

Wireless Weekly 3^d

INCORPORATING "RADIO IN AUSTRALIA & NEW ZEALAND"

VOL. 14. No. 16.

FRIDAY, OCTOBER 11, 1929.

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

More than
11,000,000
miles per minute!

More than 11,000,000 miles per minute—such is the speed of wireless—the medium that carries your messages thousands of miles over land and sea.

A.W.A. (A'sia.), Ltd., offer unrivalled facilities for your telegraphic traffic to Great Britain and Europe, North and South America, the Pacific Islands and Ships at sea.



16-PAGE
SUPPLEMENT
FREE
WITH THIS ISSUE

THE "W.W." RADIO
TROUBLE-FINDING
CHART

SELECTING POWER
VALVES



WIRELESS SERVICES

Australia's National Wireless Organization

BY AUTHORITY OF THE UNITED STATES GOVERNMENT

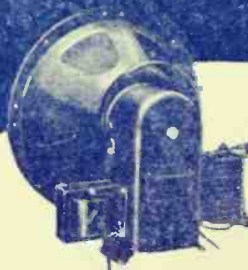
THERE IS
ONLY ONE
DYNAMIC
SPEAKER

MAGNAVOX

THE ORIGINAL

WITH THE CAN'T-BE-COPIED

REALISM



NEW X-CORE UNITS

With 7½in. and 10½in. Cones.
Lifetime Guarantee of Original
Performance.

Unit Prices: £5/15/- to £8/10/-.

THE United States of America Government Patent Office has granted to the Magnavox Company exclusive use of the word "DYNAMIC" in connection with radio loud speakers.

Patents may be infringed, trademarks may be borrowed, but performance quality cannot be copied. The making of a dynamic speaker is an exclusive art

which was started by the Magnavox Company in 1911 and carried on since that time.

Hear a Magnavox at the nearest Radio Dealer's.

Wholesale and Retail Magnavox Distributors:

MICK SIMMONS LTD.

HEADQUARTERS: HAYMARKET, SYDNEY.

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



Cabinet by Butler

4 RICH COLOURS TO
CHOOSE FROM

BUTLER'S genius has given to the Astor-Aladdin a wealth of beauty and an air of classical refinement not previously associated with radio. Console in style and wrought in antique figured-steel, in optional colours of Jade Green, Brown, Peacock Blue and Copper, the new Astor-Aladdin will enhance the most charming surroundings and harmonise with any colour scheme.

The new Astor-Aladdin is auto-electric and completely self-contained. No aerial, no wires, no batteries—no muddle to mar the charm of a tidy room. Automatically operates in any room, direct from power or light socket. Solo-dial control is arm-chair high. Programmes can be selected as you lie relaxed in your favourite chair. The New Tone and new volume-control provides a new conception of radio enjoyment. New Triplex Junction

ensures razor-edge selectivity. New panel "Phono" control for phonograph-radio reproduction. Current consumption less than that of extra light. 12 months' guarantee. Price 35 gns. absolutely complete. Nothing extra to buy. Terms are easier and lower than for any ordinary radio set on the market. Weekly payments from 9/6 to 14/3 weekly. Deposit from

The NEW

£3:15

ASTOR=ALADDIN

AUTO-ELECTRIC
Super Radio

With the Magical New
Philips' Wonder Valves

There's an Astor Set
for Every Purse.

See and Hear it

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

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

SERVICE !!

PRICE'S—A Firm of SEVEN years' straight-forward dealing in

RADIO

Parts and Receivers and making

SERVICE

its watchword.

IS there any better combination for a Firm Name? No other Firm incorporates SERVICE in its Designation, but we considered that SERVICE should play a major part in the retailing of all Radio Material and Receivers—that's why we have been on the Radio Map since 1922.

Philips "B" & "C" Eliminator

Usually	£8/15/-
NOW	£7/15/-

4mf. 1000 Tested Condensers

Usually	8/6
NOW	6/6

Philips Trickle Charger

Usually	£3/10/-
NOW	£2/15/-

2mf. Hydra Fixed Condensers

Usually	4/6
NOW	3/6

Hoosic 30 Ohm Bakelite Rheostats

Usually	3/-
NOW	2/-

Tefag Adjustable Diaphragm 4000 Ohm Headphones

Usually	17/6
NOW	12/6

Silvertone Cone Speakers	32/6	Carborundum Crystal Detectors ...	8/6
50ft. Tipped Speaker Cords	4/3	Bronze Aerial Wire, 100ft.	2/6
30ft. Tipped Speaker Cords	3/3	7/22 Enamel Aerial, 100ft.	4/3
20ft. Tipped Speaker Cords	2/3	Blue-Spot Pick-up	47/6
Jefferson Bell Transformers	10/-	Record Bell Transformer	7/6
Amplion Moulded Cones	5/9	660 Cone Paper	1/9, 2/9
Six-Sixty Cone Units	12/6	Cone Washers, pair	/3
0-12, 0-120 volt Meter	10/6	Beede 50 volt meter	3/6
Beede Accumulator Tester	3/-	Marvel Hydrometers	3/6
16g. Celatsite Wire, 30in.	/2	Round Nose Pliers	1/6
N.P. Side Cutters	1/9	Extra Long Nose Pliers	2/3
Long Nose Angle Pliers	2/3	Monarch Transformers	15/6
Brandes Matched Tone Phones ...	19/6	Alligator Battery Clips	/3

CROSSWORD PUZZLE WINNERS

Miss Edith Adcock, 30 O'Connell St., Sydney; Mr. J. P. Kerin, Reid St., Kangaroo Point, Brisbane; Mr. C. J. Davis, Pokolbin Rd., Cessnock; Mr. A. E. Behrmann, 47 Union St., Pyrmont; Mr. S. J. Cochrane, 93 Victoria St., Grafton. Open Orders on Price's Radio Service have been forwarded to the winners.

PRICE'S RADIO SERVICE,

WINGELLO HOUSE, ANGEL PLACE, SYDNEY.

City Agents for
Johnson Outboard Motors.

Box 3326PP, G.P.O.

Wireless Weekly

Incorporating 'Radio in Australia & New Zealand'

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

Effects in Radio plays



It is obvious to anyone who has listened in to the broadcast description of a wrestling match that the sound which keys the listener to a pitch of wild excitement is not the announcer's graphic description—the "Yes, he is!" "No, he isn't!" which the tension of the moment calls for, but the low murmur of the audience in the background of sound, which emphasises the fluctuations of the struggle. The chorus of fierce, subdued cries, the sharp scream of the nervous woman, the hoarse mutter of the crowd, makes the listener one of the spectators, and brings to his eyes the lighted ringside and the struggling men.

Since radio plays were first put on the air there has been a constant striving for correct "effects." The radio-playwright, working purely on the hearing imaginations of his audience, must replace the scenery of the stage-play with a background of sound, and the action of the stage-play with sounds and dialogue suggestive of action. The production of these effects is very difficult. Firstly, it must be decided where they can be used or where they should be used to illustrate the action of the play; then the producers must experiment with various kinds of instruments until they get the sound required.

Production methods have now advanced considerably, and it is possible to reproduce almost any kind of effect, from a railway smash to the murmuring of waves on the shore at evening. This widening of the scope for effects makes possible the presentation of radio plays of far broader outlines than ever before; the only thing is to get people to write plays in which provision is made for the use of more and more of the new effects. It is pleasing to hear that even now many people, many of them Australians, are writing radio plays with this special object in view.

The methods by which effects are gained are interesting, and even amusing. It is a peculiar fact that the microphone scarcely ever reproduces noise—as distinguished from sound—exactly. The noises which, in the

studio, are most effective, are totally changed when they come out through the loud-speaker in the control room. The smallest instruments sometimes reproduce natural effects of gigantic proportions. A glass of water, with a plunger, can do wonderful things over the air. With a glass of water and a plunger you can give a dramatic rendering of a high dive, or of a ship rolling in heavy seas, or of a terrific rain storm, or of a giant waterfall.

The common or garden bunch of keys, rattled in front of the microphone, will produce a whole host of effects, the difference of which is dependent on the volume control in the control room.

The most unusual effect produced was when a certain play required a man in heavy armor to walk across the castle floor.

Six hours were wasted trying to reproduce the noise from large props, when finally some one pulled out a bunch of keys and rattled them before the microphone. One of the control room men ran in, saying "That was it! The last one!" They looked at each other in blank amazement. No one, for a moment, seemed to know what had happened. The keys were again produced and again rattled. There was glory for you! A mere five keys on a little silver-plated ring properly rattled would make even the

most sceptical critic actually see through his sense of hearing the knight of the old days crashing his way across the castle floors.

Galloping horses can be imitated with a kettledrum and a coconut shell; the knock of the dying woman on the door at midnight is produced on the back of a chair; an iron nut, knocked on a piece of porcelain, reproduces perfectly the sound of a tea-cup being replaced on its saucer—all these effects are gained through constant experiment with likely instruments. It is amusing to sit in the studio while these effects are being produced. You may see one man industriously pouring water from one tumbler to another in front of the microphone, while a little way back another man stands with two pieces of hard wood, waiting till the time comes to clash them together for a "pistol-shot" effect. In the far corner, perhaps, another man is waiting for the time to turn on the gramophone, the music of which is taken on a separate wire, and used as a "background" for the play. And all the time the players speak dramatically through the microphone.

Special staffs to operate sound effects are on hand at all the big studios on the Continent, in England, and in America. At 2FC, Sydney, there is also a staff keenly interested in the production of "effects," and a great quantity of odds and ends have been gathered together, since the station's inception, into a kind of "effects library," from which it is possible to produce almost any effect or combination of effects.

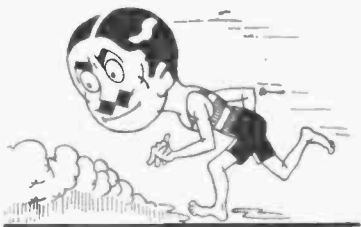
Elaborate effects were presented on a recent Wednesday evening. In the "Garden of Buddha" the dreamy throb of tom-toms supplied a background to an Eastern setting; and, in "The Cry in the Night," a pistol-shot will be heard before the excited words, "I've got him! I saw him silhouetted against the moonlight!"

ELECTION RESULTS

To tune in the election results on Saturday night turn to pages 28, 29, 30, where a table of the electorates and candidates is published in correct order. The polling figures will be broadcast by Mr. H. P. Williams from the Tally Room of the G.P.O., Sydney, beginning at 9.0 and continuing at intervals until 2.0. The results will be announced in the order shown.

BETWEEN YOU AND ME AND THE MICROPHONE

AS we came over in our boat, our ferry-boat, this morning, summer was in the air. It was an early, or business, boat; and the hordes of business men—big, all-round, little, and middle men—were without their overcoats. The air was heavy and thick and warm and sluggish, as though it had stayed up all night over the punch-bowl; and everyone was talking about last night, which had been remarkably warm or mild, however you like to put it. The girls' frocks indicated grave doubts and many hesitations, not being altogether of Summer or Winter, but mostly of Winter with little bits left off here and there. We noticed, with something like a shock of pleasure, that the man who used to go over every morning a month or so ago in a shabby old overcoat has a new suit of grey with fine purple stripings, and suppose he has been doing better with his manuscripts. At least, we think they were manuscripts. They



looked like manuscripts. He used to carry them in a very old portfolio, under his arm; and he had a very disappointed mouth. We would be disappointed if they were not manuscripts. We raised our hat to a girl we know, instead of pretending not to see her, or looking fixedly across the cabin, or earnestly following the curving flights of seagulls, as was usual. Seagulls.

The beach curves miles away into the shimmering haze over the headlands, yellow and sparkling and edged with foam. The sunlight burns brilliantly through cool sea breezes, carrying the boom and roll and flowing surge of blue waters and the cries and laughter of bathers; and over everything is the bright blue sky, and the shrill screech of circling gulls. Etcetera, etcetera.

And, even though we may have to miss a Wurlitzer or so, or a Musical Reproduction On The Radio Metre, we shall be there this summer, Mr. Doyle.

Talking about screeching seagulls, these sopranos . . .

*Birds cen thee stoojo ael diey lornj
Seenging to mee theirr halpee song—
Sorngruv thee sunshine weend un
jeio—
Wahrt a Wurlitzery hullabaloo!*

A.B.C. Players in rehearsal: Short flashes of next week's releases—"The Jazz

Garter," "King of the Underworld":—"Ah! I have you in my clutching hands at last, curse me! Har! You beast! You Vagabond! You see?—My good right hand drips red with blood! Berlud! See it! Smell it! Hear it! YOUR Blood—don't faint! Don't close your eyes! Don't die, for heaven's sake—I warn't ta see you squirrerrrr, you . . .!"

The sexual "Gernie Appleblossom" (Adagio Tendrisse):—

"Darling! They have hurt you! Say they haven't hurt you! They cannot have hurt you! They MUST NOT have hurt you! Oh, my darling; and we were just—just . . . SO happy, dear! (resolute expressivo). But you must be brave, my darling! You must wait for me—I have no time to spare. I have to go out and hold up the Southern Express, and put a stop to the activities of the Western Army by coagulating with the Northern Front! Until then, beloved . . ."

The IMPOSSIBLE "BUD" BLUDYN-BRISKET, late Y.M.C.A. (Spiritoso con-fuoco):—

"Aha, my men! Aha, I say! Aha! We must do something about this! Aha! Have I not the lean jaw and long nose and piercing eye of the typical man of my type? Let me lead you—me who have led an hundred thousand men to victory, where Hell has risen and displaced the meadowlands—me, who have never been seen to blanch in the face of the foe! Onwards, and let us kill or be killed by this disgraceful underworld, shouting the name of the Gernie Appleblossom, fighting or dying! Aha! Aha! Aha!"

Don't that stir your blood? We're pretty good at publicity, although we wouldn't like anybody to know we stoop

HOW CLEVER WE ARE! (As one of the gentlemen joked about in this page



remarked the other day, with a supercilious sniff and an unprejudiced comment that we aren't as good as we used to be.)

It has been repeatedly asserted, on we know not what authority, that the Australian Broadcasting Company, Limited, is supplying the broadcasting programmes for the National Broadcasting Services of

the Commonwealth Government of Australia.

Everyone is up in arms about what Roy did to Miss Goddie Reeve in our last issue—that futurist caricature, you know.



They all say: It's a piece of sheer wickedness—that's what it is; it's not like her a bit; it's not a photograph; it's not a drawing; and it's not even a caricature. Eric Bessemer said: "You, at least, expect a caricaturist to be able to draw his subject's features correctly, even if he does exaggerate them or make fun of them." To which we replied from the depths of our heart that Eric Bessemer didn't know as much about caricaturists as we do. And, at any rate, it was a futuristic or cubist caricature; and the essence of futuristic or cubist caricatures is that you shouldn't be able to tell who they are meant to be, or to understand what they are meant to express; or, if you are able to do this, you shouldn't be able to repeat it in respectable company. In fact, cubism or futurism is a very interesting subject; and, as everyone over sixty or under nineteen is entitled to make a statement of opinion about it, we contribute the following essay—

ON CUB-FUTUR-ISM

The above ism is the result of before the war plus after the war, tinged with polite insanity and framed in cynicism.

It was produced, for the sake of novelty, by the Continental schools of . . . (look it up in the "Herald") and of . . . (see the 1922 May issue of the "Arty Dilletante"). It was an entire novelty at the time of its production, as no one had ever seen anything like it before; but since then it has lost much of its earning capacity as the result of heavy competition.

It became popular through the publicity given to it by foolish critics, who, not being able to understand and praise what is good, make money and a local habitation and a name by cursing what even their limited mentalities can recognise as bad.

Its chief characteristic, as we hinted before, is that it doesn't mean anything. No one can possibly understand it.

Its closest parallel in the broadcasting world is a soprano.

