Hemisphere.)



Local Programmes, Thursday, November 21

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 Telegraph Pictorial."
 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: HORACE WEBER 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: 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."
 2.7: To-day's acceptances, by the A.B.C. Racing Observer.
 2.17: POPULAR EDUCATION, C. N. Baevertz, "Spoken English."

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: THE 2FC INSTRUMENTAL TRIO.
 2.42: ANDREW BIRSE, Baritone—
 (a) "Give a Man a Horse" (Thomson).
 (b) "Youth" (Teschemacher).
 (c) "Little Coat of Courage" (Wilmut).
 2.49: RAIMUND PECHOTSCH, Violinist—"Adagio from Concerto" (Bruch).
 2.56: THE 2FC INSTRUMENTAL TRIO.
 3.11: GWEN ROBSON, Pianist—"Seven Waltzes" (Brahms).
 3.18: ANDREW BIRSE, Baritone—
 (a) "Turn Ye to Me" (Lees).
 (b) "An Eriskay Love Lilt" (Fraser).
 3.25: RAIMUND PECHOTSCH, Violinist—
 (a) "Liebeslied" (Pechotsch).
 (b) "Hungarian Rhapsody" (Pechotsch).
 3.32: THE 2FC INSTRUMENTAL TRIO.
 3.47: GWEN ROBSON, Pianist—
 (a) "Nocturne" (York Bowen).
 (b) "Waltz Reverie" (York Bowen).
 3.54: FRANCIS JACKSON will speak on "The New Italy."
 4.9: 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: Children's "Good-night" 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." Truck Bookings.
 7.58: To-night's Programme.

THE EVENING PRESENTATION—8 to 11.30 p.m.

- The Play for to-night is in the capable hands of the University Players. There is the Overture and Stage Presentation from the Capitol. Song Groups by Fraser Coss, a Pianoforte Recital by Carlyle Kenny, and Jack Dempsey, "Just Different," to intrigue 2FC listeners. Between 9 and 10 p.m. our programme will be relayed from 3LO, Melbourne. Through 2BL Service there is much merry-making with the Hospital Concert Party at the Liverpool Home.
 8.0: FROM THE CAPITOL THEATRE: The Overture played by Horace Sheldon's Orchestra, with Fred. Scholl at the Wurlitzer.
 8.7: FROM THE STUDIO: CARLYLE KENNY, Pianoforte Solos—
 (a) "Vecchio Minuette" (Sgambati).

- (b) "Impromptu in F Sharp Major" (Chopin).
 (c) "Polonaise in A Flat Major" (Chopin).
 8.22: FRASER COSS, Baritone—
 (a) "Song of Thanksgiving" (Allitsen).
 (b) "Fragile Things" (Phillips).
 8.29: JACK DEMPSEY, "JUST DIFFERENT."
 8.36: FROM THE CAPITOL THEATRE: Fred. Scholl at the Wurlitzer.
 FROM THE STUDIO:
 8.52: FRASER COSS, Baritone—
 (a) "The Hallowed Hour" (Haydn Wood).
 (b) "Requiem" (Homer).
 9.0: THE COUNTRY MAN'S WEATHER SESSION—
 (a) New South Wales Forecast.
 (b) Inter-State Weather Synopsis.
 9.2: THE UNIVERSITY PLAYERS in a Radio Play, specially written for broadcasting by John Pickard, "The Tomb of Osiris."
 9.47: CARLYLE KENNY, Pianoforte Solos—
 (a) "Concert Etude in C Major" (Rubinstein).
 (b) "Andante and Rondo Capriccioso" (Mendelssohn).
 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.
 10.2: News from the "Labor Daily."
 10.5: News from the "Daily Telegraph Pictorial."
 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 and Announcements.
 12.2: LUNCH MUSIC.
 1.0: Afternoon news from the "Sun."
 1.5: Studio Music.
 1.15: Women's Interest Talk—MRS. MILDRED MUSCIO, "Vocational Guidance."
 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: BRUNTON GIBB will make some "Random Remarks."
 2.45: MEMORY MELODIES.
 3.0: OLGA LE GRAY in Popular Songs—
 (a) "Love Boat" (Brown).
 (b) "When My Dreams Come True" (Berlin).
 (c) "Beloved" (Sanders).
 3.7: MODERN MUSIC.
 3.22: MADAME DOBRINSKI, Monologues—
 (a) "Ma Dusky Maid" (Smith).
 (b) "Just Her Way" (Aitken).
 (c) "On the Promenade" (Rossiter).
 3.30: RADIO RHYTHM.
 3.45: F. H. RAWARD will speak on "Port Said, the Edge of Egypt's Mystery."
 4.0: OLGA LE GRAY, Popular Vocalist—
 (a) "Jeannine, I Dream of Lilac Time" (Shilkret).
 (b) "Sally of My Dreams" (Kernell), by request.
 (c) "Coquette" (Berlin).

4.7: DANCE NUMBERS.

- 4.17: MADAME DOBRINSKI, Monologues—
 (a) "We've Got a Servant" (Weston and Lee).
 (b) "Oh, Cecil! I Shall Have to Call the Guard" (Elliott).
 4.24: AUSTRADIO MUSICAL REPRODUCTION.

- 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: DINNER MUSIC SUCCESSION.
 6.45: THE GIRLS' RADIO CLUB, conducted by Miss Gwen Varley.
 7.5: Studio Music.
 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—8.0 to 10.30 p.m.

- There is no doubt Hospital Concert Party provides better entertainment on the air of the popular type than any other medium. The listeners enjoy the atmosphere, the very evident appreciation by the patients, and the general air of jollity which pervades the transmission. Our party is at the Liverpool Home to-night. Charles Lawrence is directing it, and who knows but what Mr. Lawrence may call on a clever member of his audience to contribute an impromptu item. Through 2FC Service Thursday night's feature is a play, and the University Players are concentrating on a fresh idea for to-night. Between nine and ten 2FC's programme is being relayed by 3LO Melbourne.

8.0: FROM LIVERPOOL—A HOSPITAL CONCERT PARTY, directed by Charles Lawrence.

- Assisting Artists:
 Frank Ryan,
 Maggie Foster,
 Carlton Fay,
 Rae Foster.
 9.30: FROM THE STUDIO—
 Weather Information for the Man on the Land.
 9.32: THE WIRELESS SINGERS—
 (a) "My Love Dwelt in Northern Lands" (Elgar).
 (b) "Drink to Me Only."
 9.42: AL HAMMETT, Saxophone Solos—
 (a) "Emily" (Valse Fantasia) (Gunewick).
 (b) "Saxarella" (Weidof).
 9.49: VOCAL DUETS.
 9.56: THE WIRELESS SINGERS—
 (a) "In England, Merrie England," from "Merrie England" (German).
 (b) "Woodland Serenade."

NEXT WEEK

THE MODERN 2

for use with
A.C.

— o o o —

Fred Johns on
JIU-JITSU FOR
WOMEN

— o o o —

AND SHORTLY
A SPECIAL PORTABLE
NUMBER OF
"WIRELESS WEEKLY"

- 10.6: AL HAMMETT, Saxophone Solos—
(a) "Inspiration" (Hazlett).
(b) "Saxaphobia" (Weldoft).
- 10.13: THE WIRELESS SINGERS—
(a) "Dear Little Shamrock."
(b) "Venetian Song."
- 10.25: Late News from the "Sun."
Late Weather Forecast.
- 10.30: NATIONAL ANTHEM. CLOSE.

2GB

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

- 10.0 a.m. to 11.30, 2.0 p.m. to 3.30, 5.15 to 7.45, as usual.
- 8.0: Miss Vonnie O'Sullivan, contralto.
- 8.7: Instrumental Quintette.
- 8.15: Mr. John McCaffrey, baritone.
- 8.22: Cello solos.
- 8.30: Mr. Jack Win and Miss Nora Windle in a humorous sketch.
- 8.40: Miss Gwen Selva, soprano.
- 8.50: Symphony Orchestra.
- 9.0: Weather report.
- 9.3: Address.
- 9.15: Miss Vonnie O'Sullivan, contralto.
- 9.25: Cello solo.
- 9.30: Mr. John McCaffrey, baritone.
- 9.40: Mr. Jack Win and Miss Nora Windle in a humorous sketch.
- 9.50: Miss Gwen Selva, soprano.
- 10.0: Instrumental music.
- 10.30: Close.

2UW

Radio Broadcasters Ltd., Paling's Building, Ash St. Sydney (Wavelength, 267 Metres).

MIDDAY SESSION.

12.30 to 4.30, as usual.

EVENING SESSION.

- 5.30: Children's Hour, conducted by Uncle Jack.
- 6.30: Close.
- 7.0: Request numbers.
- 7.45: Garden talk, by Mr. S. H. Hunt.
- 8.0: Piano recital.
- 9.0: 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 to Noon: See Friday.
6.0: Children's session.

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.
- 8.18: Humorous interlude.
- 8.30: FREDERICK HOLT presents a recital of Australian compositions and composers, with musical and vocal illustrations.

2UE

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

- EARLY MORNING SESSION 7.15 to 8.30.
- MIDDAY SESSION, 10.0 to 12.0.
- AFTER-NOON SESSION, 1.0 to 2.30.
- EVENING SESSION, 6.30 to 10.15, as usual.

2KY

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

Wednesday, November 20

MORNING SESSION AND CHILDREN'S SESSION AS USUAL.

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, NORTHEY DU MAURIER.
- 8.0: Hawaiian steel guitar selections.
- 8.15: AL ROSENBERG, novelty pianist.
- 8.30: Banjo solos, MASTER HARRY WEIR.
- 8.36: AL ROSENBERG at the piano.
- 9.10: SPORTING FEATURE, from Sydney Stadium, full description of main 15-round event.
- 9.50: Music from the Studio.
- 10.0: Closing announcements.

Radio Valves

**MURDOCH'S ANNOUNCE
ANOTHER SHIPMENT**

—at Cut Prices

THERE'S not a single flaw in these Valves—
examine them yourself—see them tested.
They're the second consignment of the greatest Valve
purchase ever made. The prices—compare them for
yourself—represent the greatest Value in Valves ever
offered.



VALVES FOR EVERY PURPOSE

For 1½-volt dry cells, or 2-volt accumulator.	TO FIT ENGLISH TYPE SOCKET B.105, 1 amp. filament. General purpose valve. Ideal for portable sets	2/6
	TO FIT UX SOCKET, B.105. Same as above.	4/6
For 2V. Accumulator.	TO FIT UX SOCKET. Cosmos red spot, general purpose	1/6
For 4 volt Accumulator or Dry Cells.	TO FIT UX SOCKETS, Condor P.R. 51, general purpose	3/6
	A.W.A. 99X, general purpose	3/6
	303X Super Power	4/6
	430 Special H.F.	3/6
	FOR ENGLISH TYPE SOCKETS, 306, general purpose	2/6
	310 H.F. Detector	2/6
	Condor R.R. 41 Power	3/6
	Condor P.R. 48, general purpose	3/6
	410 H.F. Detector	2/6
	430 Special H.F.	2/6
	TO FIT U.V. 199 TYPE SOCKET, Condor P.R. 51 (U.V.199 type), general purpose,	3/6
For 5-6 volt Accumulator.	FOR U.X. SOCKET, Condor P.R. 52 U.X., general purpose 201A type valve	3/6
	A.W.A. 101X, as above	3/6
	TO FIT U.V. 201A TYPE SOCKET, Condor P.R. 52, U.V., general purpose. Ideal for eliminators	2/-

If your set now has UX sockets and you wish to use English Base Valves, Murdoch's have just landed a shipment of base mounting Cushioned type English Sockets to popularise them, they are offered for 1/3 each

Postage on 1 to 4 Valves, 6d extra. Over 4 Valves, post free.

When ordering, kindly address all letters to Desk "A.2."



"Specialists in all matters pertaining to the Science of Radio."

Interstate Programmes, Thursday, November 21

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 12.15: See Friday

MIDDAY SESSION

1.0 to 2.0: See Friday

EDUCATIONAL SESSION

2.0: Great Australians, "Dr. Dunmore Lang," by Mr. J. Howlett Ross. 2.15: Musical interlude. 2.20: "Music Explained and Illustrated," by Mr. A. E. H. Nickson, F.R.C.O., A.R.C.M. 2.35: Musical interlude. 2.40: "Australian Adventurers," by Captain Donald MacLean. 2.55: Musical interlude.

THE RADIO MATINEE

3.0: Victory Brass Band, march "Angle Orientale," overture "Lustspiel." 3.10: Rosina Down, soprano. "The Hindu Song" (Korsakov). "The Cuckoo" (Lehmann). 3.17: Margaret Davey, piano. 3.25: Tom Semple, tenor. "I Will Await Thee" (Coomings-Clarke). "My Heart's Desire" (Coringsby-Clarke). 3.32: Victory Brass Band, selection. "Songs My Mother Used to Sing." 3.40: A comedy sketch. "Philanthropy," by Frank Tompkins, produced by Betty Rice; Mrs. Page, Betty Rae, Carrie (her maid), Amy Rowe, Mr. Page, Rex Sinclair; George (a working man), Chas. Rowe. Scene, A Room off the Kitchen in Mrs. Page's house. 3.55: Margaret Davey, piano. 4.3: Rosina Down, soprano. "Happy Bird of Love" (Trelaway). "Mah Lindy Lou" (Strickland). 4.10: Victory Brass Band, "Selection of Popular Choruses." 4.18: Tom Semple, tenor. "How Many a Lonely Caravan" (Finde). "Aller Be With Us" (Finde). 4.25: Victory Brass Band, trombone solo, "Ave Maria" (Schubert). 4.30: Close-down. 4.35: Acceptance and barrier positions for the Epsom Turf Club's races on Saturday. November 23.

THE CHILDREN'S CORNER

5.45: "Bobby Bluegum"

EVENING SESSION

6.35: Melody broadcast. 6.45: Let's talk about our Animals. "Dogs" by Lieut.-Col. J. M. Carroll. 6.55: Musical interlude. 7.0: Melbourne Observatory (the signal). 7.1: Countryman's session. 7.25: For the man on the land, "Dairy Breeds and Their Characteristics," by Mr. A. J. Gill. 7.40: News. 7.45: "The Latest Books," by Captain C. H. Peters. 8.0: Time.

NIGHT SESSION

8.0: The Melody Three, fifteen minutes of popular music.

8.15: You will hear the outstanding personality or subject of the week.