James

Wavelengths
 are wanted

DEVIATIONS		EUROPEAN	
Station	Kc	Station	Kc
250.9 Scharbeek (Brussels) (Belgium)	546.1	385 Genoa (GE) (Italy), 1 kw	377
Malmar, 0.4 kw. (relays Stockholm)	549.3	385 Wlno (Poland), 0.5 kw	381
Saffic, 0.4 kw. (relays Stockholm)	549.3	381 Toulouse (Radio), (France) kw	377
Eakilstuna (Sweden), 0.2 kw. (relays Stockholm)	549.3	377 Lanchester (2ZY) (Gt. Britain) 1 kw	377
Jakobstad (Finland), 0.1 kw	549.3	377 Hamburg (Germany), 2 kw	377
Lina (Austria), 0.1 kw	549.3	377 Lille LL (France), 2 kw	377
Kiel (Germany), 0.1 kw	549.3	377 Avillo (Union Radio) (E. Spain), 1.5 kw	377
Cassel, 0.5 kw. (relays Frankfurt)	549.3	377 Bergen (Norway), 1 kw	377
Kiruna (Sweden), 0.1 kw	549.3	377 London (2LO) (Gt. Britain) 2 kw	377
Boden (Germany), 0.1 kw	549.3	377 Graz (Austria) (usually re Vienna), 7 kw	377
Caragena (Spain), 0.1 kw	549.3	377 Algiers (Algeria), 1 kw	377
Beifast (2B) (Ireland), 1 kw	549.3	377 Leningrad (USSR), 0.2 kw	377
Nimes (France), 1 kw	549.3	377 Barcelons (Radio Barcel (E.A.) (Spain), 8 kw	377
Nürnberg (Germany), (relays Munich), 0.1 kw	549.3	377 Strassburg (France), 0.1 kw	377
Bordeaux (France), 0.1 kw	549.3	377 Brno (Czechoslovakia), 1 kw	377
Tun-les-Bains (France), 0.1 kw	549.3	377 Bremen (Germany) (Hamburg), 0.2 kw	377
Orrebro (Sweden), 0.1 kw	549.3	377 Paris (Petit Parisien) (France), 0.5 kw	377
Münster (Germany), 0.5 kw	549.3	377 Cadix (Spain), 0.5 kw	377
Boras (relays Göteborg) (Sweden), 0.1 kw	549.3	377 Posen (Poland), 1.2 kw	377
Umea (Sweden), 0.2 kw	549.3	377 Naples (rNA) (Italy), 1.5 kw	377
Malmö (Sweden), 0.6 kw	549.3	377 Montpelier (France), 0.2 kw	377
Hälsingborg (Sweden), 0.2 kw	549.3	377 Falun (Sweden), 0.5 kw	377
Diarriz (Côte d'Argent, France) 1.5 kw	549.3	377 Götewik (Sweden), 10 kw	377
Cologne (Germany), 2 kw	549.3	377 Dresden (Germany), 0.2 kw	377
Cork (6CK) (Ireland), 1 kw	549.3	377 Marseilles (PTT) (France) kw	377
Helsingfors (Finland), 0.0 kw	549.3	377 Oviedo (Spain) kw	377
Karlstad (Sweden), 0.25 kw	549.3	377 Ordrift kw	377
Flensburg (Germany), 0.5 kw	549.3		

In the United States there are over 650 broadcasting stations operating in a territory about the same size as the Commonwealth of Australia. In Europe there are about 150 stations. In Australia we have 20 stations, without including the amateur stations, which broadcast at irregular intervals. When will we have in Australia a number of stations having some relation to area and population equal to that existing in the United States?

Economic Factor

To answer that question it is necessary to take into consideration facts relating to the settlement of population and the economic situation so far as it would justify the establishment of stations whose owners would rely on revenue for the maintenance of their services. In America listeners do not pay any listening fees. Stations are opened by organisations and firms seeking publicity in some form or other. Very few of the stations apparently are established with the object of obtaining direct revenue. Therefore, the only limitation to the number of stations, apart from the Government's restriction in licensing, is the number of wavelengths that can be used simultaneously. In Europe also the scarcity of wavelengths is the principal means of holding back the establishment of a station in every city and town.

Australia is in a much better position than either America or Europe in regard to wavelengths, because we have no nearby countries competing with us in the race to get on the air, or, in other words, the scramble for wavelength channels. Consequently, he should actually be able to have more stations in Australia than in the United States, if consideration were given only to the number of channels that can be set aside for broadcasting.

The number of channels is definitely limited. Owing to the fact that, in accordance with international laws, broadcasting services must be conducted on wavelengths between 200 and 545 metres, a definite limitation is fixed to the number of stations that can operate simultaneously without interference, unless a majority of them are of very

By H. W. JOHNSON

low power, and separated geographically by many hundreds of miles.

The width of a broadcasting channel cannot be safely expressed in terms of wavelength; the only reliable method of determining the number of channels is in terms of frequency. It is accepted that, for the transmission of music, the channel must be at least 10,000 cycles wide, or, as it is more usually designated, 10 kilocycles wide. Now, as an indication of the way in which we can be misled, if we consider wavelengths rather than frequencies, let us glance at some of the possibilities. Between 100 and 200 metres there are 160 ten-kilocycle channels; between 400 and 500 metres there are only 15 similar channels, and between 500 and 600 metres only 10 channels.

As already stated, the accepted band of wavelengths for broadcasting is between 200 and 545 metres, or, in other words, between 1500 and 550 kilocycles. That represents 95 channels, each 10 kilocycles wide.

Sydney Station Channels

Is a 10-kilocycle channel sufficient for broadcast purposes? Let us see what the condition is in Sydney to-day, where there are six stations, the wavelengths and frequencies of which are as follow:—

2UW	....	267 metres	1125 kilocycles
2KY	....	280 metres	1070 kilocycles
2UE	....	293 metres	1024 kilocycles
2GB	....	316 metres	949 kilocycles
2BL	....	353 metres	850 kilocycles
2FC	....	451 metres	665 kilocycles

The separation in kilocycles between those stations is shown as follows—
55, 46, 75, 99, and 185.

That separation is reasonably in keeping with the standard which has been adopted in the United States for some time past, which provides for a 50-kilocycle separation between the stations in the same city. The separation between stations which are not in the same neighborhood can be less than 50 kilocycles, as, for instance, between 2BL and 3LO, the separation is 40 kilocycles. Many thousands experience difficulty in tuning in

3LO with that separation, but the difficulties are confined mainly to receivers situated near 2BL. It is a well-known fact that even selective receivers do not perform as satisfactorily when they are within a few miles of a powerful station as they do in locations more than, say, 20 miles from a fairly powerful station, such as a station of 5 kw. The basic separation of 10 kilocycles between the carrier wavelengths of broadcasting stations is not entirely satisfactory.

Heterodyne Whistle

As already mentioned, the minimum width for a broadcast transmission is 10 kilocycles, and if the spectrum is split up into sections of 10 kilocycles, neighboring stations in the spectrum will tend to overlap one another. The effect is the well-known heterodyne whistle, which cannot be prevented even if the stations maintain their wavelength with a good degree of constancy. It is only necessary to work on such a close separation when there is a greater demand for channels than can be fitted into the number available.

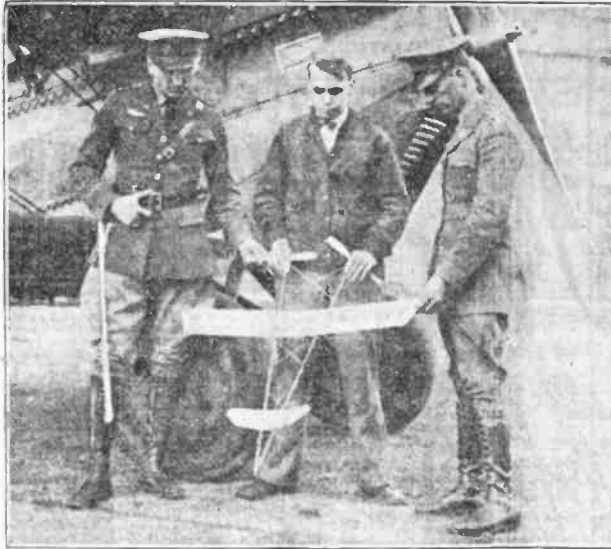
It is interesting to note the historical development of wavelength distribution. In 1923 a conference was held in Washington, attended by the various broadcasting interests of the United States. Among other things, it was determined that stations should have a minimum separation of 10 kilocycles, and that the wavelengths should be between 200 and 550 metres. The reasons for selecting that particular band of wavelengths for broadcasting has never been fully explained, but it appears to have been influenced by two considerations. First, the fact that, as broadcasting was then an outcome of amateur transmissions, which had been centred round 360 metres, the transmitters and the receivers were designed for maximum efficiency in the band of wavelengths in that neighborhood. The second consideration was the fact that broadcasting transmissions could not be conducted on higher wavelengths than 550 metres owing to the interference that would be caused to code transmissions between ships and shore stations. The ship transmissions on spark equipment were necessarily of broad tuning, and although

600 metres was the wavelength for ship working it was necessary to maintain an uninterrupted overlap of about 50 metres on either side of 600 metres. The necessity for such broad tuning on ship transmissions was maintained so that, in the event of a distress call being sent out, a greater chance of the message being received by a number of stations was guaranteed. If the signal were made on a transmitter of sharper tuning fewer ships would be likely to intercept the message.

In 1926 the European broadcasting organisations established an unofficial authority at Geneva, and a plan of wavelengths, known as the Geneva plan, was adopted. It was based on a minimum separation of 10 kilocycles, but the wave range was not confined to 200-550 metres as there were already several stations, particularly in Germany and Russia, operating on wavelengths well above 1000 metres.

The International Radio Conference, held in Washington in 1927, was attended by all nations, and the decisions arrived at carried Governmental authority in all countries. Among other things it was decided that the wavelength for broadcasting should be 200-545 metres, or, expressed in frequency, 1500-550 kilocycles. The wavelength of 220 metres (1360 kilocycles) was reserved for certain ship transmissions, and in Europe it was agreed that existing long-wave broadcasting stations should be allowed to continue the use of long wavelengths, but that additional long-wave stations should not be established. This was the first official world recognition of a particular band of wavelengths for broadcasting, and that condition still exists.

In 1928 the broadcasting companies' unofficial organisation at Geneva revised their plan of wavelengths somewhat; the new plan being called the Brussels plan, which differed slightly from the Geneva plan; the main difference being the allotment to each European country of a certain number of wavelengths. For instance, Great Britain was allowed only nine exclusive wavelengths, and



Flying officers showing a keen interest in a model twin pusher.

one wavelength to be shared with other countries.

Recently another conference was held at Prague by the European broadcasting organisations, from which comes the latest plan, the Prague plan of wavelengths. The most interesting aspect of that scheme is the fact that the short wavelengths, i.e., between 200 and 545 metres, are separated only by 9 kilocycles, so as to permit of an increase in the number of stations that can be accommodated in the normal spectrum. Just how the stations are to work satisfactorily on a channel of 9 kilocycles without mutual interference is difficult to see, unless the stations are going to be of small power, and separated by hundreds of miles. Even then at night there is likely to be heterodyne interference.

Recent advices from America show that some manufacturers are contemplating the construction of receivers capable of an 8 kilocycle separation. The effect of such a scheme would be to cut off the side-bands of transmissions. That would not be serious, except

in certain cases of musical transmissions, including orchestral numbers, but the possibility of interference between stations if they were so separated would be serious unless the wavelength were maintained with maximum reliability.

A great deal of attention is being given now in Europe and America to the possibility of using the same wavelength for a number of stations. In England a number of low-powered stations are operated on 288.5 metres, and experiments are being carried out in America with the object of synchronising the wavelengths of two or more stations. Those stations, of course, will be separated widely in mileage, and the best means of effecting frequency synchronisation has not been finally decided. The most popular method appears to be the installation of crystal control or some other method of controlling the frequency of each station, so that the wavelength will not wander off the assignment. Any slight

wandering or shifting of the wavelength would result in distorted reception throughout considerable areas of the territory served by the stations. Another method of making the best use of the available wavelengths is the sharing plan, i.e., two or more stations having the same wavelength, but operating during different hours. That method is adopted to a great extent in the United States, and is one of the reasons why such a large number of stations can be operated.

In Australia the need for such close attention to the distribution of wavelengths is not as serious as in America or Europe, but sooner or later it will be necessary to make the best use of the channels that are available. We may thus expect to find some stations using the same wavelength either by sharing the time or by using a comparatively low power on stations separated by distances over 500 miles.

BROADCASTING AND THE MUSIC CLUB MOVEMENT

By OLIVER KING

THESE have always been many decided views expressed over the question of the benefit or otherwise derived from the broadcasting of concerts to those responsible for organising them, and one frequently hears that broadcasting is detrimental to concerts. As it is always the complaining voice that is heard the loudest, I desire to express the voice of contentment.

As one interested in the broadcasting of Music Club programmes, my experience has been that on the evenings that the club has been broadcast the attendances have been the largest. Some may attribute the cause to the broadcasting announcement in the morning press; that it is a final reminder to be present at the club musicale. While this may be true to a certain degree, I believe that the members like to be present to form part of the audience of the club that is being put over the air.

Members who have on occasion stayed home and "listened-in" to the programme have expressed the feeling of having missed the association of the members, and have felt "out of it," and that on broadcast evenings they desire to be at the club. As a matter of fact, not only have we actually secured new members through its medium, but we are convinced that it has been largely instrumental in putting the Music Club movement on the map.



Mr. King is founder and president of the Music Club movement.

The Music Club reunion on October 21 at the Conservatorium is being broadcast, for we desire country people to feel that they need the Music Club in their midst. General public will be admitted to this reunion, and I am not afraid of announcing the fact of the broadcast on account of people staying away in consequence. On the contrary, I believe people will want to come along to see for themselves what this new movement is that has so captivated the residents of the various communities.

It is significant that 90 per cent. of concert organisations either desire to be, or actually are, successful in enlisting the services of the broadcasting companies for the purpose of broadcasting, and it is quite feasible to suppose that the majority of the public would be sufficiently intrigued to want to see in person the artists who are giving so much pleasure to the listeners.

In conclusion, I would like to suggest that the advantages of Music Club broadcasting are essentially mutual, as the audience supplies just that extra little personal intimate touch that the studio transmission, however well presented, cannot in the very nature of things achieve.

WORTH TUNING-IN

Outstanding features in next week's programmes—Spring Race Broadcasts—Concert Parties—Maori Opera—N.S. Bridge Talks—Shaw Play.

NEXT Tuesday, during the Children's Session from 2FC, Aunt Willa will produce "Under the Sea," a musical play for children; lyrics and dialogue by Jessie Mae Jewit, music by Evelyn Haydn. Cousins Clarice and Gwen, and Aunt Willa's sister, Norma, and brother Teddy will take part.

THERE will be two extra special outside shows broadcast this week; one under the direction of Mr. Charles Lawrence, the other directed by Mr. W. E. Lewis.



Mr. Lawrence will take a concert party—Frank Ryan, Maggie Poster, R. A. Bartleman, Carlton Fay, and Amy Ostinga—to the Lady Davidson Home, Turramurra, on Wednesday. The resulting disturbance will be broadcast through 2BL.

MR. LAWRENCE.

Mr. Lewis will take his concert party—Louise Homfrey, Carlton Fay, Bert Gilbert, Rene Rich, Rae Foster, and the Two Old Cronies—to Liverpool Camp on Thursday. 2FC listeners will hear all about it between 8 and 9.30.

PLEASE take no notice of the notice which appeared last week saying that Mr. Baeyertz would tell dialect stories from 2FC at 9.5 p.m. on Fridays. He won't. He will tell dialect stories from 2FC on Wednesdays instead.

He will speak early in the evening, but the time is not yet certain, and he will do this for four evenings—October 16, 23, 30, and November 6. He will tell stories in the dialects of many nations; and they will be mostly humorous; and there will be plenty of stories each evening.

TO satisfy the thirst for information in regard to the progress of the Bridge building, the Australian Broadcasting Company, Limited, is preparing several talks, describing some of the most vital and interesting phases of the great work.

The first of these will take place from the Bridge itself on Sunday afternoon, October 20, when Dr. Bradfield, Messrs. C. R. Hall, and Norman Lyons will talk on various phases of the Bridge itself.

On Wednesday, October 30, a second talk will be given from the works of Messrs. Dorman, Long, and Company, on the northern end of the Bridge, when the same speakers will convey to the public some idea of what is actually being done in preparation for the completion of the Bridge building.

One of the advantages to accrue under the National Broadcasting Service, as the result of co-operation between the A.B.O., Ltd., and the Postmaster-General's Department, will be an excellent service of inter-State racing descriptions. All the big handicap races and the classic weight-for-age events will be relayed between Melbourne and Sydney, and the following races will be heard this season by listeners within New South Wales when relayed from 3LO Melbourne through 2FC Sydney:—

V.A.T.C. races at Caulfield Saturday, October 12: Debutant Stakes, 4 furlongs; Caulfield Guineas, 1 mile; Caulfield Stakes, 9 furlongs; Toorak Handicap, 1 mile.

V.A.T.C. races, at Caulfield, Wednesday, October 16: Herbert Power Stakes, 1 mile 3 furlongs; Coongy Handicap, 1 mile 3 furlongs.

V.A.T.C. races, at Caulfield, Saturday, October 19; Caulfield Cup, 1½ miles; Windsor Handicap, 6 furlongs.

Moonee Valley Gold Cup Meeting, Saturday, October 26: W. S. Cox Plate, 9½ furlongs; Moonee Valley Gold Cup, 1 mile 3½ furlongs.