Our Dance Night

8.30: Paul Jeacle and His Band, dance numbers. 8.40: Rita Hilton, entertainer at the piano, "Do Something." 8.43: Paul Jeacle and His Band, dance numbers. 8.53: Bob Molyneux, baritone, in something new. 8.56: Paul Jeacle and His Band, dance numbers. 9.6: Gwen Hart, soprano, "Lackaday" (Crampton). 9.9: Paul Jeacle and His Band, dance numbers. 9.19: Rita Hilton, entertainer at the piano, "Oh What a Night." 9.22: Paul Jeacle and His Band, dance numbers. 9.32: Bob Molyneux, baritone, a recent hit. 9.35: Paul Jeacle and His Band, dance numbers. 9.43: Gwen Hart, soprano, "Love Sends a Little Gift of Roses" (Openshaw). 9.48: Paul Jeacle and His Band, dance numbers. 9.58: Rita Hilton, entertainer at the piano, "Good Little, Bad Little You." 10.1: Paul Jeacle and His Band, dance numbers. 10.10: Bob Molyneux, baritone, a popular song. 10.13: Paul Jeacle and His Band, dance numbers. 10.23: Gwen Hart, soprano, "Rosemary for Remembrance" (Lady Arthur Hill). 10.26: Paul Jeacle and His Band, dance numbers. 10.36: British Official Wireless news; meteorological information; items of interest. 10.45: Paul Jeacle and His Band, dance numbers. 10.55: Bob Molyneux, baritone, new number. 10.58: Paul Jeacle and His Band, dance music. 11.30: God Save the King.

3AR

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

MORNING SESSION

8.15 to 11.0: See Friday

MIDDAY SESSION

12.0: Chimes. 12.1: Community singing from the Melbourne Town Hall; conductor, Frank Hatherley.

2.0: Chimes.

AFTERNOON SESSION

2.1: Orchestral—Ray Miller and Orchestra. 2.3: Novelty Duo—Luther and Robinson. 2.6: Banjo Duo—Frank and James McCravy. 2.9: Soubrette, Zelma O'Neill. 2.12: Orchestral—Ray Miller and Orchestra. 2.15: Tenor—Frank Nunn. 2.10: Violin—Frederick Fradkin. 2.22: Contralto—Sigrid Oenig. 2.26: Orchestral—Heerman's Concert. Duo. 2.30: Comedienne—Wendell Hall. 2.33: Banjo Duo—Frank and James McCravy. 2.36: Soubrette—Zelma O'Neill. 2.39: Orchestral—Lopez and his Casa Lopez Orchestra. 2.43: Soprano—Marie Tiffany. 2.46: Band—Vesella's Italian Band. 2.49: Novelty Duo—Luther and Robinson. 2.51: Piano—Vincent Lopez. 2.57: Band—Vesella's Italian Band. 3.0: Request numbers. 3.20: Why women smoke—Miss Hattie Knight. 3.35: Musical interlude. 3.40: Pops and Cookery. Gas cooking. Miss E. Noble. 3.55: Musical interlude. 4.0: Your Health and Appearance—Exercise, Acc. and Health, Mrs. Clarence Weber. Trade—Demonstration Session. 4.15: Musical reproduction. 4.45: Evenson, transmitted from St. Paul's Cathedral. 5.30: Weather data. 5.45: Close down.

EVENING SESSION

6.15: Dinner music. 7.30: What's on the air to-night? 7.32: Sporting results; acceptances and barrier positions for the Epsom Turf Club races. 7.35: Latest musical releases. 7.50: Special Health Week address—The Lord Mayor of Melbourne (Cr. H. Dunston). 8.0: Chimes.

NIGHT SESSION

8.0: National Broadcasting Orchestra—Overture, "A Midsummer Night's Dream" (Mendelssohn). 8.10: The Master Four Male Quartette—"Deep Night" (Henderson); "I'm Just a Vagabond Lover" (Zimmerman). 8.16: Mabel Nelson, piano—"Menuette" (Schubert); "Moment Musical" (Schubert); "Dubist die Ruhr" (Schubert-Liszt). 8.26: Mary Hotham, mezzo soprano—"Young Charms" (Landon Ronald); "The Little Damozel" (Novello). 8.33: National Broadcasting Orchestra—"My Heart at Thy Sweet Voice" from "Samson and Delilah" (Saint Saens); "Coronation March," from "Le Prophete" (Meyerbeer). 8.43: The Master Four Male Quartette—"Davy Jones Locker" (Petrie); "A Banjo Song" (Home). 9.0: Transmission from Sydney—Relayed from 2FC. 10.20: Weather and news. 10.30: God Save the King.

4QG

Queensland Government Radio Service, Brisbane (Wavelength, 385 Metres).

For day sessions, see Friday

NIGHT SESSION

8.0: Group I—Grand Opera. 4QG Symphony Orchestra (conducted by Erich John) overture, "La Dame Blanche" (The White Lady); "Bolidere" (C. V. Woodland (baritone); "Largo al Factotum" (Rossini). 4QG Symphony Orchestra, selection from "Faust" (Gounod). Jill Manners (soprano). "Jewel Song" from

NEXT WEEK

Mr. WARNER writes on
Adapting the

MODERN 2 FOR A C

Also how to use it for
tuning in the Short-waves

"Faust" (Gounod). Group II—Miscellaneous: 4QG Symphony Orchestra, "Song Without Words" (Mendelssohn), "Gladiator's March" (Fuchs); Jean Naylor (contralto), "Advice" (Barrie); 4QG Symphony Orchestra, "Romance" (for string instruments and harp, Erich John); 4QG Symphony Orchestra, Frank de Hay; C. V. Woodland (baritone), "Passing By" (Purcell); 4QG Symphony Orchestra, waltz, "Artist's Life" (Strauss). Group III—Classical. C. T. Birkbeck (tenor), "Who is Sylvia" (Schubert). 4QG Symphony Orchestra (conducted by Erich John), first movement: Jill Manners (soprano), "Porgi Amor" (Mozart); 4QG Symphony Orchestra, "Italian Symphony" (Mendelssohn), "Pilgrim's March" and "Saltarello". Group IV—Light Opera, C. T. Birkbeck (tenor), "The Shoes of the Palm" (Stuart); 4QG Symphony Orchestra, selection from "Yeomen of the Guard" (Gilbert and Sullivan); Jean Naylor (contralto), "A Dance for Jack" (Monckton); 4QG Symphony Orchestra, overture, "Lustspiel" (Keler-Bela). 10.0: News; weather. Close.

5CL

Central Broadcasters, Ltd., 111 Hindmarsh Square, Adelaide (Wavelength, 409 Metres).

MORNING SESSION

During the day, descriptions of the Inter-State cricket, South Australia v. New South Wales, will be given.

11.15 a.m. to 2.0 p.m.: See Friday.

AFTERNOON SESSION

3.0 to 4.30: See Friday.

EVENING SESSION

6.0 to 7.10: See Friday.

NIGHT SESSION

8.0: Programme review. 8.10: Holden's Silver Band, conducted by O. Summerton, "It's a Long, Long Way to Tipperary." "Gems from the Overures." 8.20: Gladys Harvey, soprano. 8.24: The Hawaiian Trio, "Carolina Moon," "Hawaiian March." 8.31: Holden's Silver Band, "Absence Makes the Heart Grow Fonder," "Sylvie." 8.41: Vocal number. 8.48: H. G. Pearce, cornetist, "Peg o' My Heart." 8.53: The Hawaiian Trio, "Drowsy Waters," "Medley of Popular Songs."

9.0: Meteorological information, including semaphore flides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Holden's Silver Band, "Selection of Melodious Gems."

9.15: Gladys Harvey, soprano. 9.19: E. Hedley, steel guitar. 9.24: One-act play (produced by Robie Saunders), in which Jack Burgess and Robie Saunders will take part. 9.39: Holden's Silver Band, "Allee, Where Art Thou?" "Two Little Girls in Blue."

9.49: Gladys Harvey, soprano. 9.53: C. Greed, euphonium solo, "Mother Machree." 10.0: Vocal number. 10.7: Holden's Silver Band, "Estudiantina Waltz," "An Irish Tango."

10.15: News; weather; sporting service, including Inter-State cricket scores, South Australia v. New South Wales. 10.30: Dance recordings. 11.0: Close.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 435 Metres).

EARLY MORNING SESSION, MORNING SESSION, MIDDAY SESSION, THE RADIO MATINEE, EARLY EVENING SESSION: See Friday.

EVENING SESSION.—"Hail, Caledonia," special programme of Scotch music. 8.0: Town Hall chimes. 8.1: Weather report. 8.2: A skirl on the Pipes. 8.7: James Carnochan, Scotch baritone; 8.14: Thomas Foley, tenor. 8.21: Thelma Howard, soprano. 8.28: Frank Boyd, Scotch comedian. 8.35: Talk by Charles Schwab, L.C.M., "Robert Bruce." 8.50: James Carnochan, Scotch baritone. 8.57: Announcements. 9.0: Weather report. 9.1: "Scots Wha Ha." "The Cock of the North," by Piper. 9.8: Thomas Foley, tenor. 9.15: Thelma Howard, soprano. 9.22: Frank Boyd, Scotch comedian; 9.29: Rose Atkinson, mezzo soprano. 9.36: Roland Parsons, baritone. 9.43: Rose Atkinson, mezzo soprano. 9.48: Roland Parsons, baritone. 9.55: What's on the air to-morrow? 10.0: Weather report. 10.1: Temple Court Dance Band. 10.59: Weather. 11.0: Close.

2UE

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

Sunday, November 17

MIDDAY SESSION.

11.0: Mass, from St. Mary's Cathedral. 12.20: Studio announcements. 12.21: Orchestral and vocal music. 1.0: Close down.

EVENING SESSION.

5.45: Music from the Catholic Studio. 5.50: Instruction arranged by Rev. Father T. Walsh, S.J. 6.10: Music. 6.15: "Question Box" talks, arranged by Dr. L. Rumble, M.S.C. 7.0: Studio announcements. 7.1: Evening devotions, from St. Mary's Cathedral. 8.20: Announcements. 8.22: Overture, "Morning, Noon, and Night" 8.32: Orchestral and vocal concert. 10.15: National Anthem.

Talks on the Latest Novels

AN interesting series of talks has been arranged from 3LO for Thursday nights, when Mr. A. E. M'icken, of the Prahran Library, will discuss the latest novels. Mr. M'icken, who has been connected with libraries all his life, has lectured in connection with many literary societies, and during the course of the year handles most of the "worth while" books. With this knowledge at his command, Mr. M'icken has a good idea of the type of novel that listeners will appreciate, and his remarks on the latest publications will help those listeners who have to rely upon the brief criticisms in the newspapers before sending their library lists to town.

"EXELTRON"

B ELIMINATORS £3 15 0

A CHARGERS £3 0 0

A.B.C. POWER PACKS £5 10 0

Usually Sold £4 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, 51 Oxford Street, Sydney.

MODERNISE THAT B ELIMINATOR

We'll Give You 2/6 for Your Old Bell Transformer

COMPLETE ELIMINATOR KITS.

Wallace Eliminator Kit (for average sets).

59/6.

For sets up to 5 valves, complete kit (with DU10 Rectifier).

67/6.

WALLACE ABC POWER PACK

For completely electrifying average set (with use of A.C. valves).

95/-.

Circuits and instructions supplied with Eliminator Kits or parts, or with

"ELECTRIFIED RADIO."

Ten pages of sketches and informative matter on eliminators and electrification of sets.

1/- . Posted 1/3.

On the purchase of one of our 300 volt, 75 mil.

POWER TRANSFORMERS at 25/-.

(less the trade-in value of your bell-ringer.

We supply instruction sheet with every transformer.

No further alterations or additions are necessary.

This Transformer will give higher voltage from eliminator.

Avoid risk of fuses or blow-outs.

Isolate Set from 240 volt mains.

Give steadier current supply.

Meet requirements of Electricity Department.

You owe it to your Eliminator!

OTHER ELIMINATOR PARTS

UX280 Transformers, 600 volt, 200 mils, with filament winding.

30/-.

ABC Transformers, for 201A or DU10 rectifier, with A.C. filament winding.

32/6.

100,000 ohm Variable Resistors for detector or radio tap.

4/6.

30 Henry 100 mil. Chokes,

10/6.

Tapped Voltage Dividers, for eliminator output.

5/6.

UX280 Radiotron Rectifying Valves, full wave.

30/-.

Mullard DU10 Half-wave Rectifying Valves.

17/6.

Pilot Resistors for Grid Bias.

3/6.

Condensers, 4 mfd., 500 volt test.

6/9.

We are Complete Outfitters in Radio

"THE WIRELESS SHOP"

Same Day Service

for

Country Clients

Money Back

Guarantee

Miss F. V. Wallace, 6 Royal Arcade, Sydney.
THE OLDEST RADIO FIRM IN TOWN.

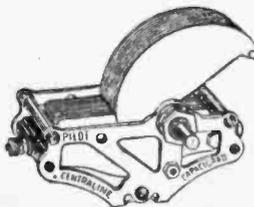
ESTABLISHED 8 YEARS. 'PHONE, MA3343.

Two Doors from George Street, opp. Q.V. Markets.

Harringtons present these PILOT PARTS

Products of the world's greatest parts plant!

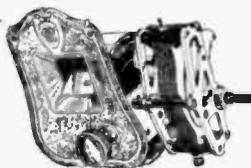
The 1600 Series CONDENSERS



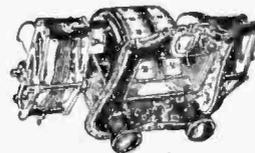
The 1600 Series Condensers.

These variable condensers are made of non-corroding brass parts, gold finished with highly polished aluminium end plates. Modified straight line frequency type-moulded bakelite insulation, and many other distinctive features. These condensers are the handiest made. Suitable for use in any receiver, either short or long wave.

.00016 mf. and maximum.	10/6
No. 1611	
.00025 mf. and maximum.	12/-
No. 1615	
.00035 mf. and maximum.	12/6
No. 1617	
.00050 mf. and maximum.	13/6
No. 1623	
Insulated flexible coupling.	2/-
No. 12A	



No. 1284L.



No. 1283L.

Illuminated PILOT Drum Dials

Nos. 1283L and 1284L illuminated drum dials are smooth running and free of backlash. The panel plates are of rich bronze and look well against either black or walnut panels. The scales are indirectly illuminated by small bulbs that work off the power transformers of the set. The bearings are substantial, and will support the heaviest condensers. The dials will take practically all types and makes of condensers, in single, double, or triple gang units.

Single drum, with bulb, No. 1284L	21/-
Double illuminated drum, with bulb No. 1283L	37/6

The 200 Series PILOT SOCKETS

Pilot sockets are made of genuine moulded bakelite and hold the tubes firmly, but not too tightly. Contact springs and soldering lugs are actually one piece, thus eliminating losses to the sockets themselves.

Set Builders' Socket, UX and UV Tubes, 1 prongs, No. 205	1/3
Shock-proof Socket, UX and UV Tubes, No. 206	3/-
Set Builders' Socket, UY Tubes, No. 211	1/6
Base Type Socket, UY Tubes, No. 212	3/-
Set Builders' Socket, screw contact, for UX and UV Tubes, No. 214	1/9
Universal Socket, UX and UV Tubes, No. 216	2/-
Universal Socket, UY Tubes, No. 217	2/6

Harringtons LTD

RADIO, PHOTO AND CINE MERCHANTS.
386 GEORGE STREET, SYDNEY

'Phone MA1660.