V.R.C. races, at Flemington, Saturday, November 2: Maribyrnong Plate, 5 furlongs; Melbourne Stakes, 1½ miles; Victoria Derby, 1½ miles; Cantala Stakes, 1 mile; Hotham Handicap, 1½ miles.

V.R.C. Races, at Flemington, Tuesday, November 5: Melbourne Cup, 2 miles.

V.R.C. races, at Flemington, Thursday, November 7: Lintithgou Stakes, 1 mile; Oaks Stakes, 1½ miles.

V.R.C. races, at Flemington, Saturday, November 9: Batman Stakes, 1 mile; O.B. Fisher Stakes, 1½ miles; V.R.C. Handicap, 1½ miles.

Williamstown Racing Club's Cup meeting, Monday, November 11: Williamstown Cup, 1½ miles.

NEXT Sunday, at 5.10 in the afternoon, from 2FC, Mr. C. N. Baeyertz will continue his "Modern Philosophy" series with a talk on Voltaire.

Voltaire's "Candide" has survived for popular appreciation, largely, as is usual with works on philosophy, on account of its shifty dexterity of wit, and the mastery of idea-juggling, which makes George Bernard Shaw good reading for the first time.

Voltaire himself seems to have been something of an intellectual monkey, with the soul of an imp and the mind capacity of a thousand or so present-day University professors.

He died on his way from Geneva to Paris to see his tragedy, "Irene," performed; he was excited about it, for some reason or other. Strachey says we wouldn't see much exciting about it. Anyhow, all these details are probably wrong; you'd better listen in to Mr. Baeyertz.

BY incorporating the warrior choruses and tribal songs into "Teora," Alfred Hill only follows the precedent of Leoncavallo, who based "Il Pagliacci" on Italian peasant tunes, and many other composers who have used simple folk-songs as the background for the elevated themes of Grand Opera.

The plot concerns a Maori chief, Tanui, who defeats and slays an enemy and makes a flute from his arm-bone. When he plays this flute he seems to hear the voice of his enemy. His son, Waipata, has been sent to make prisoner Teora, the daughter of the dead chief.

He falls in love with her, but when he returns with the girl to his father, Tanui accuses her of bewitching his flute. She is put to the test, and vindicates her innocence. Tanui attempts to play the flute, but, on hearing the voice of the dead man once more, he is overcome with horror and remorse, and expires in a fit of terror. The opera closes with the love theme rising triumphant.

A powerful contrast is supplied by the dignity and passion of the first part and the close and the middle section with its softer love songs and the dramatic trial scene.

The weird melodies of the flute have a haunting rhythm that is characteristic of the Maori chant, and this is used with great effect throughout.

The same company that made so great a success of "Teora" on the occasion when it was first performed in the Turret Theatre will broadcast the opera on October 14 from 2BL.

Miss May Craven will take the part of Teora. Harold Tollemache will be Tanui, the chief, Rupert Swallow will play the part of Tanui's son, Waipata, with Wilfred Thomas as Tohunga, the mediator. John Ryan will sing the part of The Spirit of the Flute. The performance will be conducted by the producer, Joseph Post, who was responsible for the original staging of "Teora."

NEXT Thursday, at 9.30 p.m., from 2BL, the University Players will present Mr. Bernard Shaw's "Votes for Women," a sparkling short play in the dramatist's best style, which, although it deals with the suffragette nonsense of some years ago, still holds interest.

ON October 11, from 9.15 till 10.15, through 2FC, relayed from 3LO, Melbourne, a fine programme of military band music will be presented, when the 59th Battalion Band will be heard to advantage in several descriptive nautical numbers.



MR. SHAW.

VIOLET ELLIOTT, the well-known comedy actress, will broadcast from 2FC on October 15.

She will sing some of the old numbers, which assisted to make her popular. Among them will be, "Oh, by Jingo," which she was the first to sing in Australia.

MR. ALLEN E. MARTIN, banjoist, plays with his finger-tips, and does not use the usual plectrum or thimble. Mr. Martin will make his first broadcast appearance through 2FC on Tuesday, October 15, when he will feature novel banjo solos.

ORIGINALITY is the feature of the well-known pair who hide their identity under the name of Wendling and Molloy. They are both expert performers on a number of instruments, including the "mello-piano."

This is a very musical and novel feature of their performance, and has always been very popular with audiences before whom they have played. Wendling and Molloy will broadcast from 2BL on Saturday, October 12.

ON October 23 Mr. Michael Sawtell will deliver an interesting talk on "The Philosophy of a Vagabond" from 2FC. Mr. Sawtell, member of a well-known South Australian family, was educated at St. Peter's College, Adelaide. At an early age he ran away to the bush, and was for many years droving cattle, cattle raising, and prospecting in Queensland, the Northern Territory, and Kimberley.

For a few years he lived amongst the wild natives, near the Yamba Sound country on the Kimberley coast. Coming back to city life, Mr. Sawtell went into business, at the same time devoting portion of his leisure to lecturing and writing.

ON October 15 from 2BL, Mr. T. S. Gurr will give a talk on a Maori tangi, or funeral ceremony. Mr. Gurr was invited to be present at the tangi of a famous Maori chief, Taiaroa, in New Zealand some years ago, and will relate his impressions, and also give some information about the various rites of this chivalrous and warlike race.

Miss Anne Stuart Gurr will supplement this interesting session by singing Alfred Hill's "Maori Tangi" and other Maori songs by this talented composer.

MAJOR-GENERAL ANTILL, C.B., C.M.G., will give an address on "Impressions and Recollections of India," from 2FC on October 16 at noon. General Antill was the first Australian officer ever sent abroad for professional army training, in 1893.

ADELE INMAN will broadcast from 3LO on October 14. Miss Inman has appeared in all the leading cities of Australia, and has sung in connection with the Irish plays of Allan Doone, and the Shakespearean productions of Alan Wilkie.

A TALK on "Inexpensive meals for the Spring" is being given by Miss Avis MacLachlan on October 15 from 3AR.

MISS FRANCES FRASER will make a return visit to 3AR on October 13, when she will give one of her intensely interesting talks on "A woman's wanderings through the Empire." Her lecturettes are brimful of personal incidents.

JEAN LEWIS, whose rich contralto voice made her most popular with listeners in the past, will be on the air from 3LO on October 16. Miss Lewis is one of the few vocalists over the air to sing the old Welsh songs in the national tongue.



BRIGADIER-GENERAL ANTILL, who will give an address from 2FC on October 16.

CHARLES O'MARA will broadcast some more Hibernian humor from 3AR on October 17. Born in County Wicklow, at a stone's throw from the spot made celebrated by Moore's famous song, "The Meeting of the Waters," Mr. O'Mara sings most of the ballads composed by his fellow countryman.

CHARLES TREWAVIS, baritone, will be on the air from 3AR on October 16. He studied the art of interpretation under the famous English artist, Plunkett Greene.

THE broadcasting studio is always brighter for a visit from Mae Seaton, the vivacious comedienne, who will be on the programme at 3AR on October 19.

TO the many people who think that a salad is an elementary dish of shredded lettuce and onion, the talk given by Miss Kathleen Benningfield on October 13 from 3AR on "The preparation of salads," will be quite a revelation, and will contain many helpful suggestions for quickly and easily-made salads.

FRANK PERRIN, the comedian who is creating much diversion from 3LO and 3AR, is well known to Australian audiences as a celebrity vaudeville artist. Before coming to Australia, he was a prominent figure on the English stage, and for some years was understudy to the famous comedian, George Robey.

LLOYD POWELL, the Welsh pianist, who is at present on a visit to Australia, will give a recital from 3LO on October 18, and, in conjunction with the National Broadcasting Orchestra, will be heard in Schumann's "Concerto in A Minor."

Showing marked musical ability at a very early age, Mr. Powell gained two scholarships at the Royal College of Music, and studied his art under such celebrities as Sir Charles Stanford, Sir Frederick Bridge, and Sir Hubert Parry.

A FINE programme of military music has been arranged at 3LO for October 11, when the 59th Battalion Band will be heard in a descriptive selection arranged by Captain A. J. May, depicting a battalion march past on a ceremonial parade from the line, after a review, and Thomas George, the popular bass baritone, will contribute appropriate numbers, including Schumann's "Two Grenadiers."

To give further colour to the martial programme at 3LO on October 11, the Tributary Theatre players will present a military play by Horace Brighthouse, "Once a Hero," which will be produced by John O'Keefe.

Mr. O'Keefe is one of the pioneers of the Tributary Players, and has sustained leading parts in their productions.

KEOKI and Wehi Grieg, as the Hilo Duo, are proving a great attraction at 3AR and 3LO, and giving listeners a taste of real Hawaiian music. These artists have performed in almost every country, and were selected as supporting artists to the famous Scots comedian, Sir Harry Lauder, for his tour through China and India.

This Week's Talks



SIR JOSEPH COOK, who will deliver this week's feature talk from 2FC on Sunday.

DAY SESSIONS.

FRIDAY, October 11.—2BL: 1.15, Mrs. Meredith Atkinson, "Some Australian Verse"; 2.45, Claire E. Byrne, "Stammering and how to treat it"; 2.30, Major Sanford Morgan, "A Visit to Zanzibar"; 3FC: 12.0, Francis Jackson, "Edmund Burke, 2"; 2.2, Captain L. Roberts; 4.0, Redgum, "Gardening."
SATURDAY.—10.10; G. W. Cooper, "Gardening." 3BL.

SUNDAY.—2FC: 5.10, C. N. Baeyertz, "Voltaire."

MONDAY.—2BL: 1.15, Miss Proctor, "Period Furniture"; 2.30, A. B. Abel, "The Increasing Importance of peanuts as food"; 2.45, C. Price Comgrave, "Along the Darlot Pad"; 2FC: 12.0, V. C. Bell, "The Public Forum"; 2.2, W. S. Reay, "Literary Personalities"; 4.0, A. S. Cochran, a reading.

TUESDAY.—2BL: 1.15, Sister Parry, "Home Nursing Hints"; 2.30, Fred. Arlington-Durke, "Benefits and Faults of Mass Production"; 2.45, Tom Gurr, "The Maori Tangi"; 2FC: 12.0, Illustrations by Clifford Lathlean; 2.2, a speaker from the Museum; 4.0, Louise Homfrey, "Impressions of a Wanderer."

WEDNESDAY.—2BL: 1.15, Goodie Reeve, "Aids to Personality"; 2.30, Dr. Harold Norrie, "William Charles Wentworth"; 2.45, The Storyteller, "Heroic Tales of the Sea—Raleigh"; 2FC: 12.0, General Antill, "Recollections of India in 1893."

THURSDAY.—2BL: 1.15, Mrs. Mildred Muscio, "Films for Children"; 2.30, Brunton Gibb, "Random Remarks"; 2.45, F. H. Raward, "Chicago—America's Industrial Hive"; 2FC: 12.0, M. H. Ellis, "A travelogue"; 2.17, C. N. Baeyertz, "Spoken English."

EVENING SESSIONS.

FRIDAY.—2BL: 7.5, Claude Corbett, "Sporting"; 9.30, Wallace Nelson, "Random Reminiscences"; 2FC: 8.55-9.15, W. A. Oldfield, "Cricket Forecasts."

SUNDAY.—2FC: 6.40, Sir Joseph Cook, "Tea League of Nations."

MONDAY.—2FC: 10.0, F. H. Raward, "The Restaurants of London."

TUESDAY.—2BL: 9.30, George Black, M.L.C., "In My Ancestral Days."

WEDNESDAY.—2BL: 7.5, Graham Kent, "Bridge"; 2FC: C. N. Baeyertz, "Dialect Stories."

Facts About - Power Valves



A SUBJECT in which the broadcast listener might well interest himself is the study of the audio frequency amplifier of his receiver. Providing the loud speaker is a really good one, it is this amplifier which has most of the say in deciding whether the output of the receiver is to be music or noise. Any careful attention given it can hardly fail to produce the reward of improved reproduction—an improvement quite generally needed at the moment.

The important sections into which the amplifier can be divided include the plate supply, the bias voltages, the transformers, and the valves. Of these, the latter is one of the most important, and probably the least considered. In many cases some sort of a power valve is used in the output amplifier, but it is rare indeed to run across a receiver in which the audio valves are truly suited for the work they have to do.

It must be admitted that the first valve of the typical two-stage amplifier does not present particular difficulties, since almost any general purpose type of valve is capable of fulfilling its obligations just so long as it is correctly biased. The output amplifier valve, whose job it is to feed the loud speaker, is, however, much more heavily weighed with responsibilities than the average listener appears to realise. Unlike any other valves in the receiver, the last one must be capable of handling quite appreciable amounts of power. What is more, the valve must be of such characteristics that the handling of this power is accomplished with very little effort. In other words, it must be the type of valve which has lots of enthusiasm in reserve. It is the business of finding out which type of valve will have the necessary reserve that we are to consider in this article.

DRIVING THE SPEAKER.

The modern loud speaker, though a highly satisfactory instrument, is really a very inefficient one. In its work of converting electrical energy into sound, a very considerable loss is incurred.

If the speaker converted all the input into sound energy we could use even the lowest-powered valve to feed it. Since this is so far from being the case, however, it is necessary for the output valve to be an exceedingly hefty one as receiver valves go.

The result of using too small a valve in the last amplifier stage is not that the music

Deciding on the factor of merit for various types.

By ROSS HULL

is necessarily of low volume, but that distortion occurs when the volume is increased. This valve distortion—readily detected by the experienced listener—is of a particularly obnoxious nature—just how so many listeners put up with it is a genuine puzzle to us.

HOW MUCH POWER?

Though we aim to avoid as many technicalities as possible, it is quite necessary to introduce a few technical terms, in order to paint any sort of a picture of the power valve, and the work it is supposed to do. There is, for instance, the one important question: "How much power should a power valve have?"

It has been determined from experimental work conducted under different conditions, and by different groups of people, that the power required to drive the average loud-speaker, in order to provide a low volume in a medium-sized room, is of the order of .3 to .5 watts. This means that the output valve of the receiver must be able to supply an undistorted output of at least .3 to .5 watts if the speaker is to be able to give a low volume of music without valve distortion. Right on top of this statement, it should be said that the type of three electrode power valve which is used very widely in Australian receivers—with 135 volts on its plate and about 9 volts bias—is quite incapable of such an output, and can only provide a loud-speaker full of broadcast reception to the accompaniment of relatively terrific valve distortion. For good speaker volume—the sort one would use when actually listening to a programme, and not just using it as a "background"—approximately 1.5 watts are required from the power valve if valve distortion is to be avoided. For loud volume as much as 3 watts are required if the reproduction is to be truly satisfactory. It would appear to be quite probable that not 10 per cent. of present-day receivers in this country are able to give such an undistorted power output.

Of course, these power requirements, as stated, are rather difficult to appreciate, and it is necessary to see just what they mean

in terms of valves. The power valves of the English and European manufacturers are rarely, if ever, given a power rating, and if we are to obtain an accurate picture of their capabilities, it is necessary to engage in some computation. The listener, it would appear, has been in the habit of using a certain type of output valve, simply because it was titled in the valve catalogue as a power-valve. In view of the present ideas on valve requirements for output amplifiers, many of these valves have no real fight to the title at all.

COMPUTING THE OUTPUT.

The factors which directly influence the ability of the valve to provide undistorted power output, are the amplification factor, the plate impedance, the load impedance, and the permissible grid voltage swing. The amplification factor of most valves is made available by the manufacturer, as is the plate impedance. The load impedance and the permissible grid swing, however, are matters which have to be given detailed consideration.

Talking of the load impedance, we know that the valve will be able to give the greatest undistorted output when load has twice the impedance of the valve. When a moving-coil speaker is used, it is possible to obtain something approaching this relationship. The output transformer in most speakers takes care of this matter so long as it is connected to a valve with a plate impedance of approximately 2000 ohms. In the case of the magnetic speaker, it has been found impractical to attempt any such impedance relationship at all of the audio frequencies, on account of the fact that the impedance of the speaker is so greatly varied by the frequency of the input power. It is common practice to design such speakers so that their impedance matches that of the valve at about 200 cycles. We mention these matters since they are important considerations when it comes to working out the power rating of the valve under operating conditions.

The permissible grid swing—the other important factor—is usually to be obtained from the manufacturer's grid bias ratings. Most of the power valves are so designed that the voltage on the grid can be dropped to zero before any grid current begins to flow. Without getting into a discussion of the whys and wherefores, it can be said that the flow of grid current means serious dis-

ortion, but that so long as it is avoided the valve will be operating with a reasonable freedom from distortion. In other words, this means that the grid voltage can be varied by the output of the previous valve from its normal value down to zero, and from the normal value upwards to the same extent. In such a case, the maximum permissible grid swing is, therefore, equal to the grid bias value. This value, however, is the peak voltage, and since we are considering alternating currents, we will have to divide this figure by the square root of 2, in order to obtain the R.M.S. voltage—the sort of voltage an ordinary a.c. meter would read.