BRANCHES ALL STATES AND NEW ZEALAND.

HURRY BEFORE THEY GO! Only a Few Left

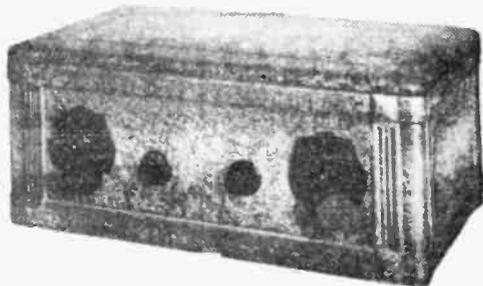
Continental Gang Mounting .0005, S.L.F. Condensers	7/6
The Latest Dry Metallic Rectifiers, 2amp.—Replace Tungar and similar Tubes	22/6
High Grade Geared, Non-slip Vernier Dials—Excellent Value	2/2
Alpha Bakelite Vernier Dials	4/6
The New Eco Interference Eliminator—The best Wave Trap	9/6
9-Volt "C" Batteries	2/6
Reinartz Coils Accurately Made	3/9
Marco Four Coil Kits	9/6
Mignon Transformers—Guaranteed High Grade, 5 to 1 and 3½-1 Ratios, CUB	7/6
	JUNIOR
	13/6
	SUPER
	£1/1/-
Genuine Econotron Valves—4-volt—.06 amp., UX Bases	4/10

CALL AND HEAR THE ACME OF PERFECTION IN MUSICAL REPRODUCTION, THE MAGNAVOX DYNAMIC SPEAKER AND OUR SUPER AMPLIFIER

COUNTRY RESIDENTS—YOUR ORDERS SENT SAME DAY

QUALITY Economic Radio Stores **SERVICE**

MACQUARIE ST., PARRAMATTA 25 ROYAL ARCADE 126A PITT ST. 13 UNION ST., NEWCASTLE



RADIOKES AC 332

Is Without Question the Greatest
3 TUBE SET
Ever Offered in Kit Form

RECEIVES INTERSTATE, BETTER THAN MOST FIVES

The new beautiful Radiokes Steel Cabinets are designed and drilled to house this excellent AC3. This cabinet comes in "knock-down" form, and is easy to assemble. Is equipped with the new type 332 punched steel chassis for quick and business-like assembly. This makes a professional and permanent job, and one of which the constructor can be justly proud. This cabinet and new steel chassis, sell complete for £2/7/6. If required for other types of sets, these cabinets and chassis may be purchased undrilled.

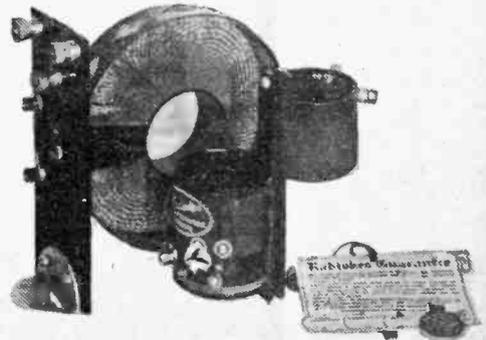
RADIOKES NEW WIRE-WOUND POWER RESISTORS are available in most necessary sizes for "B" supply and "C" bias at popular prices. 500 to 1000 ohms, 3/6 each; 1000 to 3000 ohms, 6/3 each; "B" voltage divider units, 8/6 each.

The new RADIOKES FOUNDATION AC.332 KIT in its improved form consists of:—Steel containing cabinet with punched steel channel-type chassis, new collapsible screening compartment, new antenna coupler, new band-pass filter, 23-plate midget, 5-plate midget, Radiokes R.F. choke, terminal switch strip, horizontal socket, 1000 ohm "C" bias resistor.

PRICE complete, boxed, £6/7/6 per kit.

AT YOUR DEALERS OR DIRECT FROM
METROPOLITAN ELECTRIC CO., LTD.,

RADIOKES HOUSE,
126-130 SUSSEX STREET, SYDNEY.



Above is illustrated the new AC.332 Coil Kit by Radiokes. This is to new specifications, and is more accessible, easy of wiring and mounting; and is provided with adjustment to allow for varying conditions of operation.

PRICE, 32/6 per kit.



The improved Radiokes Midget Condenser as used in the 332. All sizes, from 3-plate to 23-plate. Prices from 4/3 to 8/6.

The Radio Information

"Moaning Whistling"

Advanced For
Diagnosis

Under the
Direction of
ROSS A. HULL.
M.I.R.F.

"J.E.W.O.W." Gunnedah, writes.—"I would like you to explain how to check 'Moaning Whistling' in the wireless set. Also, when the wireless is touched, a ringing sound results. I would be obliged if you could tell me how to rectify these drawbacks."

Answer: "Moaning Whistling" is a new one on us, but a thorn by any other name still pricks. The nearest approach to a complaint which would fit that term is that caused by the carrier waves of two stations heterodyning. This causes a whistling which will vary in intensity, and perhaps in pitch, as one or both of the stations fade or "swing." Such interference between stations is not uncommon since several of the Japanese stations are on wavelenghts close enough to those of the Australian stations to cause a "beat" between the carrier waves. If this is the "Moaning Whistling" complained of, it is unavoidable, since it has nothing whatever to do with the receiver. The trouble could be corrected only by shifting one of the two interfering stations to a different wave.

A similar whistle or beat note can be caused if one of your neighbors operates his receiver in an oscillating condition. The receiver then acts as a small transmitter, and provides the same sort of interference that the Japanese stations are responsible for. When the neighbor tunes his set, or when his aerial blows about in the wind, the whistle will "moan."

Another possibility and a decided probability is that your own receiver is oscillating. If the set is a simple two, three, or four valve affair, it is certain that some regeneration control is provided with which the set can be put into or out of oscillation. You would have to locate the knob that does this, and adjust it properly. Should the receiver be a neutrodyne, it may require re-neutralising—work that you might well put in the hands of a qualified radio man in your town. The fact that you get a ringing sound when you touch the set would rather point to this condition. If you are certain that your receiver is not oscillating the ringing sound probably could be avoided by putting in a new detector valve or by covering the present one with a cardboard box full of cotton wool.

G.M.G. (Coogee).—Possibly set is not neutralised.

P.J.C. (???)—PLEASE WRITE PLAINLY! As much as possible has been copied from your letter, and the gaps filled in. Published below.

G.H.P. (Carlton).—"Please forward two circuits for a three-valve receiver as I have just put in two small batteries and one large one, but I think the trouble is with the wiring."

Answer: We shall be pleased to send you three copies containing circuits suitable for your requirements on receipt of 4/6d in stamps. The practice of sending copies "on appro." has not been satisfactory in the past. If you had advised us of symptoms, we should have been pleased to give you information on your present receiver. Note that a query coupon is required.

C.J.D. (Cessnock).—"I should be obliged if you could forward me copy of 'Wireless Weekly' containing instructions on building a 'B' battery of 120 volts. I enclose stamps."

Answer: Regret we have no copies. An article dealing with this subject was published in "Radio" (now incorporated in "Wireless Weekly"), so you might be able to trace one of these copies. If you care to send name and address we shall be pleased to publish an inquiry par. for you.

(2) The inductance of the coil would be decreased, and more turns would be necessary.

(3) "In by-passing h.t. to penthode valve, with a 2 mfd. Hydra condenser, can I connect earthed side of by-pass condenser to rotor of tuning condenser or one side of rheostat?"