Now that we have a means of arriving at all the factors which enter into the power output of the valve, we can proceed to see how it is computed.

FOR MAGNETIC SPEAKERS.

Let us take as an example a typical power valve, arranged to feed a magnetic speaker, the impedance of which is equal to, or a little greater than, that of the valve. Under these conditions, the maximum undistorted power output of the valve can be obtained by multiplying the square of the amplification factor by the square of the grid bias voltage, and dividing the result by eight times the plate impedance of the valve. This sounds complicated, but in reality it is quite simple. It is a computation that any enthusiast could make by looking up the amplification factor, grid bias rating, and plate impedance on the list of characteristics that the tube maker supplies. The result of the computation is in watts, and from our previous statements it can be seen that the result should be at least .5 watts if low volume is required without valve distortion, and at least 1.5 watts if the speaker is to make itself properly heard.

What we would like to do would be to work out the power output of all the power valves at present available, and to arrange them according to the power-supplying capabilities. For a variety of reasons we cannot do this, but at least we can suggest that enthusiasts might spend an hour or two working out the rating of some of the various power valves which are available to them.

In cases where the valve is to supply a moving coil speaker—the effective impedance of which is twice that of the valve—another formula is desirable, which takes into account the impedance relationship. In this instance the square of the amplification factor is multiplied by the square of the input grid voltage, and also by the plate impedance. The result is then divided by the square of the sum of the plate impedance and the load impedance. The grid voltage in this formula is not just the bias voltage, but the R.M.S. value of the signal voltage. An approximation of this value can be obtained by dividing the bias voltage by 1.4. After a few examples have been worked out, it will be seen that the important things to look at on the list of characteristics of power valves are the amplification factor, the plate impedance, and the grid bias. In most power valves the first of these two factors are somewhat similar. Usually the plate impedance is about 2000 ohms, and the amplification constant somewhere between 3 and 4. The characteristic which might well be looked at first is, therefore, the grid bias. In general, the greater the grid bias requirements, the greater will be the power output capabilities of the valve.

PUSH-PULL AMPLIFIERS.

These computations of the power output of valves apply only to a single valve. When valves are used in a push-pull, or in parallel, much greater outputs are made available, providing the necessary precautions are taken to see that the load impedance is of the correct value. When valves are in push-pull, their impedances are in series, and must, therefore, be added. For a given speaker, this means that a higher ratio output transformer is necessary. When the valves are in parallel there impedances are in parallel, and the total impedance is, therefore, equal to half that of one of the valves. For a given speaker, suited for the one valve, a lower ratio transformer must then be used.

When valves are in parallel their output rating is equal to the rating of one valve multiplied by the number of valves used. When two valves are in push-pull, and the same necessary rearrangement of the load is made, the output is twice that of one valve. As a matter of fact, it may be higher than

this, some engineers stating that it is three times the rating of one valve. The reason for this is that each valve in a push-pull amplifier can be given a greater grid swing without introducing any more distortion, than the same valve could be given when operating on its own. It can be said quite definitely that two valves in a push-pull amplifier, operated to give twice the output of one valve, will certainly provide a greater freedom from distortion than a larger single valve having double the rating of the individual valves in the push-pull stage. At the same time, this push-pull amplifier will give less hum than the big single valve operated under the same conditions. It is no wonder that the push-pull output amplifier is becoming so widely used.

A SUGGESTION.

For listeners who doubt the reproduction of their receivers, we really believe that a consideration of the power output of the final amplifier would be worth while. All that is necessary, to reiterate, is to obtain the plate impedance, the amplification constant, and the bias voltage ratings of the valve or valves used. The grid bias voltage is then squared, and multiplied by the square of the amplification constant. The result is then divided by eight times the plate impedance. The final figure is then the approximate maximum undistorted output power which the valve is capable of giving. If two such valves are in parallel, the total power rating will be twice that figure, while if the valves are in push-pull, it may be as high as three times the rating of the one valve. If the final result is below .3 watts, it can be assumed immediately that the output valve is positively unsuited for the work, and is undoubtedly making a horrible mess of the received music. If it is between .5 and .75, the valve can be considered to be reasonably effective—particularly in the battery operated receiver, where a high output is so difficult to obtain. Should the result of the computation be 1.5 or more watts, it is reasonable to assume that if there is any serious distortion, it is not likely to be the result of a poorly chosen type of valve. Pentodes or valves the names of which are spelled similarly, have not been considered in this discussion.

JAPANESE IRIS



(By G. W. COOPER, who talks on "Gardening" from 2BL at 10.10 on Saturday mornings.)

THE photograph was taken last January, and gives some idea of the gorgeous display of massed Japanese iris in Centennial Park. On the left is the park superintendent, Mr. Nicholls; on the right, the late Mr. Lipscombe, superintendent of Hobart parks and gardens, who was on a health trip at the time. Mr. Lipscombe raised the world-famed strain of asters called the "Tasmanian Branching Asters," now grown everywhere in Australia.

The natural home of the Japanese iris is in conditions such as prevail at Centennial Park, where there is permanent moisture in the subsoil. Near the beds are lakes filled with water lilies, and the soil where the Japanese iris beds are situated is about one foot above the level of the lakes. In this position the iris have their lower roots in water, while the nine inches or so are charged with moisture, but not to saturation point.

These plants are not aquatics, like water lilies, but will grow and flourish on the edge of a pond, where they can take the water as they require it in the growing season. Anyone with a moist but open sunny spot—no shade whatsoever—and shelter from the prevailing winds during December, January, and February, can grow these iris to perfection. It does not matter about the strong winds from the south and south-west in winter-time, when the iris are dormant; but as soon as the flowers open, from the end of Novem-



ber onwards, the large flowers above the foliage will not stand buffeting about by wind. The north-easters are bad in summer time, so shelter from that quarter is essential; also from the southerlies. These are the two winds that matter most while the iris are blooming.

When I say a sunny spot to grow them in, I mean where the sun shines from the first thing in the morning till last thing of an evening. The sun produces that well-ripened growth which is so necessary for flowers nine and ten inches across. The more shaded the position, the weaker the growth,

and therefore the smaller the flowers. If you have not a position as described above, and wish to grow Japanese iris, and wish to grow them well in the ordinary garden, avoid growing them where there is a mass of roots from shrubs, hedges, or trees, etc.

The iris like the soil to themselves. If you have not got such a position, and the bed or border is a bit close to shrubs or a hedge, you can place a sheet of galvanised iron parallel with the hedge, in the soil, and this will keep the roots apart, and will prevent

the roots of the hedge from robbing the ground where the iris are growing. This method applies to anyone who has a suitable spot, but which is in proximity to a hedge, shrubs, etc.

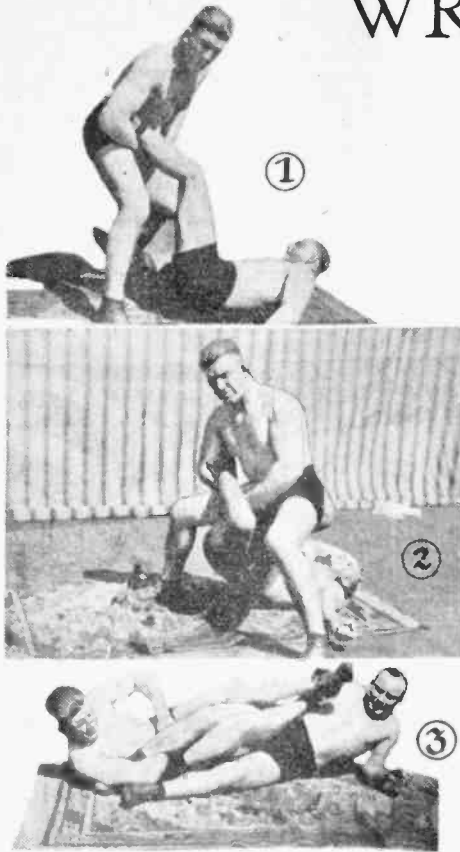
The proper time to manure (animal manure only) is in June and July. If in an ordinary garden, keep the surface always mulched throughout the year. You cannot very well overdo the manure if cow or horse manure is used. Do not use artificial manures. Lift and divide every three years, and plant two and a half feet apart.

WRESTLING STYLES

*Different styles used—the Graeco-Roman, Westmorland.
Different styles used, the Graeco-Roman, Westmoreland,
Cornwall, Jiu-Jitsu, and Catch-as-catch-can.*

By **FRED JOHNS**

Official Describer of the Wrestling
Contests for the A.B.C.



of the arena as a corrective. They were also allowed to grab each other by the neck and then throttle each other, kick and bite, and butt like rams. But as time went on the art of the mat became more refined and in England and the Continent the chief styles used now are Cornwall and Devon, and Cumberland and Westmorland.

With the former style the men compete in strong loose linen jackets, catching hold above the waist of any portion of the linen jacket. They were allowed to kick to great excess, but it is now forbidden and the men wrestle in stockinged feet. In order to be thrown two shoulders and one hip must be on the ground, or two hips and one shoulder, and a man must be thrown flat on his back before a decision can be given against him.

The Cumberland and Westmorland is more scientific. On taking hold the wrestlers stand up, chest to chest, each placing his chin on his opponent's right shoulder; and, grasping each other around the body, the right arm of each being under the left arm of the other, each joins his hands behind his opponent. Kicking is strictly forbidden, and if one competitor lets go his hold before the other, a decision is given against him. If both fall to the ground they wrestle on, but if one falls before the other, a fall is registered against him. These styles embody many of the features of the Graeco-Roman.

Japanese Holds

Jiu-Jitsu, described briefly, is a combination or series of combinations of holds and locks, fixed usually upon the limbs in such a manner that pressure will dislocate a joint, or the actual breakage of a bone will be brought about. This famous Japanese art is based upon a thorough knowledge of body balance, combined with an accurate knowledge of the construction of the human skeleton. As we all realise, all of our joints and the limbs of the body have a limited movement in each direction. Whether the movement be backwards, forwards, or sideways, the limit is reached when that part is fully extended. If force is used to attempt to pass that limit, danger is caused. By a carefully thought out system of holds, locks, and levers, Jiu-Jitsu supplies the required extra pressure to bring about this result. One can readily appreciate, if not the principle of the holds, etc., at least the effects of them. The Japanese originated this art and had difficulty in introducing it into England, and one may wonder that no European had thought this style out before. As one can now see at any match at the Stadium, American and Graeco-Roman style wrestlers have discovered several tricks which may be classified in the Jiu-Jitsu system, viz: wristlocks, hammerlocks, and the double Nelson.

It can be therefore seen that Jiu-Jitsu and Graeco-Roman styles form the nucleus of the catch-as-catch-can wrestling, as seen at the Stadium. It is a combination of locks and holds fixed on the body, with the primary object of forcing an opponent's two shoulders on to the mat for a space of three seconds, or make your opponent give in to a submission fall, although his shoulders may not be on the mat. The latter fall is gained because your opponent is in such pain that he cannot stand the strain any longer. He has signified to the referee that he wishes to submit or taps the mat as a token of surrender. A submit fall is not allowed in the amateur competitions and Jiu-Jitsu is absolutely barred. The chief holds barred in professional matches at the Stadium are the strangle, chopping, biting, and gouging with the finger.

Special Toe Holds

The illustrations show some of the holds as used by the wrestlers from the Stadium. Walker, Heavy-weight Champion of the British Empire, demonstrates a series of Japanese toe holds, and Jim Browning is seen in Japanese strangle holds and a counter.

(1). Walker has made a leg dive at his opponent and seized his left leg, pulled it smartly towards him, and firmly secured it under his arm.

(2). As his opponent has wriggled from side to side, Walker has swung his left foot over the body, and just sat down, using his leg and the bony part of his forearm as a fulcrum lever. This causes excruciating pain, and also pins both shoulders to the mat.

(3). This hold is gained from position 1, only seize the right leg instead of the left. Sit back smartly, scissoring your opponent's thigh as you fall. Be careful to lock your left ankle over your right. This gives you a lot more leverage, and as long as you keep strain on your opponent's leg with the bony part of your forearm, you are in a winning position.

I have received one special enquiry, dated August 29, from a Mr. H. Barlett, of Thirroul, asking me to explain briefly how Pesek broke the Boston crab in the Pesek-Eustace contest. For those that are not conversant with the methods of obtaining, this hold I will briefly explain one of them, and also explain how Pesek broke it in the match in question.

First position: Eustace made a dive at Pesek's legs and secured both of his (Pesek's) ankles under his arms.

Second position: Eustace stood up and Pesek's shoulders dropped to the mat but he stopped himself from being pinned by resting on his elbows.

Third position: Eustace turned Pesek over, intending to strain backwards and sit in the small of Pesek's back, but Pesek arched his back, and with a sudden lunge with his legs, obtaining a push off with his hands, he flung Eustace forward on his face, thereby breaking the dreaded Boston crab.

It is the usual custom for the referee to follow the two contestants into the ring, and then proceed to their respective corners and examine them for grease on the hair, body, or costume, examine their nails to see that they have been properly filed down, and that their boot lace tags have been removed. He then calls the two men to the centre of the ring, introduces them to each other and tells them plainly what he expects them to do in the way of leaving certain holds when he directs, and also explains what holds are not allowed. Most of the wrestlers know each other, and also know what holds are not allowed, but this is done to prevent any misunderstanding, and then neither man can complain that he did not know.

I have been asked what holds are barred; what I mean by a Graeco-Roman combination; and what is the general make-up of catch-as-catch-can style wrestling. This latter is chiefly made up of Jiu-Jitsu and Graeco-Roman. Here is a brief resume of the history and form of the latter style.

Greek Influence

Wrestling was greatly encouraged among the ancient Greeks as a gymnastic exercise, and the highest awards were bestowed on the victors at the Olympic Games. It was also cultivated by the Romans, but their tastes inclined to more savage and more brutal exhibitions than to that of wrestling. At the same time it differed in its ancient form to wrestling of to-day, the wrestlers of old being wont to compete almost, if not quite nude, their bodies besmeared with oil of some kind, as a means of making their muscles quite supple; but as this practice rendered it difficult to get a fair hold of one another, they were allowed to use sand on their hands, or even to roll in the dust

Wireless Weekly

Incorporating "Radio In Australia and New Zealand."

FRIDAY, OCTOBER 4, 1929.

JUNK

EVERY radio fan keeps it. Some would like to destroy it. Many sentimentalise over it. But one thing is certain, no one seems to get rid of it.

Junk—old rheostats, valve bases, honeycomb coils, condensers, crystals, and wire, wire, wire—what radio fan hasn't boxfuls of it in his home? It is a problem his wife attempts to solve every cleaning day.

"No, I won't throw that out," or "May as well keep this, it may be useful some day," and, "Well, fancy this old galena—how many years ago," etc., etc. And so it mounts up.

Then a new receiver is described, and the old junk box is turned to for odd parts. "This transformer will do"; "Here's a resistance specified in the list of parts—not quite 10,000 ohms, but near enough," and so on. The constructor cuts down his parts bill by half.

But he also cuts down the efficiency of his set. Odd parts used in new sets cause more trouble than any other factor in amateur set construction. A large proportion of the queries addressed to the Information Service pages are the result of the employment of old parts, often of values very different from those specified in modern sets.

Because a component part has served well in some previous set, the radio fan retains a certain faith in it. But age gradually destroys the old efficiency. Dust creeps into transformer windings, between condenser plates and alters resistor values. Then when the new receiver is put together and the resulting performance is not as good as that of the old, the listener, knowing that almost the same parts have been used in both, is inclined to deride the new set.

No receiver has a real chance unless new components are used in its construction. Yet the accumulation of junk is inevitable when one is engaged in radio set building. It presents not only one of the most despairing problems of the housewife, but it also stands as a serious bar to improving the general standard of reception.

Once in a while every radio fan should make a clean sweep of his junk.

Broadcasting Shows Big Gain in Germany

BROADCASTING in Germany has made greater progress during the last year than during any other since the art first became popular, it has been revealed by the executives of the Leipzig Trade Fair. Total number of radio listeners has been steadily increasing during the last five years, and during 1928 the total reached 2,284,000 licensed radio receiving sets.

Broadcasting was first introduced in Germany five years ago, and the total number of radio sets recorded during the first year

was less than 100,000. During the last three years the increase has been 50 per cent. annually. Over 700 exhibits were shown at the Leipzig Fair recently.

The Government collects a tax monthly on each receiving set throughout Germany, which is collected by the Post Office Department. This income is allotted to the broadcasting stations and to the government.

Of the programmes broadcast in Germany 39 per cent. consist of music. The educational features, which include lectures, speeches, from 16 per cent., while 10 per cent. is general literature.



UNK WHITE'S SUGGESTION FOR GETTING RID OF OLD JUNK.

The Safety Valve

WHY NOT MORE AUSTRALIAN MUSIC?

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.

Dear Sir,—“King Billy” (“W.W.,” Sept. 27) has splendidly voiced the opinion of countless listeners-in, when he complains of the lack of improvement in the programmes and the overburdening of the listeners with the incessant and atrocious so-called jazz music and its rasping and unmusical blare. Slowly and surely the Australian composers have been strangled in their effort to reach the public with their compositions.

The Australian publishing houses, for some reason or other, are unable to help the Australian composer, and are content to sit back and help in the American invasion of this avenue, and draw their profits from the sale of American compositions. I write as one who has had over twelve months negotiating with Australian publishing houses for the acceptance and publication of two real Australian waltz song compositions; but the old, old tale is told, “No demand for Australian music.” Yet those who have tried over the manuscripts are confident that they are equal to, and in many cases better than, most of the talkie theme songs foisted upon the Australian musical public.

Is it any wonder why we grow weary and give up the game. Either we must forward our work to America and gain some measure of success, or we must leave it alone. Are Australians really anxious to see their fellow country men and women reap the rewards that are now being given so lavishly to American composers?

To do this the listeners-in should demand the broadcasting of Australian compositions, and thus create a demand for the publication of such works.

Should anyone desire to communicate with me on this matter I shall be very glad to co-operate with them in any way that is possible to try and bring before the Australian public, and especially the great army of listeners-in the talent that is in our midst.—Yours, etc.,

A. PULLEN.

Sydney (Box 3499RR, G.P.O.).

“Reliable” Announcing

Dear Sir,—I listened to the relay from 3AR (Melbourne) on Saturday of the Town Hall concert, when Mr. Goll and Orchestra gave a fine rendering of a piano concerto (presumably by Beethoven—though neither advertisement nor announcer mentioned the composer). The concerto being finished, there ensued long and well-earned applause.

Then up and spake 3AR in words to this effect:—“You will now hear the two last movements of the concerto, being a slow movement followed by a vivace.” Description of the vivace given.

Straightway was heard Mr. Goll’s encore piece—a piano solo typically modern and embodying harmonies and progressions to make poor old Beethoven turn in his grave.

Then followed the astounding intelligence from 3AR that the last piece was the slow movement hereinbefore referred to; also that the vivace (description repeated) would follow immediately.

Silence for one minute.

3AR. “The interval is now on after which the orchestra will play a symphony, etc.”

“CLASSIC.”

Mosman.

Station “J.O.A.C.K.”

Dear Sir,—I can log this station every night (after 4QG closes down) on my six-valve Radiola, and the announcer distinctly says, “J.O.A.C.K.” The station puts on some very decent music, too. I hope this will interest Mr. J. W. W. Harder of Wollongbar.—Yours, etc.,

“CONSTANT READER,” W.W.

Gulgargambone.

Talks Wanted

Dear Sir,—The broadcast programmes provided since the inception of the A.B.C. management have very little diversion from music and songs so far as the night programmes are concerned.

While appreciating these programmes, it is suggested that a little diversion from music and songs should be introduced by including lectures for 15 minutes each evening from one of the A class stations on interesting subjects, including travels, working of industries, economics, and educational talks.—Yours, etc.,

JAMES WILTSHIRE.

Kogarah.

Five Stations on Crystal

Dear Sir,—With regard to crystal owners. I congratulate “Crystal User” and “Hertzite” for the opening-up of the subject about crystals. I myself think that they will not be the last letters of appreciation and adoption of one or two pages of WIRELESS WEEKLY to be devoted to crystal-users and their wants, and troubles, and how to fix them. I have a crystal, which I can safely say can rake in five stations—2BL, 2FC, 2UE, 2GB, and 2KY, besides Pennant Hills Morse Station, and some of the ships on the 600-metre range, and where I am situated I think it is a very good performance for a crystal. The transmitting station of 2UE is on one side of me, and 2BL on the other, and I can cut out each.—Yours, etc.,

“CRYSTAL DE LUXE.”

Maroubra.

NEXT WEEK

The next issue of WIRELESS WEEKLY will be a special short-wave number. Accurate lists of world short-wave stations with time schedules will be published. In addition to constructional details for a cheap and efficient short-wave receiver. Several articles on short-wave work, and much valuable data for the S.W. fan, will also appear.

Saved!

Dear Sir,—I have been having trouble with my valve set of late. I haven’t been getting a single station, till a solution was arrived at the other night. A threepenny bit was placed between the valve and valve socket, and immediately upon switching the set on a voice boomed through the speaker, announcing “Aberdeen calling; Aberdeen calling.” Trusting this will be of interest to readers.—Yours, etc.,

A. W. EASTON.

Leichhardt.

Re 2FC Transmission

Dear Sir,—Why all this controversy re above transmission? I am operating a four-valve set, and can receive 2FC with wonderful clarity and volume, without any extraneous noises (except, of course, static, which is unavoidable).

In fact, I am often told I have it too loud (not distorted) when people are visiting us, and I am tuning different stations. I frequently tune in to 2FC in the middle of an item. The visitors immediately ask who is that? 4QG. And, on being told that it is 2FC, they say it is wonderfully clear and loud.

So, therefore, in conclusion, I wonder why it is that others, per the “Safety Valve,” complain.—Yours, etc.,

A. J. BAKER.

Brisbane.

2FC Defended

Dear Sir,—With reference to “Yam,” “J. L. Long,” and “J.P.H.” (W.W., Sept. 20). I am surprised that you should allow such drivel to get into your most valuable and technical journal. If the writers think that your readers appreciate that sort of stuff they are vastly mistaken. I submit, unless such criticism is of a constructive nature, it should have no place in the Safety Valve column.

I have been a listener-in since the time when wireless was such a baby that it could hardly toddle, and to-day it is so “virile” that it needs no apology from the average listener-in, and, so far as 2FC contribution to the pleasure of Australian humanity goes, and while it maintains its present standard, it will remain a very consistent debtor. My personal experience is that that station is the most consistent of all Australian stations. (I am not referring to the problem “A” stations in the quality of its programme.) Personally I am (roughly speaking) 500 miles from Sydney, in what is known as the inter-mountainous region, 3300 feet above sea-level. I use a modern Brownling-Drake “B” battery, 35 volts, unless I desire some other stations. I do not touch the adjustment from one week to another. I simply switch in, and it’s always there, without distortion or the other noises complained of by the writers in their review.—Yours, etc.,

GEORGE ROSS.

Gilcomston.

NEW SETS FOR OLD! ECONOMIC RADIO STORES

SPECIAL OCTOBER OFFER

WE WILL GIVE YOU

£5

FOR YOUR OLD RADIO SET

When Buying one of our All Electric Renown Sets

This Special OCTOBER OFFER is made to enable you to trade in your old radio set regardless of size or age.

THE ALL ELECTRIC RENOWN THREE

The Most Efficient and Up-to-date Electric Receiver Obtainable

USUAL PRICE £26/15/-

Less Allowance on
Old Set

£5/-/-

YOUR

PRICE

£21'15'/-

IN AN UNUSUALLY BEAUTIFUL FIGURED
MAPLE CABINET

SUITABLE SPEAKERS FROM £1/17/6

Our policy of trading for cash only makes this generous offer possible

SEE OUR SPECIAL WINDOW DISPLAYS

New sets delivered and old sets picked up free within metropolitan area.

TO SEE ONE IS TO DESIRE ONE.

TO OWN ONE IS TO BE SATISFIED.

COUNTRY RESIDENTS....DON'T MISS THIS OFFER!

ECONOMIC RADIO STORES

ADDRESS MAIL ORDERS 492 GEORGE STREET.

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

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

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

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

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

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

Getting The Best Results From The RENOWN THREE

Further notes on a popular receiver, published in "Wireless Weekly" some time ago, for the benefit of numerous correspondents

THE accumulated experience of users of any popular receiver will often suggest several improvements—each perhaps of minor importance—which can with advantage be incorporated in a revision of the original design. Experience amongst its users is the final test of a set's dependability. Whilst it is true that it is possible so to design a set that it combines all the advantages expected by the builder and is suitable for operation in any locality where average reception conditions are obtainable, there must always be instances where the set will partially fail to act up to expectations. This may be due to any of a variety of causes, but whatever the reason, an adjustment can usually be made to meet the special case and at least assist in overcoming the trouble.

The Renown Three receiver, which was described in WIRELESS WEEKLY on March 22, has been built by home constructors all over Australia. In the great majority of cases exceptionally fine results have been obtained. Owing probably to the fact that the Renown has been built by such a wide circle of amateurs, and that it is being used under practically all possible reception conditions, we have received more than the usual number of inquiries and requests for information.

The basic circuit design of the Renown Three is similar to the well-known Reinartz Three. Its superiority over the older Reinartz consists largely in the very efficient form of aerial tuning which has been devised and in the design of the coil kit. By means of the special tapped coils and clips the aerial can be brought into exact tune with the set, regardless of the size of the aerial. This means that it is possible to pass a great deal more energy from the aerial to the set, and this naturally results in much stronger reception, particularly from the weaker and more distant stations. Moreover, the design of the coils allows this greater transfer of energy without in the least broadening the tuning or allowing of any interference from stations with contiguous wavelengths. Stronger reception of the stations results in improved clarity, for in obtaining a given volume it is less necessary to force the set.

The following suggestions for the improvement of the Renown are the result of wider experience, and will be of value to all those who have built the Renown or contemplate doing so. For greater convenience our subjects have been arranged under separate headings.

THE LAYOUT OF BASEBOARD PARTS.

The baseboard sketch given in our original article was practically a scale drawing of the complete receiver, but these additional de-

tails will remove all difficulty, and the slight alterations suggested should improve results where full satisfaction has not been obtained. The wavetrap coil is placed at the extreme right hand of the baseboard, lengthways. If your coil is not fitted with a proper mounting strip, use two small "distance pieces," made from wood, bakelite, or washers, so that the wire of the coil will not actually touch the board. The long former with the aerial and grid coils is mounted next in the centre of the baseboard, at right angles to the panel and from five to seven inches from the wavetrap coil. The end with the aerial coil will be farthest away from the panel. Use the same kind of distance pieces as before to keep the coil off the board. After the coil formers, mount the rest of the parts in this order: The socket for the detector valve comes first. Place it as near to the long former as you can for convenient wiring, and in the centre of the baseboard with the filament terminals facing the panel. Between the grid terminal of this socket and the edge of the baseboard mount the grid condenser. Do not on any account allow the terminals or connections to this condenser to touch the baseboard. A good quality grid condenser of the type specified in the list of parts for the Renown has two special mounting holes. Place distance pieces under these so that the condenser will be raised a little way off the board. After the detector valve socket, mount the first audio transformer. This is the five to one ratio, for the first stage. Have the BX and plate terminals of this transformer facing the panel. Next follows the first audio valve socket, placed quite close to the transformer and with the filament terminals facing the panel as with the detector valve socket. After this comes the second transformer and the last valve socket. The second transformer should be mounted at right angles to the first with the BX and plate terminals next to the first audio socket. The valve sockets and transformers will all be in line when mounted on the baseboard and may appear to be a little cramped. This is inevitable, as we want to allow as much room as possible for the coils, and it will not in any way affect the efficiency of the receiver. There are now only the two terminal boards to be mounted, and the baseboard assembly is complete. The small board with the aerial and earth terminals is mounted at the right-hand end of the board opposite the wavetrap coil. The battery terminal board should be farther down, so that the connections from

the transformers and valve sockets will be as short and convenient as possible.

THE WIRING.

It is here that the greatest care must be exercised. Careless wiring, bad joints, and loose connections are the cause of most of the trouble in any radio set. The first essential is to learn how to solder properly and the correct solder to use. Many amateurs use corrosive fluxes to make the soldering easier. It certainly does this, but only at the expense of the efficiency of the set. The only material suitable for radio work is proper resin cored solder, which can be obtained at any radio store. When soldering, hold the iron on the point which has to be soldered until it is well heated. Then apply the end of the solder stick to the point itself—not to the iron. If a properly-heated iron is used and it is held long enough on the joint the solder will immediately run in and take perfectly. Always try to have as great a space between any two wires as you can manage, and never allow grid and plate wires to touch the baseboard or run parallel to each other. Be sure that the moving plates of all variable condensers connect to filament and not to the grids. Ordinary round busbar can be recommended for efficiency and neatness, but, provided it is carefully used to avoid "bunchy" wiring, thin stranded flexible wire can be used instead. Glazite insulated busbar wire is also suitable for the purpose. When using plain busbar it is a good plan to have a few lengths of spaghetti covering on hand, so that the wires which are very close to each other may be insulated for safety. When all the wiring work is finished give each connection a good hard pull with the pliers to test it.

ALTERNATIVE GRID RETURN CONNECTION.

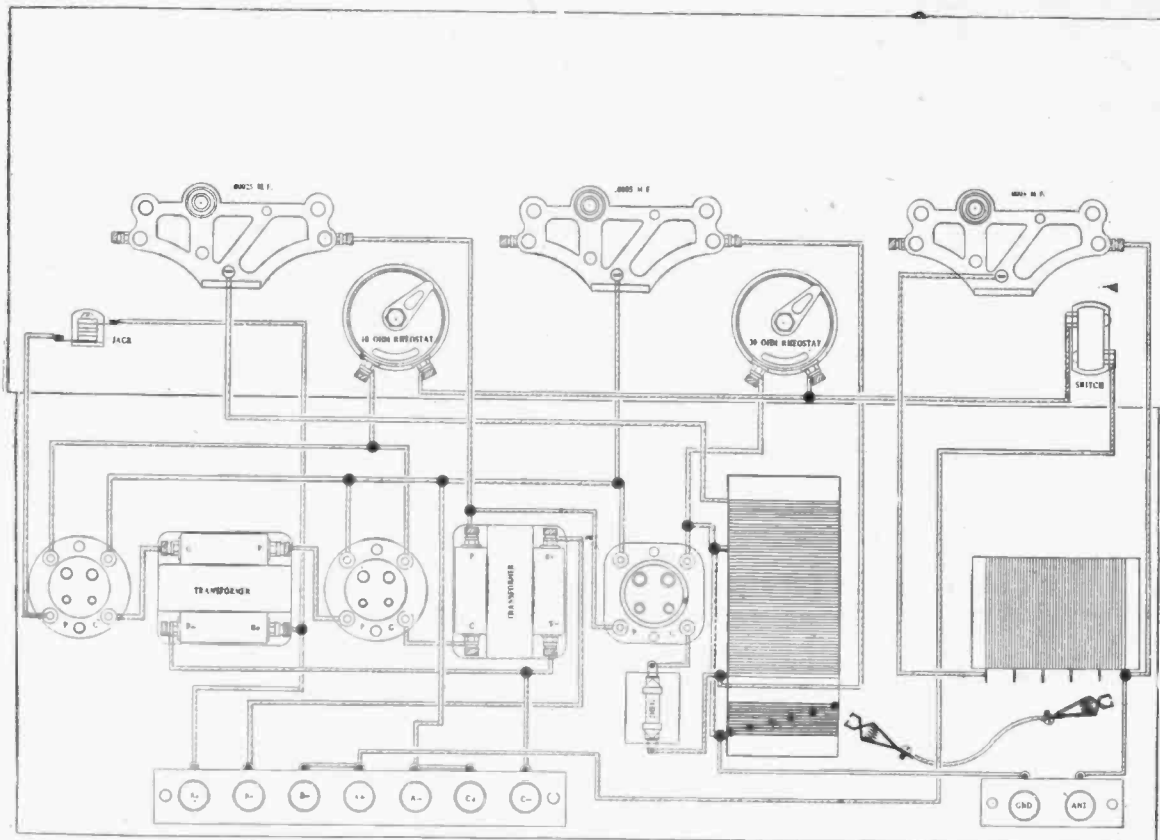
A detector valve will generally work better with a slight positive bias on the grid, and for this reason the grid return lead is usually connected to filament positive. The negative return is, however, often a more selective arrangement, and this was specified in the original Renown design. It has been found that the difference in selectivity is more than outweighed by the increased efficiency given by the positive return, so that this alteration is recommended. The new back of panel diagram reproduced in this article shows the return to positive. Those who have already made the set will only need to re-arrange their battery connections to correspond with the diagram—no actual alteration of the wiring will be necessary.

GRID LEAKS.

One of the most important items in a receiver is the grid leak. For general purposes a two megohm leak is recommended, and is suitable for standard valves, but in some cases a higher or lower resistance gives vastly improved results. Try the effect of a one, two, three, and five megohm leak, and retain that which gives the best results. There will be no need to purchase all these and have the useless ones on hand: your dealer will probably refund the price of those you do not wish to keep.