Answer: Yes, if it will make your lead shorter.

J.V.T. (Strathfield).—"Use any good make midget condenser. Double spacing is not necessary. Make the shield just large enough to admit the valve. A flour-duster can be used, providing you could get one large enough. The distance between the aerial

and grid coils should be a quarter of an inch. Same for other coils. Both capacities mentioned may be used.

J.S.M. (Bowenfels).—"As a constant reader of 'Wireless Weekly' I have gathered together a heap of information and interesting data. I note in a recent issue your reply to 'M.C. (Vaucluse)' that the S.G. Booster Unit would not be very suitable for the Cossor Melody Maker."

Answer: No, for several reasons. The Cossor Melody Maker is an English job, and the circuit would require altering to suit the Booster Unit. One stage of screen grid is already in use in this receiver. Further, the valves used are of the two-volt variety, which would mean that, in order to get the correct grid bias, a separate battery would be necessary. Of course a special r.f. stage could be designed.

(2) "As I was thinking very seriously of building the above unit, your statement has put the lid on it. Is there any other r.f. circuit that you know of that has given good results when added to the Cossor?"

Answer: No. Cannot say I have ever heard the Cossor working with an added r.f. stage, but it is quite possible. You could build up a straight-out r.f. stage, but you would probably strike complications, especially if you don't know much about the circuit.

(3) "As there have been a goodly number of these sets sold in Australia probably some experimenter has discovered 'the goods' and would let me know per medium of your column if you would be so good as to publish a request."

Answer: Will be pleased to make the request for you, but we cannot guarantee that any advice received will be perfectly O.K. There are plenty of cranks who may consider sending in a diagram without trying their idea out. I think you will (if the set is made properly) find it quite unnecessary to add another r.f. set. What you may require is a second audio stage.

(4) "Can a blue print symbolic circuit of the Cossor be obtained?"

Answer: Yes, from Messrs. Harrington's, Ltd., George Street, Sydney. See also below.

GENERAL.—If any reader has added a stage of r.f. to the Cossor Melody Maker with success, will be please forward circuit and particulars, together with cutting of this query?

P.D.C. (Victoria).—"I wish to thank you for your service in the Radio Information columns. I have received from a reader a copy of the circuit mentioned, and now intend building this set using components specified above. Are these O.K.?"

Answer: Perfectly satisfactory.

(2) "In the diagram I have drawn at the side of my letter L1 appears to be two coils wound on the same former, but in your description of the Marco Four L1 is the only coil on the former. The circuit drawn here is from Radiokes catalogue, as I intend using their coil kit as recommended. I wish to arrive at the best arrangement and would therefore be pleased to know which is correct."

Answer: The additional coil (the small one) is used as an aerial coupler. It may be connected up to the aerial and earth as shown in the diagram, and is quite O.K. Will make receiver more selective. The original arrangement showed aerial and earth connected directly to the grid coil. You may get better results by connecting the bottom of the aerial coil, i.e. the E terminal, to the F terminal of the grid coil.

E.W. (Crockwell).—Condenser and valve suggested may be used.

(2) "Could you not have at least one page a week for short-wave fans? I think there are lots who would like it."

Answer: Thanks for kind remarks. The matter of a short-wave page is being considered. It is hoped to be able to obtain short-wave reports from regular listeners.

J.B. (Ashfield).—"Re the Countryman's One-valver. Would it be a good set for suburban use? How much would it cost to construct? Price complete with all accessories. Have you a copy of 'Wireless Weekly' containing the above circuit? If so, how much will the charge be, and where will I apply?"

Answer: The receiver can be used in the suburbs with quite good results on local stations, though I doubt whether you will get anything like reception reported from the country districts, for which the set was originally designed. It may be necessary to considerably reduce the size of the primary (say, to about 15 turns), and if interference is still noticed, it may be an improvement to use a .0001 mfd. fixed condenser in series with the aerial.

"RADIAC" (Marrickville).—"I have there any pickups suitable for attaching to a combination gramophone which, by changing the needle and turning sound box sideways, plays both Edison and ordinary records?"

Answer: The Edison Shop has cleared out all stocks of an instrument used as gramophone sound box and electrical pickup. The instrument meets

with your requirements. They have one left for demonstration, which you might like to see. The fresh stock will be in shortly.

(2) "What is the average amperage of a Leclanche cell Columbia 1½-volt positive 'A' with zinc half way round and a mixture of three ozs. pint sal-ammoniac?"

Answer: The question was published in order to give readers an idea of some of the senseless questions asked. If you had asked for the amperage of a Leclanche cell, giving dimensions and capacity, we might have been able to help. The capacity of a Columbia 1½-volt cell as sold is about 30 amp. hours, but do not understand what you mean by positive 'A.' nor are we aware that Columbia turn out a 1½-volt cell with zinc half way round and a mixture of three ozs. sal-ammoniac. Do not know what you mean by 3 ozs. pint. We have had plenty of Columbia cells in pieces. The capacity of the Leclanche cell will depend on size and amount of elements submerged.

(3) "Does the ordinary house current come to a house on one a.c. wire and go away on the other, i.e. as per drawings? Does it come one wire, then travel back by the earth? Is the wire earthed at the power house or in the house?"

Answer: Advise you to read "Proving Radio," which treats the subject. Note: Query coupon is necessary.

F.J.S. (Marrickville West).—"Will you kindly advise me how to construct a one-valve receiving set?"

Answer: There is no room in queries columns for constructional articles, but many one-valve receivers have been published recently. The Countryman's One-valver is a good set, and can be made O.K. for suburban use by making the necessary adjustments treated in the article. If you have no copy of this, please advise, when we shall be pleased to insert a par. for you.

A.B. (North Sydney).—"I have just built a Reinartz Three but the different stations keep running into one another. Can you tell me what to do to remedy this defect?"

Answer: Try a .0001 fixed condenser in series with the aerial, and try moving the primary farther away from the secondary. Do not use too long an aerial. If these remedies do not make your set more selective, a wavetrap will probably be necessary.

(2) "Signals come through with plenty of volume, but are very indistinct, there being almost a roar when anybody is talking."

Answer: What type speaker are you using? Are the valves and transformers O.K.? Are you using more than 30 volts on the plate of the detector valve? Try a .002 fixed condenser across the secondary of the detector audio transformer.

(3) "I am unable to get interstate stations at all, and as this set is supposed to get interstate stations could you please explain the trouble?"

Answer: We still maintain that, for reliable reception of interstate stations, at least one stage of r.f. amplification is necessary. It may be possible for you to hear interstate stations on telephones at night only, or possibly at faint speaker strength, but this sort of reception is painful to listen to. Add a stage of r.f.

R.F.C. (Woollahra).—"Probably a loose or broken connection. Also try another grid leak. Test primary of first audio transformer, which may be faulty."

G.W.V.T. (Tookoomba).—A crystal receiver followed by two stages of audio was recently published in these columns.

QUERY COUPON

If you are in difficulties about reception or set-connection, let us know, and we will endeavor to set you right. Make your questions brief to the point, and, where possible, show lay-out and wiring diagram. 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, Box 23667 P.O., Sydney.
Please answer the accompanying queries in the most concise manner.
Your earliest convenience. I enclose this coupon in order to indicate that I am a bona-fide reader.

GENERAL: P.J.C. writes: "With a view of understanding to create increased interest in radio reception in Australia, I would suggest that listeners capable of obtaining reception from distant or foreign countries might be interested in WIRELESS WEEKLY a brief report of such reception, giving their names and addresses, class of receiver used, wavelength, and time of reception. By so doing, I feel certain that many people now at a loss for such information would readily avail themselves of the requirements so given, and soon become enabled to share in the very interesting and up-to-date information and amusement from other countries."