SHORT WAVES

Do not forget to order your next week's issue early. It will take the form of a special short-wave number containing much valuable data for the S.W. listener.



BATTERY VOLTAGES.

Either four or six volt valves may be used with equal results. The B battery voltages are not critical, but any detector valve has its best operating point, and therefore the detector tapping should be varied until the best results are obtained. When a B406 valve is used in the last socket 90 volts is suitable for the maximum tapping, but for greater volume as much as 150 volts, with a correspondingly increased C battery voltage, may be used.

TUNING.

The three variable condensers mounted on the panel are intended, one for a tuning condenser to select the stations, one for a wavetrapping control to eliminate interference, and the third for the reaction control, for volume and clarity. Commence tuning with all the condenser plates turned right in. Turn the middle condenser slowly out until the high-pitched whistle of a carrier wave is heard. Now turn the plates of the left-hand condenser until the whistle suddenly stops. Do not turn too far, but just to the point where the whistle will disappear. Next, turn the plates of the right-hand condenser quickly right out and gradually back until the desired volume is obtained. After tuning in the station in this way regulate all three condensers again for best results. We have assumed that the two connecting clips between the two coils were just clipped on at haphazard for the first trial. It will be necessary now to find their best position for both volume and selectivity. The wavetrapping and tuning condensers will have to be moved again for each different adjustment of the clips, but once the correct position for your own locality has been found the clips will not need further adjustment.

CHOICE OF APPARATUS.

Certain makes of apparatus were specified for the Renown Three, not because only those parts could be used, but be-

cause they had been carefully selected. The substitution of other parts is to some extent at the discretion of the builder, but for those who are not thoroughly versed in the theoretical application of radio apparatus strict adherence to the specifications is the only way to avoid disappointment.

USE WITH DYNAMIC SPEAKERS.

The normal volume from the Renown is more than sufficient for all ordinary purposes, but in some cases extra volume may be required. We have had several inquiries as to the amount of volume which could be obtained from the Renown with a power speaker. There would certainly be sufficient power for good operation of such a speaker but if great volume is required some little alterations will be necessary. At present there are two B battery positive terminals, one to feed the detector and the other to feed both amplifying valves. It will be advisable to have an individual feed for each valve, so that the best voltage adjustment can be made. Make the alteration in this way: You will see that a wire goes from the B positive terminal of the second transformer to the jack. Take this wire out of the set altogether. Now attach another wire to the jack at the point where the end of the discarded wire was connected, and connect the other end of it to an extra terminal, which will now be used for the maximum B battery voltage connection, feeding the last valve. Have another look at the transformers, and you will see that a wire connects their filament negative terminals together, and that another wire connects them to the C battery negative terminal. Remove these wires and leave the terminals free. Now connect a new wire from the filament negative terminal of the first transformer to the C battery negative terminal, and another wire from the same terminal of the second transformer to an extra C battery negative terminal. After making these alterations we have two more battery terminals than at the commence-

ment, one for the B battery and one for the C battery. It will now be necessary to procure a power valve for use in the last valve socket in place of the B406, and a Philips B405 will be a good one. This valve requires about 130 volts from the B battery for best operation, and about 18 volts grid bias. Adjust the voltage from both B and C batteries for each of the audio valves until you have the desired volume and purity of reproduction.

REPRODUCTION OF GRAMOPHONE RECORDS.

Excellent gramophone reproduction can be obtained by using a gramophone pick-up and amplifying through the set. The best way to do this is to provide two small terminals on the back of the baseboard, to which the pick-up can be attached. One terminal will connect by a wire to the grid terminal of the detector valve socket, and the other to filament negative. Very satisfactory amplification and perfect clarity are obtainable if a good loud speaker is used.

THE AERIAL.

So much has appeared in our columns from time to time on the subject of aerial systems that it should scarcely be necessary to dilate upon them at this juncture. It must, however, be mentioned, or, rather, reiterated, that an efficient aerial and earth are essential for good operation of any receiver. For the Renown we would recommend a straight wire of 3/20 or 7/22 copper, about 75 feet long, and as high as it can be arranged—35 feet is desirable, but unless plenty of space is available everyone cannot manage these dimensions. Where a poor aerial is unavoidable, make up for it as much as possible by seeing to it that the aerial is well insulated, and that a good earth is used. Soldering to a waterpipe is usually the best method, but a quantity of metal or a sheet of galvanised iron buried in about three feet of permanently moist ground is even better.

Make Your Present Set an

All Electric

With These Accessories



PHILIPS 1017
TRICKLE CHARGER

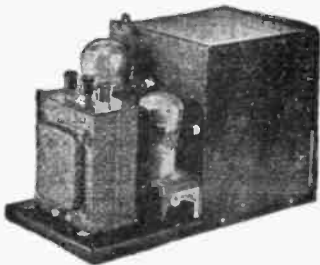
£3'10'-

PHILIPS 3003 B & C
ELIMINATOR

£10'15'-



OR—convert it to an alternating current operated set, with a—



PHILIPS POWER
PACK

£12'-'

All Obtainable on Easy Terms if Desired

ALL TYPES OF A C VALVES NOW AVAILABLE

Open Till 9 p.m. Friday

HOME RECREATIONS (Australia), LTD.

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

AUSTRALIA'S LARGEST

RADIO MANUFACTURERS

EMMCO



PURATONE
TRANSFORMER.



Wonderful value, maximum volume without distortion.

PRICE 15/6

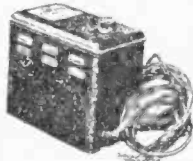
MELLO DRUM
CONTROL.



Will carry five or more condensers.

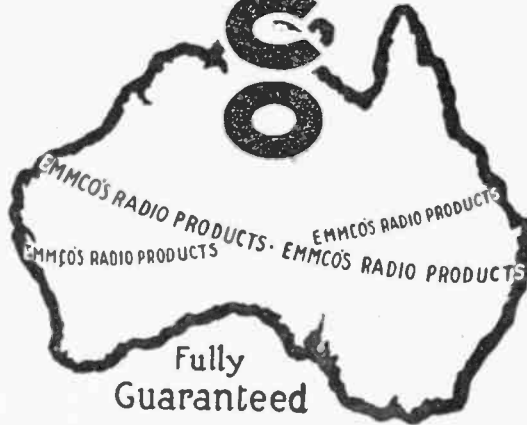
PRICE 25/-

MAXUM
"B" ELIMINATOR.



An improved "B" Eliminator. Will operate up to seven-valve set.

PRICE £8/15/-



OVER 200 RADIO PARTS

Fully
Guaranteed

HOME AMPLIFYING UNIT



Will improve the reproduced tone qualities of your Phonograph Records beyond conception. It recreates most perfectly every note of the musical scale with unusual clarity, and eliminates the annoying needle scratch.

The unit is equipped with a volume control, which allows for the minimum and maximum volume. Finished in an attractive all metal case, crystalline finish. Use a Baldwin Electric Pickup to ensure the best results from the amplifier.

PRICE Without Valves £18/10/-

NEW BAKELITE RHEOSTAT.



Very compact size Bakelite Rheostat, 6, 10, 20, and 30 ohms. Price 4/6.

Potentiometer, 400 ohms, 5/6.



SUPER STRAT
CONDENSER.



Most perfectly constructed and efficient Condenser. PRICE: .0005 12/6 .00025 and .00035 12/-

MELLO METAL
VERNIER DIAL.



Highly efficient Vernier Dial, with handsome escutcheon.

PRICE 9/6

"A" SOCKET POWER SUPPLY.



Works direct from the A.C. mains. Eliminates the "A" Battery.

PRICE £12/12/-

Made by
**Electricity Meter
Mfg. Co., Ltd.**

Sole Factory Representatives:
**Manufacturers Products
Pty., Ltd.,**

SYDNEY, 137 Clarence St. 'Ph. BW1328.
MELBOURNE: Sugden Place.

THE OUTPUT TRANSFORMER

Curves Ahead

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

In order to obtain the greatest undistorted output from a three electrode valve coupled to a speaker it is necessary for the speaker windings, looked at from the plate circuit of the valve, to present an impedance equal to twice that of the valve plate circuit impedance. In the case of the moving-coil speaker, in which the impedance of the coil is quite low, it is necessary to employ a step-down transformer from the valve in order to obtain the desired impedance relationship. It is common practice to make the impedance of the secondary of the output transformer equal to that of the speaker at some selected low frequency. When looked at from the primary winding the effective impedance will then be equal to that of the speaker winding multiplied by the square of the turn ratio. Assuming that the impedance of the speaker winding is known, we can work back the other way in order to find the desirable ratio for a given valve impedance. The ratio is determined by taking the square root of twice the valve plate impedance and dividing it by the speaker winding impedance. Of course, it must be remembered that if there are power valves in parallel the effective valve impedance will be that of one valve divided by the number of valves, whereas if the valves are in push-pull the effective impedance will be that of one valve multiplied by two. A push-pull stage with valves in parallel would be considered in the same way. As an example, the effective impedance of four 2000 ohm valves arranged in push-pull, with two valves in parallel on each side, would be 2000 ohms.

In connection with this subject, we present an interesting set of curves released recently by Messrs. Ferranti, from which the desirable ratio of the output transformer may be found providing the plate impedance and the speaker impedance are known quantities. Unfortunately there is rather a catch in all of this, however, since it is rare indeed to run across a speaker for which the impedance of the coil is given even at one frequency—let alone at a group of frequencies.

And that reminds us of another matter. In the operation of the moving-coil speaker it is quite general practice, we hope, to use a good amplifier with a reasonably high undistorted output rating. Quite the best way of arriving at such an amplifier is to provide a push-pull output amplifier with a pair of modern valves suited to the particular level of volume required. Such valves usually have a plate impedance of 2000 ohms, and the effective output impedance is therefore 4000 ohms. With such an amplifier, strange to relate, one is really at a disadvantage at the present time on account of the great difficulty in obtaining output transformers truly suited for coupling to the speaker coil. The thing that has stumped us for some time is the fact that the moving-coil speakers are not all built in two models, one with a transformer suited for a single 2000 ohm valve, and another with a divided primary transformer designed to operate from a pair of 2000 ohm valves in push-pull. If the push-pull amplifier was a rare bird one could understand the lack of provision for it in the speakers. Push-pulling is no such rarity, however. It is undoubtedly used more generally throughout the world than the single valve—certainly in the sorts of sets and amplifiers which are used with moving-coil speakers.

It must be admitted that some push-pull output transformers for moving-coil speakers are obtainable, and that their turn ratio is in accordance with the requirements. There is no particular reason for believing, though, that the impedance of their secondary windings is suited for the particular speaker one is to use. Since transformer manufacturers rarely tell us anything about the character-

istics of the secondary, and since the speaker people tell us nothing about the coils, the selection and combination of the two remain, for the moment, very much of a hit or miss proposition.

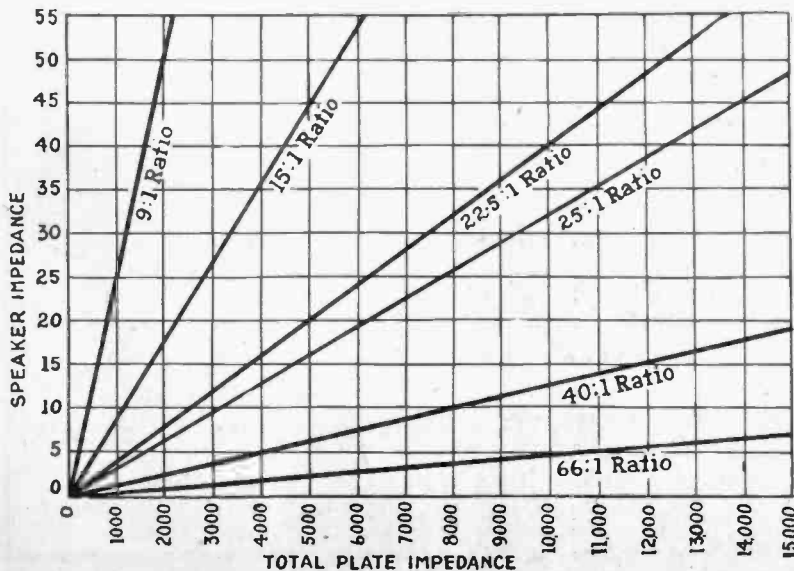
Unusual Interference

EXPERIMENTERS operating receivers with screen-grid radio frequency amplifiers, particularly when the input circuit is untuned, probably have experienced the curious form of interference which results from distant carriers being modulated by the output of nearby transmitters. The effect is one which has existed to some slight extent in some of the older types of receivers, but it has taken the screen-grid valve to make a real problem of it. The interference has nothing whatever to do with the selectivity of the receiver, in the usual sense of the word, and it may be experienced with a receiver in which the selectivity has been carried to the highest degree possible.

With some of the screen-grid receivers on which we have been doing experimental work there has been ample separation between, say, 2BL and 3LO. There would be, perhaps, four or five degrees on the dial of absolute silence between the two stations. Nevertheless, whenever the receiver was tuned to 3LO there would be interference from 2BL or, possibly, 2FC. In another receiver, with an untuned input circuit, the selectivity was sufficient to separate 3UZ and 2GB without difficulty. When the receiver was tuned to 3UZ, however, there would be a background of music from 2FC.

This form of interference is causing considerable interest in engineering circles, and means are being investigated by which it can be avoided in highly sensitive receivers. The trouble actually occurs in the first radio frequency amplifying valve, in the circuits of which the weaker signals are modulated by the very strong ones. The remedy apparently is in the use of a very selective tuned input circuit to this first valve, which will reduce the possibility of the first grid being excited from unwanted local stations. It has been found that in some instances the ordinary tuned input coupling device does not permit an entire elimination of the trouble, and use is already being made in some of the latest receivers of a band-pass filter ahead of the first radio frequency valve. Such a selective input also avoids the common trouble of heterodyne whistles resulting from the beating of the carrier of a desired station with harmonics of local carriers generated in the plate circuit of the first valve.

It is evident that close attention must be paid to these possible troubles in the operation of a sensitive screen-grid outfit.





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, 101-114 Clarence Street, Sydney. Branches at Newcastle, Melbourne, Adelaide, Perth, and N.Z. Cities. Sole Agents at Brisbane and Hobart.

How Valves Detect, Amplify, and Oscillate

Radio Proficiency

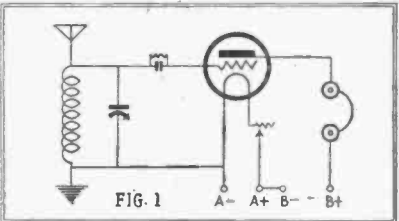
Continuing the series of articles for the A.O.P.C. course

IN FIG. 1 we see a circuit which consists of a tuning coil, coupled to the grid circuit of a valve. In series with the grid of the valve is a fixed condenser and grid leak. The other end of the coil (grid coil) is connected to the filament, and a condenser is shunted across the coil.

This part of a detector circuit is termed the grid circuit. That part that connects to the filament is termed the "grid return," since it is by this path that the electrons which accumulate on the grid are returned to the filament.

The whole of the grid circuit is the "input circuit" of the valve. Variations in grid voltage will cause variations in plate current, as previously explained in detail.

The filament is supplied with current from a small battery, termed an "A" battery. The



head-phones and plate are supplied with current from a "B" battery, which is usually about twenty times as great in voltage (but much smaller in amperage) than the "A" battery. This part of the circuit is the "output." If the grid return is connected to the negative side of the "A" battery the grid return is said to be "negative" and when the grid is in this condition plate current is reduced proportionally. The small changes in grid polarity and voltage produce large changes in an opposite direction in the plate circuit.

An extra coil which may be coupled inductively to the secondary is known as the primary, or aerial, coil.

Just what happens when a radio signal is received is here explained. Radio-frequency oscillations are set up in the ether by a transmitter. These introduce oscillating currents in the aerial, and these currents pass through the aerial coil on their way to earth.

Now, we know that when a current is passed through a coil a magnetic field surrounds that coil. When the secondary is tuned by means of the variable condenser till it is in resonance with the primary, a certain point is reached where there is a maximum voltage across the condenser and coil, since the current is induced in the secondary by the coupling of the two coils. Remember that the signals are still at radio frequency. As one side of the secondary connects to the grid of the valve through a grid condenser and leak, one side of the grid condenser will alternately be negative, then positive.

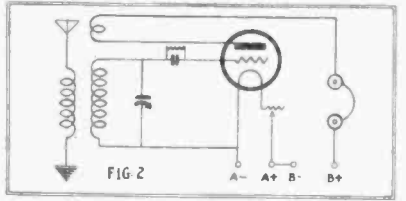
At a given instant, that side of the grid

condenser nearest the secondary is positive, the other plate (or alternate plates) of the grid condenser takes on a negative charge of equal value, by robbing the grid of some of its electrons. This leaves the grid positive with respect to the filament. The resistance of the grid-leak is sometimes as high as ten million ohms (ten megohms), and seldom less than one megohm (one million ohms), and is thus so high that practically no charge is lost through leakage in the very small time required for each half-oscillation. When the grid is positive there will be a momentary increase in plate current. As soon as the negative half of the oscillation is impressed the other side of the grid condenser becomes positive, and the grid itself has a charge of electrons. The negative grid repels further electrons, though it holds those it has received.

Thus the result of continued damped or modulated group of oscillations is to make the grid more or less negative, causing a fluctuating plate current. Between every group of oscillations the negative charge leaks off the grid through the grid leak, allowing the plate current to increase. When receiving signals modulated by speech, the process becomes continuous. A valve can detect without the grid condenser and leak, by substituting a small battery (called a "C" battery), to put a negative bias on the grid of the detector valve. This method of detection is termed "anode bend" detection.

AMPLIFIERS

The general arrangement of a transformer-coupled amplifier was discussed in one of the late numbers of "Proving Radio." Sev-



eral valves can be used one after another in an amplifier, though two valves and two transformers constitute a practical unit when transformer coupling is used. With more transformers, distortion is liable to occur.

There are other methods of coupling amplifiers. Resistance coupling is often used. The resistance unit takes the place of the transformer. For the primary a 100,000-ohm resistor is used, and a 1-meg (down to a quarter megohm) leak for the secondary, depending on the ratio required. A .006 or .01 fixed condenser is connected between the resistors.

Maximum voltage amplification is desired in most amplifiers. Between the last step of an amplifier and the loud-speaker, however, we want maximum undistorted power transfer. This is accomplished by making the plate impedance of the output valve half that of the impedance of the winding on

the loud-speaker. This often necessitates the use of a step-down output transformer.

OSCILLATORS

Valves are often used to generate high-frequency undamped oscillating currents. This is accomplished by adding an additional coil in the circuit (see Fig. 2), which feeds back some of the energy from the plate to the grid circuit. The frequency of the oscillation will depend on the L.C. in the secondary. There are other methods, all of which are termed "methods of regeneration," and which are incorporated in various radio receivers.

REGENERATION

Every valve has some capacitance between the elements (Fig. 3). When there is a coil in the plate circuit there is bound to be a reactance voltage drop across this coil. The voltage couples some energy back to the grid circuit through the grid-plate capacitance, and regeneration or "feed-back" is thus accomplished to a certain extent.

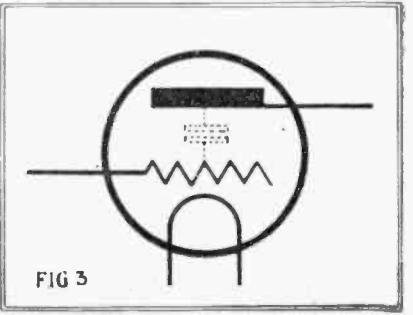
Oscillation, however, only takes place when there is enough feed-back from the output to the input circuits, so that the action is continuous as long as power is supplied and the coupling is sufficient, and where the feed-back is sufficient to compensate for losses in the circuit.

The response to weak signals is greatly increased by using regeneration, because the original voltage impressed on the grid is greatly increased by the feedback.

Transmitters are required to oscillate strongly. A receiver for C.W. should just oscillate. A receiver for modulated telephony should not oscillate, but often should be adjusted so that there is maximum regeneration without oscillation.

In some receivers "neutralisation" is resorted to, in order that the oscillation effect may be eradicated entirely.

An important fact that must be clearly understood by the A.O.P.C. aspirant, and one which is generally confused, is that a regenerative receiver is not necessarily an oscillating receiver. Remember this, a receiver will not oscillate unless regeneration is enough to provide compensation for the losses in the circuit.





Do the Home Jobs Yourself!

Keep the Money in Your Pocket!

In thousands of homes "THE AMATEUR MECHANIC" is proving that expenses can be cut down, and that without any previous experience, you can, by its help, make or repair any article in or about your home.

THE AMATEUR MECHANIC

is a thoroughly practical and workmanlike guide. It teaches you how to do each job properly. The instructions are printed in clear and simple language, and everything is so clearly explained with the aid of 6000 "how to do it" illustrations that you will find everything perfectly easy. Neither skill nor previous experience is necessary. If you have the will "THE AMATEUR MECHANIC" will show you the way.

400 MONEY SAVING JOBS

Here are a few you can do

Make and fix roller blinds—Paint and paper a room—Lay carpets—Repair a wire mattress—Overhaul a motor cycle or pedal cycle—Re-tyre and renovate a perambulator—Re-upholster settees, easy chairs—Make and install a wireless set, etc.—How to cure damp walls, leaky roofs, and smoky chimneys—How to make garden frames, garden furniture, and garden paths—How to mend windows, and to make, mend and strengthen locks and bolts—To clean, overhaul, and repair motors and motor cycles, to install wireless telegraphy, electric light, etc.—To work in every kind of metal—To etch on brass.

Wireless Subjects Included

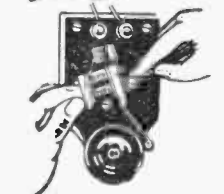
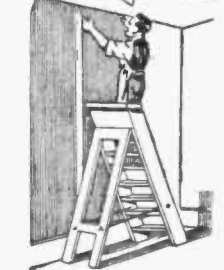
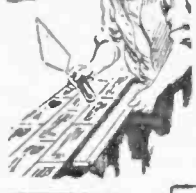
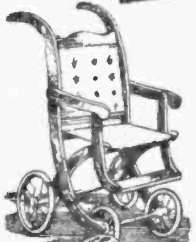
Conduction and Induction Systems—Radiation Systems—Tuning and Resonance—Oscillatory Circuits—The Marconi Coherer—A Simple Analogy—Transmitting—Receiving—The Crystal Detector—Four Types of Transmitting Apparatus—The Thermionic Valve—Receiving Continuous Waves—Logical Sequence of the Information—Aerials—The Single-wire Aerial—The T-type Aerial—The Twin-wire Aerial—The Earth Connection—Wave-length of Aerial—Making a Long-distance Crystal Receiving Apparatus—Specification—The Tubular Condenser—The Variable Condenser.

FREE EXAMINATION — — Easy Terms

The repairs you can do with this book to guide you will save you many times its cost, and afford you the utmost satisfaction. Thousands of people are buying copies. We offer to send you a complete set at our risk and expense, and without any obligation to you whatsoever, for 7 days' FREE examination. If you decide to keep it, the cost is only 4d. a day! Write for FREE prospectus and details of our FREE examination offer and easy payment plan.

**POST THIS
COUPON
NOW**

TEAR HERE



Coupon Brings FREE BOOKLET

Waverley Book Co., G.P.O. BOX 3287PP.
12 Spring Street, Sydney. SYDNEY.

Please send me your illustrated prospectus of "The Amateur Mechanic" and full details of your FREE examination offer and easy payment plan. It is clearly understood that this does not involve me in any obligation whatsoever.

NAME

ADDRESS

Phoning Under the Atlantic

Cable companies are to meet competition from wireless by employing trans-Atlantic underwater telephony.

THE "Daily News" (London) learns that tests will shortly be carried out in the Atlantic with specially manufactured lengths of new cable, intended to carry both telegraphy and telephony.

For some time past negotiations have been in progress between the British Post Office and the American Telephone and Telegraph Company, which proposes to lay a new cable across the Atlantic at a cost of about £3,000,000, having channels for both telegraphy and telephony. So far, no submarine cable has been laid for telephone purposes of greater length than 100 miles. The new cable will extend over 1800 miles.

Mr. W. T. Leech, Director of Telegraphs and Telephones in Britain, said that at present the negotiations were dormant because "lengths of cable are being manufactured to the specification of the American company for both sea tests and electrical tests."

When ready the short cable lengths will be sunk some 3½ miles out in the Atlantic, and certain electrical tests also will be carried out.

Although it has been fairly established that the cable can carry both telegraphy and telephony, it is not yet certain that it will take both at the same time.

£4,000,000 IN RESEARCH.

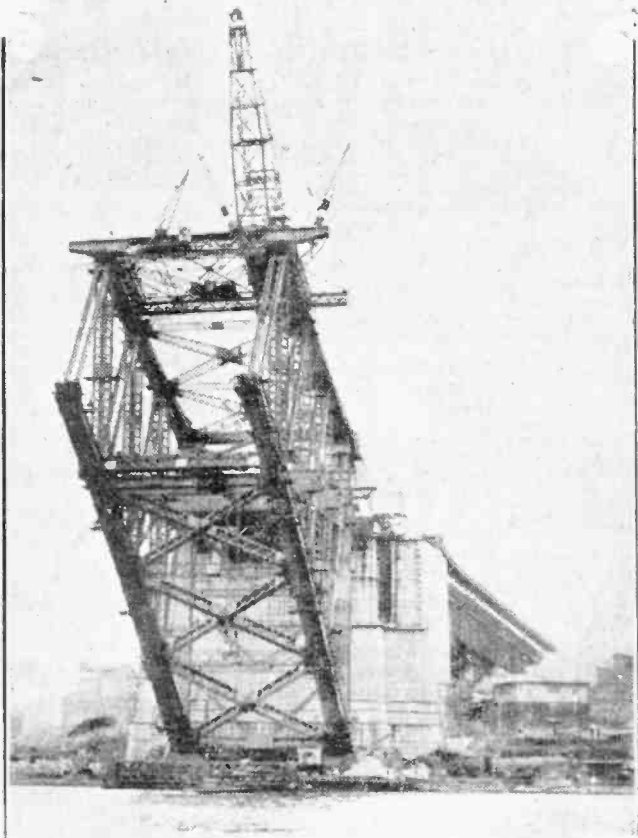
The American company has carried out all the research for the work. Some £4,000,000 is spent annually, and about 3500 persons are engaged in research by the company, at the Bell Telephone laboratories. The American Telephone and Telegraph Company administers the Bell Telephone system of the United States.

The British Post Office is interested in the new cable from the telephone point of view, though it will not join in financially until after the cable has been laid and proved a success.

It is hoped, Mr. Leech said, that the new cable will stabilise the Trans-atlantic telephone service. At present the service is not available at all times. In future a 24-hour service on all 365 days of the year may be provided.

It is pointed out that, while certain secrecy devices have been worked out by Post Office engineers to secure privacy for telephone conversation wirelessly across the Atlantic on the present system, telephony by means of the cable will be absolutely private. Thus, the Premier of Great Britain and the President of the United States would be able to converse between London and Washington without fear of the line being "tapped" and their talk being overheard.

The cable, it is claimed, will carry 500 words a minute. It is expected that it will take two years to complete from the time work is started.



Dr. Bradfield, Mr. Norman Lyons, and Mr. C. R. Hall will describe the N.S. Harbor Bridge on Sunday, October 30. Further talks from the works of Messrs. Dorman, Long, and Co., will be given on October 30.

A.B.C. Women's Association

TENNIS championship matches for the A.B.C. Women's Association tennis clubs will be held at the Lawn Tennis Courts at Rushcutters' Bay on the last Friday in October and the first Friday in November. Matches will progress throughout the day. There will be an open ladies' doubles American tournament run in conjunction with these matches, so that all members may be out there to see their champions play.

There will be an "A" grade championship and a "B" grade championship. The various clubs are now playing off to find their competitors. Mr. Jones and Miss Marjorie Cox, of the Sports Depot, are presenting racquets as prizes. The American tournament is open also to non-members of the association.

Mrs. L. C. Norton, better known as "Priscilla," the founder of the needlecraft club of the association, of which fifty women have become members through the winter, has arranged that the club will now meet in the Botanic Gardens, instead of the A.B.C. Club Room, where they will continue their studies of fine needlecraft, moderated, as usual, with afternoon tea.

The latest move of the association is an attempt to raise £50 for the Crown Street Women's Hospital. Each member is endeavoring to raise £1. It looks as though much more than £50 may be obtained.

The dancing class still swings along, although not on quite so many feet as in the middle of winter; yet the faithful few go regularly on Friday afternoons to Mr. Carl Thomas' studio.

Swimming activities commence in about a week's time. The North Shore members of last season's swimming club want to start at Balmoral as soon as possible. More news of swimming club formation will be published next week.

Miss Varley is opening three new junior tennis clubs next Saturday, at Lakemba, Vaucluse, and Willoughby. In each case there will be an expert coach to teach beginners. These clubs, which are being established under the Girls' Radio Club conducted on Thursday evenings on 2BL by Miss Varley, have progressed remarkably. Branches already established are at Strathfield, Coogee, Rockdale, and Penhurst.

JOIN THE M.A.C.A.

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

MODEL AEROPLANE CLUB OF AUSTRALIA.

C/o National Broadcasting Company, Market Street, Sydney.

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

(Your name printed clearly.)

Age Address

Town State

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

Readers who are interested in the series of Model Aeroplane articles which have been appearing in these pages in conjunction with the sessions broadcast by Mr. Norman Lyons are invited to enrol as members of the above club. Next week Mr. Lyons will give details for an easily made heavy duty pusher plane.

Local Programmes, Friday, October 11

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: To-morrow's sporting events.
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: Francis Jackson will speak on "Edmund Burke—2."
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: Luncheon Hour Music Quartette.
2.0: Stock Exchange, second call.
2.2: A glance at the afternoon "Sun."
2.7: Popular Education—L. Roberts.
"Epics of the Boer War."
2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: The 2FC Instrumental Trio.
2.40: Florence Yates, contralto—
(a) "Two Eastern Songs" (Lang).
(b) "Happy Song" (Del Riego).
2.47: The 2FC Instrumental Trio.
2.53: Coralie Poolmann, mezzo—
(a) "Pleading."
(b) "A Little Coon's Prayer."
3.0: From the Studio—The 2FC Instrumental Trio.
3.40: Florence Yates, contralto—
(a) "Vale" (Russell).
(b) "Mifanwy" (Forster).
3.47: The 2FC Instrumental Trio.
3.54: Coralie Poolmann, mezzo—
(a) "Midst the Petals."
(b) "Pale Priest Beside the Shrine."
4.0: "Redgum" will speak on "Gardening."
4.15: The 2FC Instrumental Trio.
4.28: Stock Exchange, third call.
4.30: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" stories, told by the "Hello Man," assisted by 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 from the "Sun"; truck bookings.
7.58: To-night's programme.

THE EVENING PRESENTATION—8.0 to 11.30.

2FC listeners will enjoy a programme of organ music to-night, with novelty piano solos to follow, and fresh vocal items by the A.B.C. Male Quartet. The feature of the evening is W. A. Oldfield's "Impressions on English Cricket while Abroad." At 9.15 we cross to Melbourne for the relay from 3LO. Through 2FL the National Broadcasting Orchestra will play popular selections, and there are well-known ballads with orchestral accompaniment.

- 8.0: "Big Ben"; the A.B.C. Male Quartet—
(a) "Dittie and Dreaming" (Van Alstyne).
(b) "Little Brown Baby" (Low).
8.10: From Fullerton Memorial Church—Organ recital arranged by Ronald Marston—
(a) "March" from "The Merchant of Venice Suite."

- (b) "Rustic Wedding Fantaisie" (Wolstenholme).
(c) "Scottish Airs" (with bagpipes imitations and chorus by the Fullerton Choir).
(d) "Evensong" (Easthope Martin).
(e) "Soldiers' Chorus," from "Faust."
8.40: From the Studio—Maisie Otley, novelty pianist—
(a) "Russian Rag" (Cobb).
(b) "Coaxing the Piano" (Confrey).
(c) "Dolly Dimples" (Alter).
8.48: The A.B.C. Male Quartet—
(a) "Dear Old Moonlight" (Lemonier).
(b) "Medley of Old Minstrel Choruses."
8.55: Maisie Otley, novelty pianist—
(a) "Sky Blue" (Bradley).
(b) "Cornfed" (Wall).
(c) "Monkey Biznez" (Johnson).
9.1: The Country Man's weather session—
(a) New South Wales forecasts.
(b) Inter-State weather synopsis.
(c) "The Yachtsman's and Fisherman's forecast."
9.2: W. A. Oldfield in "My Impressions of English Cricket While Abroad."
9.17: Relay from 3LO, Melbourne.
10.15: From the Studio—Announcements; late weather forecast.
10.20: From the Hotel Australia—Cec. Morrison's Dance Band.
11.30: National Anthem. Close down.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

- 8.15: C.P.O. chimes and announcements.
8.18: 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. Announcements.
12.2: Luncheon-hour music.
1.0: Afternoon news from the "Sun."
1.5: Studio music.
1.15: Women's interest talk, Mrs. Meredith-Atkinson—"An Australian in Venice."
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—"What's in the Home Land," by C. R. Hall.