J.A.S. (Wagga Wagga).—Add R.F. stage as per Marco Four. Sorry can't confirm your reception of 2LO, London, on a broadcast set. It is very doubtful if this elementary receiver would give you such results. More likely it was an amateur whose call resembled 2LO, or it may have been the amateur 2LO, at North Sydney.

C.K. (Hurstville).—The Reinartz circuit has been published numerous times. Wind coils on a three-inch diameter former. Primary 15 turns. Space, 1/4-inch, and wind secondary, 47 turns. Without any space and with breaking wire wind another 25 turns for reaction. Use 24-gauge D.C.C. wire. You did not enclose a coupon.

D.R.G. (Jones' Island).—Results O.K. Station was probably 100W, 5SW is not coming in so well lately. Re tuning. Owing to resistance of 'phone and speaker cords, and to their capacity. Write just one extra page next time, and make a round twenty pages.

E.M. (Marriekville).—"I am having trouble with my Nilgost Two. When I first made the set it gave excellent results, not only locals coming in, but Inter-State too. It has only four turns on the plate of the detector valve, and the other end to the plate of the transformer. I did this because the other wires were only temporary. When I connected up again I could just hear local stations, and the further I plus down the 'B' batteries the better were the results I got."

Answer: You probably reversed the reaction connections.

DYNAMO (Newtown).—Reduce detector voltage and re-tune.

R.B.M. (Maroubra).—Yours is a good example of many other letters. Unless you state your requirements in detail, or narrow down for us, it is a difficult matter for us to help you. You asked us what "T1 and T2" were, and we advised you these symbols represented the transformers. In any case, the full information desired will be found in the article. Use parts specified.

J.M.D. (Tweed Heads).—We do not reply to queries by post. Particulars of a loop aerial were given at the heading of queries dated October 18. There is no known cure for natural fading.

V.K. (Victoria).—According to the latest "Radio News" (October) there is no station WCMR. However, there are a number of short wave stations on trans-Atlantic telephony. They are not listed.

F.H.C. (Newcastle).—Thanks for the information.

M.D.V. (Woodstock).—A.T.C. represents "Aerial Tuning Condenser." The symbol is seldom used now.

J.F. (Hurdwood).—"Please excuse small circuit, am in a hurry."

Answer:—Quite O.K. You made up for it by writing a long letter and not enclosing coupon.

(2) If you only adhered to specifications, you would get some results. The condensers are much too large. They could be used on the broadcast band, but you cannot expect to be able to get down on short waves. 15 metres! The circuit is a Reinartz, and your drawing was quite correct except that the r.f. choke will not be essential.

A.E.S.W. (Buderim Mountain).—Coil arrangement quite O.K. May be necessary to increase distance between primary and secondary if you strike dead spots in tuning. Coils O.K. Reason is that the capacity of the aerial is in series with the r.f. i.c. circuit. Capacities in series are smaller than the largest capacity, and in order that the r.f. i.c. circuit matches with the detector i.c. circuit it is necessary to use a greater number of turns.

L.A.D. (Tusmore).—"Is it possible for a Ford coil to supply power for a receiver?"

Answer:—No. The Ford coil would give an A.C. output of several thousand volts, but as soon as you tried to rectify this, and to apply a load, the voltage would drop seriously. The current, in any case, is very low, and owing to the sparking, interference would be tremendous.

G.C.W.T. (South Australia).—Another instance of a querist's requirements not plainly stated. "I asked through your paper on a recent occasion two queries"—Is a Radiokos shielded coil in order for the Marco Four? Answer given was "O.K." (2) "What would be the best aerial coil to use in connection with above?" Your answer was "Fifteen turns on 3in. former of 26-gauge wire." This is not quite clear. No doubt this is the primary coil in the r.f. stage of the Marco published the coil was 47 turns. Would the 15 turns be loose coupled to that? Further information would be very gratefully received."

Answer:—Even now your exact requirements are not plainly stated. It is presumed that you are in doubt as to the number of turns, or the number of the coils for the Marco. In case this is so, complete details for all the coils appear hereunder. Do not see, however, how you can use them if you intend using a Radiokos kit. You could buy a Radiokos Marco Four kit, or merely purchase the Reinartz kit, and make the other coils yourself. The aerial coil, about which you inquired, consists of 15 turns of 26-gauge wire on a three-inch diameter former. Quarter of an inch away wind the secondary, consisting of 24-gauge wire (D.C.C.)—47 turns. The

diameter of the former should be three inches. On another former of equal diameter, and about two inches long, wind the r.f. plate coil, about 25 turns. This coil has to be loose coupled to the detector secondary, which consists of 47 turns for the secondary itself, and a continuous winding without any spacing of 25 turns for the detector reaction coil. The aerial coil is loose-coupled to the r.f. secondary.

(2) "I should also like to ask if any advantage will be gained in placing 'C' bias on the r.f. stage of the set in question."

Answer:—External grid bias will not be necessary on the r.f. valve unless you are using screen grid valves, when it could be used to advantage.

GENERAL.—Mr. C.N. Darlinghurst, writes: "This letter has only one object—to report a discovery of mine which is of interest to all users of electric pickups. My pickup is one of the latest and most expensive models on the market. It is perfect in every way except one. When the volume control is turned down the tone becomes thin and reedy, loses color as a musician would say. In an effort to solve this difficulty I tried everything I could think of, electric filters, fibre needles, soundbox mutes, and so on without success. Everything except one! I had forgotten a lesson from my phonograph days. I had forgotten the Edison Bell Sympathetic Chromic needles. These needles are supplied with a grip which enables them to provide a volume of sound from a whisper to the equal of the loudest steel needle on the market, always with full tone color. By altering the grip I can now obtain a soft yet full and rounded tone. The only fault I can find with them is that they won't stand up to some of the loudest notes on a few records, but then neither will the steel needles, though they make a better job of it."

"COLMO" (Pleaton).—Mr. J. Martin, 48 St. Mark's Road, Wellington.

G.A. (Wellington).—Sarcastic remarks fed W.P.B. Genuine criticism appreciated. Queries answered below.

(1) "When I turn on the volume control an objectionable sizzling noise emanates from the speaker. It is not static. The batteries are at full charge."

Answer:—Depends on the connections to the volume control. If it is placed in one of the plate supply leads, as is often the case, it may be that the plate voltage increases above the desirable value. It is impossible to make useful suggestion without knowing connections.

(2) These are probably amateurs. The Waverley Radio Club can often be heard late in the evenings. The other station, higher in the band, may be 4GR. The Japanese station may stand up to some of the transmits anywhere near the wavelength, the nearest being JOKF on 353 metres.

"ELECTROCUTED" (Waverley).—"Using Renown Three with eliminator. I can't get outside Sydney Heads!"

Answer:—The eliminator may be faulty. Grid bias may not be correct for the voltage used. Voltages may be of wrong value. Does set get other stations with battery supply?

(2) "I have a corker for you next week."

Answer:—As long as you give as much detail as possible, and adhere to our oft repeated requests, we shall be pleased to assist.

F.W.K. (Glenfield).—"I am intending to construct the International two-valve receiver. You say: 'Put 22½ volts on the detector and 45 volts on the audio. How is this done?' Ever so dry battery I have bought has no 22½ volt tapping."

Answer:—Most "B" batteries have a 22½ volt tapping. Two 22½ volt or 30 volt batteries could be connected in series.

(3) Parts will be O.K.

C.A. (Queensland).—"The 'All Empire' short wave receiver was a 'Wireless Weekly' set. The coupling of the aerial coil may be varied for best results. The best coupling will depend on the length of aerial being used. If the receiver will not oscillate at any point it may be advisable to move the primary further away from the secondary. The arrangement as mentioned by you should be quite O.K."

D.K. (Brisbane).—Place a 1 mfd. condenser in series with the earth lead, or disconnect the lead from the end of the primary coil to the end of the secondary.

W.L. (Paddington). You referred to a diagram and a condenser (C3) which had been left out. Evidently you left the circuit out, too. Can't work an answer for you without it, and probably set won't work without condenser. Anyway, please repeat query when writing again. No circuit attached. No plinks on letter.

J.M.M. (Earlwood). This is a commercial set, and we do not know the circuit. If you care to describe the set to us we might be able to help.

J.S. (Erskineville). "In your issue August 30, 1929, you published the 'Simplest One Valve.' Would you please print a list of parts required for same, including batteries as Knob for midget condenser. One what is the cost of a wireless licence?"

Answer: One ebonite panel, 14 inches x 8 inches x 3/16 inch. One baseboard, 1/2 inch thick x 14 x 7 inches. One strip ebonite 3 inches x 1/2 inch. Two moulded top terminals engraved A and E. One midget condenser for reaction control. One 0.0005 mfd. variable condenser. One knob for midget condenser. One vernier dial. One S.C. jack. One 1 mfd. fixed condenser. One 3-inch diameter cardboard or Dilecto former. 1/4 lb. 24-gauge D.C.C. wire. One 0.0025 mfd. grid condenser with clips. One 2 megohm grid leak. One 500,000 ohm variable resistor for volume control. One .001 fixed condenser. One Braichstat to suit UX199 valve. One UX199 valve. One UX socket. One 45-volt "B" battery, four 1½-volt Columbia cells. The licence costs 2/4.

J.C. (Elizabeth Bay). "I have a one-valve with a hook on it."

Answer: Pull it off, you might get caught on it. Suppose you mean an amplifier. If not, what?

(2) "I am working a 40-valve "B" battery and a four-valve "A" wet battery."

Answer: Suppose you mean 40-volt "B" and four-volt accumulator "A."

(3) "It would be advisable to use a 90-valve "B" battery."

Answer: A 90-volt "B" battery would not be necessary, but would be an improvement as regards volume.

"Eliminator" (St. Peters): Yes, the voltage required are tapped. Shortwave set could be used.

(2) "What is the difference between a .00025 and .0001 fixed condenser?"

Answer: The same difference as there is between a can holding .00025 gallons and one holding .0001 gallons, i.e., the .00025 mfd. condenser has a greater capacity by .00015 mfd.

M.J.P. (Carlton).—Depends on area of plates, spacing, etc., but is probably a .001 mfd. Remove half the plates and double-space the remainder if this capacity is correct. Will then be .00025 mfd. You can find the capacity in mfd., by dividing the product of the area in square inches x 2.54 x 10⁸ by 36 x 10⁸ x distance between plates in inches by 2.54 by 100,000. The Countryman's One Valve cannot be used on short-waves without changing condensers and coils.

Dynamic (Newcastle).—"Many thanks for the information supplied through the columns of 'Wireless Weekly' of the previous issue covering the trouble I had with the operation of a Dynamic Speaker. As suggested by you, I reduced the plate voltage on the detector, and now find everything is O.K."

J.B. (Brisbane).—"A good shortwave two-valve set."

Answer: Thanks for briefness. "Wireless Weekly," October 18, 1929.

G.N. (Gordon).—"I am building the Reinartz four-valve receiver and would like to know if the circuit is O.K."

Answer: Nearly so. The neutralising condensers are unnecessary. The coil connected to B plus 60 volts should be cut right out, otherwise you will be blowing every valve in your set. See following remarks.

(2) "What is the difference, if any, between a four-valve Reinartz and a Marco Four?"

Answer: None whatever. You would, therefore, be advised to follow the Marco Four circuit. It has been published many times. If unable to obtain the circuit, write in again, but don't attempt to build up the r.f. stage, as shown on your sketch.

(3) "If I used a 'B' eliminator, would there be any change of wiring or valves?"

Answer: No changes whatsoever.

(4) "0.0025 mfd. fixed condenser be used as a grid condenser in place of the 0.0025?"

Answer: Yes, this can be used, but the 0.0025 mfd. condenser would probably be better. After all, it's only a matter of 2%.

(5) "Getting to know you well, I would like to find you're learning how to send in queries. With this co-operation there is less delay."

I.D.L. (Gnomally).—"I have just ruined three Philips valves A409 type by brushing the filament wire against the 22½-volt tapping of the 'B' battery. These valves were almost new, and they are not 'blown,' as they all work faintly in the audio position, but there are no goods in the detector socket. Is there any way of rejuvenating the detector?"

Answer: Try an ageing voltage, but no flashing voltage. To do this, leave the valves connected to a five-volt source for about half an hour, then connect up in the radio set, leaving the B battery disconnected for about an hour. If this treatment doesn't help much, the valves are probably beyond aid, but if they are bucked up considerably it will help. You have them on the lower ageing voltage a little longer, and you will spoil the results by testing the valves before they are properly aged.

(2) Probably owing to poor wiring, grid and plate leads, etc., or long plate waves. The noise mentioned may be a faulty transformer primary.

R.J.E. (Leeton).—"Approximately how many turns of No. 30 gauge enamelled wire are required on a two-inch diameter former to cover the 250-550 metre band, using a tuning condenser with a capacity of .0003 mfd?"

Answer: Primary about 26 turns. Secondary about 80 turns.

(2) "How many turns in reaction winding using same gauge wire and a Pilot midget 13-plate condenser?"

Answer: Approximately 45 turns. Spaced 1/4-inch from secondary.

N.A. (Liverpool).—Build the shortwave set published recently, leaving out the audio stage, i.e., take your 'phone connections from the plate of the detector valve and B plus detector tapping.

(2) "Would this set bring in Japan?"

Answer: A one-valve set is capable of receiving s.w. broadcasts from the big s.w. stations throughout the world, given favorable conditions.

(3) "I built the Extraordinary One. My log was 250, 260, 263, 2UE, 2KY, 2UV, 2ME, 2LO, 3AR, 3DE, 3UZ, 4QG, 5CL, 7L, 1VA, and 2VA."

Answer: Excellent reception, indeed. You are out of city bounds. It seems, however, you are getting confused between a shortwave and a broadcast receiver. When you ask if the two-valve receiver will get Japan. The shortwave receiver will only receive stations working under, say 100 metres, though by using larger coils and condensers the local stations and other stations on the broadcast band could be received on 'phones."

A.T. (Oatley).—Coils and condensers all wrong. Use a .0005 mfd. variable condenser. Primary 13 turns, secondary 47 turns, reaction 28 turns, 24 gauge wire, three-inch diameter former. Spacing between primary and secondary 1/4-inch. Coil 3/4-inch. A Bradeyohm 10-100 ohms resistor should be used in place of the rheostat, or, if you decide to use the rheostat, a .00025 mfd. variable condenser must be used in series with the plate of the valve to reaction coil-lead. If results are poor, try reversing connections to reaction coil.



IF IT'S A.C.

THEN IT MUST BE

RADIOTRON



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

AMPLION



AC7

WITH A BALANCED
ARMATURE UNIT...

£4

A GOOD LOUD SPEAKER

DISTRIBUTORS IN ALL STATES

AMPLION A/SIA LTD., 53-55 York Street, Sydney