- 2.45: The Magic Carpet series—Major Sandford-Morgan. "A Visit to the Yeazides."
3.0: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
3.12: From the studio. Patricia Crosby, popular vocalist—
(a) "Where is the Song of Songs for Me?" (Berlin).
(b) "Thinking of Me Thinking of You" (Marvin).
3.19: Melody memory.
3.22: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
3.32: From the studio. Edward Cockman, violinist—
(a) "Bereuse Op. 17" (Danbe).
(b) "Valse Bluette" (arr. Auer).
3.39: Songs of to-day.
3.42: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
3.52: From the studio. Theresa Carmo, songs with ukulele—
(a) "Kentucky Home."
(b) "To You" (Speaks).
4.0: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
4.12: From the studio. Patricia Crosby, popular vocalist—
(a) "Carolina Moon" (Davis and Burke).
(b) "She's Funny That Way" (More).
4.19: Edward Cockman, violinist—
(a) "In an Eastern Garden" (Ronald).
(b) "Serenade" (Pierne).
4.26: Theresa Carmo, songs with ukulele—
(a) "Pale Moon" (Logan).
(b) "Star Eyes" (Speaks).
(c) "My Darling" (Grassman, Sizemore, Lombardo).
4.33: From the ballroom of the Oriental—Sydney Simpson's Syncopaters in dance music.
4.45: The Trade Hour—Demonstration music.
5.45: Weather information. Close down.
THE DINNER HOUR—6.15 to 7.55 p.m.
6.15: Dinner music hour.
6.45: The A.B.C. Younger Set session—Boy Scouts, conducted by Mr. Norman Lyons.
7.5: A talk on "General Sporting," by Claude Corbett.
7.15: The Country Man's Market Session—Wool, wheat, stock, farm produce, fruit, vegetables, poultry markets.
7.30: Austradio musical reproduction.
7.45: Celebrity music.
7.55: What's on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.

- 2BL to-night offers a programme of light orchestral music and well-known songs. Contrasting with the organ music through 2FC. At 9 o'clock W. A. Oldfield will tell 2FC listeners of his cricket impressions abroad.
8.0: Myra O'Neill, soprano.
"Break o' Day" (Wilfrid Sanderson).
"The Cuckoo" (Lisa Lehmann).
"Bird of Love Divine" (Haydn Wood). (With orchestral accompaniment.)
8.7: G. Vern Barnett, pianoforte solos.
8.17: The National Broadcasting Orchestra.
8.32: Oliver King, basso—
(a) "Drink to Me Only" (Quilter), orchestral accompaniment.
(b) "Pleading" (Anderson), orchestral accompaniment.
8.39: Vincent Aspey, violinist—
"Spanish Dance" (Chiabrano-Corti).
"The Chase" (Cartier-Kreisler).
8.40: The National Broadcasting Orchestra.
9.0: Norman Wright, tenor—
"Mountain Lovers" (Squire).
"I Hear You Calling Me" (Marshall). (With orchestral accompaniment.)
9.7: G. Vern Barnett, pianoforte solos.
9.14: Oliver King, basso—
(a) "On the Road to Mandalay" (Speaks).
(b) "Ship of Rio" (Keel).
9.21: Vincent Aspey, violinist—
"Preludium and Allegro" (Pugnani-Kreisler).
"Serenade" (Schubert).
9.28: Late weather forecast for the man on the land.
9.30: Wallace Nelson will continue his series, "Humor of Parliament."



W. A. Oldfield, international cricketer, who will talk on impressions abroad at 9.2 to-night from 2FC.

9.45: Myra O'Neill, soprano—
 "Nagasaki Nights" (J. Lewis Browne).
 "A Bird-note is Calling" (Spross).
 "Song at Sunset" (Spross).
 (With orchestral accompaniment.)
 9.52: The National Broadcasting Orchestra
 10.7: Norman Wright, tenor—
 "Thy Beaming Eyes" (McDowell).
 "How Did Everybody Know?" (Ewing)
 "To Diacene" (Del Riego).
 10.14: The National Broadcasting Orchestra.
 10.25: Late news from the "Sun"; late weather forecast.
 10.30: Close. National Anthem.

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 Miss Helen J. Beegling. 11.30: Music. 11.45: Close down. 2.0: Music. 2.5: Women's radio service, by Mrs. Dorothy Jordan. 2.50: Movie know-all. 3.0: Address by Miss Mary Rivett. 3.30: Close down. 5.15: Children's session, by Uncle George. 7.0: Music. 8.0: Miss Gwen Simonsen, contralto. 8.7: Symphony Orchestra. 8.15: Madame Betts-Vincent in an illustrated talk on music. 8.30: Mr. Clement Hosking, baritone. 8.37: Mr. Jack Win and Mr. Heath Burdock, humor. 8.42: Instrumental Trio. 8.50: Miss Dorothy Rose, soprano. 9.0: Weather report. 9.3: Address. 9.15: Symphony Orchestra. 9.20: Miss Gwen Simonsen, contralto. 9.30: Mr. Jack Win and Mr. Heath Burdock, humor. 9.35: Mr. Clement Hosking, baritone. 9.45: Instrumental music. 9.50: Miss Dorothy Rose, soprano. 10.0: Instrumental music. 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Paling's Building, Ash St., Sydney (Wavelength, 267 Metres).
MIDDAY SESSION.—12.30: Request numbers. 1.0: Chimes; music. 1.15: Talk on

INDEX	
To Local Programmes	
FRIDAY, OCTOBER 11.	
2FC, 2BL	24
2GB, 2UW, 2KY, 2UE	25
SATURDAY, OCTOBER 12.	
2FC, 2BL, 2GB, 2UW, 2KY, 2UE	32
SUNDAY, OCTOBER 13	
2FC, 2BL, 2GB, 2UW, 2UE	36
MONDAY, OCTOBER 14.	
2FC, 2BL	36
2GB, 2UW, 2KY, 2UE	39
TUESDAY, OCTOBER 15.	
2FC, 2BL, 2GB, 2UW	42
2UW, 2KY, 2UE	47
WEDNESDAY, OCTOBER 16.	
2FC, 2BL, 2GB, 2UW	46
2KY, 2UE	47
THURSDAY, OCTOBER 17.	
2FC, 2BL, 2GB, 2UW	50
To Interstate Programmes	
FRIDAY, OCTOBER 11.	
3LO, 3AR, 3DB, 4QG	26
5CL, 6WF, 7ZL	27
SATURDAY, OCTOBER 12.	
3LO, 3AR, 3DB, 4QG, 5CL, 6WF, 7ZL	34
SUNDAY, OCTOBER 13.	
3LO, 3AR, 3DB, 4QG, 5CL	37
MONDAY, OCTOBER 14.	
3LO, 3AR, 3DB, 4QG, 5CL, 6WF	40
TUESDAY, OCTOBER 15.	
3LO, 3AR, 3DB, 4QG, 5CL, 6WF	44
WEDNESDAY, OCTOBER 16.	
3LO, 3AR, 4QG, 5CL, 6WF	43
THURSDAY, OCTOBER 17.	
3LO, 3AR, 3DB, 4QG, 5CL, 6WF	52

homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme. **EVENING SESSION.**—5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes; request numbers 8.0: Popular songs and numbers. 9.0: Chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

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

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

2UE

Broadcasting Station 2UE, Everett Street, Maroubra Sydney (Wavelength, 283 Metres).

EARLY MORNING SESSION.
 7.15: Breakfast Time Hour Orchestral music. 8.0: Clock and chimes. 8.1: Musical items. 8.30: Weather forecast. Close down.
MIDDAY SESSION.
 11.30: Old-time musical items. 12.30: Announcements. Close down.
AFTERNOON SESSION.
 1.0: Orchestral music. 1.45: Organ recital. 2.0: Vocal and instrumental Music. 2.30: Close down.
EVENING SESSION.
 7.15: Orchestral and vocal dinner music. 7.58: Programme announcements. 8.0: Clockland chimes. 8.1: Overture, "La Traviata" selections. 8.11: Vocal and instrumental selections. 10.15: Close down.

SPECIAL ANNOUNCEMENT

SUPERHETERODYNE RECEIVERS

FOR THE INFORMATION of manufacturers, dealers, and users of Superheterodyne radio receiving sets, we would state that the well known principle of double detection employed in these receiving sets is covered by Commonwealth Patent No. 16,552/20, and is owned and controlled by Standard Telephones and Cables (Australasia), Limited.

A licence under this patent is therefore required by all manufacturers, dealers, and users of Superheterodyne radio receiving sets, full information regarding which will be supplied on application to

Standard Telephones & Cables (A/sia.) Ltd.

82/96 MYRTLE STREET, CHIPPENDALE, SYDNEY

Tel., M2336-7-8

Interstate Programmes, Friday, October 11

3LO

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

EARLY MORNING SESSION.

7.0: Melbourne Observatory time signal. 7.1: Shipping news. 7.3: Physical exercises to music. 7.20: Reproduced music. 7.45: Market reports. 7.53: What's On Today? 7.55: News. 8.0: Time signal. 8.1: Arrival times of express trains. 8.2: Musical interlude. 8.15: Close down.

MORNING SESSION.

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

MIDDAY SESSION.

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

EDUCATIONAL SESSION.

2.0: Strange people of strange countries—Mr. H. J. O. Esmonde. 2.15: Musical interlude. 2.20: Gems of English literature—"Pope's Homer." Prof. G. H. Cowling, M.A. 2.35: Musical interlude. 2.40: A talk in German—Mr. E. Green, M.A., Dip.Ed. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: The Studio Light Orchestra—Selection. "The Rise of Rosie O'Reilly." 3.8: Jean Anthony, contralto—"A Blackbird Singing" (Brahm). "That's All" (Brahm). A short piano recital from the works of Chopin. 3.15: Eleanor Clapham, piano—"Ballade," Op. 23; "Valse," Op. 18; "Nocturne," Op. 9, No. 2; "Polonaise," 3.30: R. Nicholson, bass—"Shall We Remember" (Rayners); "The Toll-gate House" (Rowley). 3.37: The Studio Light Orchestra—"La Rosita" (Dupont); "Poupee Valsante" (Fouldin). 3.43: Bert Rav, comedian—Radio "Rays." 3.50: Bertha Jorgensen, violin—"Dream Dance" (Coleridge-Taylor). 3.56: Jean Anthony, contralto—Selected. 4.3: Studio Light Orchestra—"Serenata" (Tarenghi); "Children's Dance" (Lardelli). 4.10: R. Nicholson, bass—"She is all so slight" (Brahm); "A Jug of His" (Corri). 4.17: J. Barrle, flute—"Andante and Polonaise" (C. Le Thiere). 4.20: Bert Rav, comedian—A party of two. 4.25: Studio Light Orchestra—"Song," "M. W. ta" (Scherstinger); March, "Carnavalesque" (Friml). 4.30: Close down.

THE CHILDREN'S CORNER.

4.45: "Plain Peter" and "Rollicking Rita" are here again with a new stock of songs and stories. "Plain Peter"; birthday greetings. 6.20: Brave deeds by boys and girls—Lt.-Col. Pottlinger.

EVENING SESSION.

6.35: Musical interlude. 6.40: What's wrong with your radio?—Mr. H. Kingsley Love. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session—Stock Exchange information; Corn Exchange report; Associated Stock and Station Agents' official report; 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 Fruitgrowers' Association; citrus fruit prices, supplied by the Victorian Central Citrus Association; weather synopsis; river reports; rainfall data. 7.25: Gardening hints—The vegetable garden and seasonable hints. Mr. E. F. Cook. 7.40: The "Herald" news service. 7.45: Cecil H. J. Williams will speak on to-morrow night's events at the Stadium.

NIGHT SESSION.

8.0: 59th Battalion Band (Bandmaster, Sgt. J. Doherty)—March, "Colonel Bogey" (Alford). 8.5: Thos. George, bass—"The Two Grenadiers" (Schumann); Brian of Glenaar" (Graham). 8.12: 59th Battalion Band—A descriptive selection: Battalion marching past on a ceremonial parade from line, after review with orders (arranged by Capt. A. J. May); Marches, "Freedom and Honor" and "O. H. M. S." 8.24: A comedy in one act, by Horace Brighouse. Players: Sir William Rumboldt, Frank Ocboldstone; Edward Fosdick, F. Goddard; Dolly Wainwright, Miss Lucy Ahn; A tramp, John Cayne (Produced by John O'Keefe).

8.40: 59th Battalion Band—March, "Full of Go" (Hutchison). 8.45: Thos. George, bass—"The Trumpeter" (by request) (Dix); "The Knight's Song" (Shaw). 8.52: "The Sundowners" Quartette Party—"Lowestoft Boat." 8.56: J. Harcourt Bailey—"The Scene Shifter" (Pond). 9.0: "The Sundowners" Quartette Party—"The Song I Love" (Conrad). 9.4: Doreen Bevan—"The Happy Prince" by Oscar Wilde. A recital with a musical background. 9.24: 59th Battalion Band—Pianista, "Poetic Fancies" (Lalrent). 9.39: Pat McLean, entertainer—Child studies. 9.40: Charles O'Mara, In—"Irish Song and Story." 9.50: 59th Battalion Band—March, "Divisional Command" (Ord Rume). 9.55: Eric Welch will speak on—"To-morrow's Races at Caulfield." 10.5: Pat McLean will entertain with her ukulele. 10.12: British official wireless news; meteorological information; news of interest. 10.22: "The Fex" Dance Band. 11.30: God Save the King.

3AR

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

MORNING SESSION.

8.15: Musical reproduction. 8.45: Weather. 9.0: Chimes. 9.1: News service. 9.5: Musical reproduction. 10.0: Chimes. 10.1: British official wireless news. 10.10: Announcements. 10.30: Arnold Coleman at the Wurliizer. 10.50: A message for the day. 11.0: Close down.

MIDDAY SESSION.

12.0: Chimes. 12.1: Famous women—Ahlra Revn, the first woman playwright; Miss Lucy Ahn, B.A. 12.15: Fifteen minutes' syncopation. 12.30: Luncheon music, supplied by the A.B.C. Troubadours. 2.0: Close down.

AFTERNOON SESSION.

2.0: Brass Band—Regimental Band of His Majesty's Grenadier Guards. 2.8: "The Lullaby Boys"—Ford and Glenn. 2.16: Orchestral, Paul Whiteman's Orchestra. 2.20: Comedian—Milton Hayes. 2.32: Brass Band—Regimental Band of His Majesty's Grenadier Guards. 2.40: Baritone—Walter Kingsley. 2.48: Piano recital—Lee Sims and Adam Carroll. 2.56: Tenor—Walter Kirby. 3.4: Request numbers. 3.9: A chat by a prominent woman. 3.35: Musical interlude. 3.40: Home management—"The Home Maker, Dr Cecile Greil (New York). 3.55: Musical interlude. 4.0: A Woman's Wanderings through the Empire—Memsahib. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by the A.B.C. Troubadours. 7.30: What's on the Air To-night? 7.32: Sporting results. 7.35: Latest musical releases. 7.45: Ancient civilisations, "The Ruins

of Ancient Greece" Dr. E. Sweetman, M.A., Litt. 8.0: G.P.O. chimes.

NIGHT SESSION.

8.1: A.B.C. Christy Minstrels, in a complete change of programme; twenty minutes' delightful drolleries, syncopating songs, merry monologues, and jolly jokes. 8.15: Australian Problems in Economics—The Coal Problem—Mr. F. R. E. Maulden, B.A., M.E.C. Community singing, transmitted from the Malvern Town Hall. Conductor, Frank Hatherley. 10.20: Weather and news. 10.30: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (253 Metres).

MORNING SESSION.

11.0: Debroy Somers Band, "Good News Selection." 11.30: "La Vogue." "The World's Fashions and Fables." 11.35: Keith Falkner, "Mother Carey." 12.0: Jean Leusen and his Orchestra, "Thanson Napolitaine." 12.30: Helen Kane, "Don't be like that." 1.0: Plaza Theatre Orchestra, "A La Gavotte." 1.30: John Goss and Cathedral Quartet, "A Shallow Brown." 1.45: Close down.

AFTERNOON SESSION.

2.15: Bournemouth Municipal Orchestra, "Dancer of Seville." 2.30: Essie Auckland, "The Rosary." 3.0: Atwater Kent Radio hour—sponsored by A. G. Healing, Ltd. and E. T. Muir. 4.0: Close down. 5.0: The Happiness Boys, "Twisting the Dials." 5.30: G. T. Pattman (organ), "Firefly." 6.0: Children's requests. 6.30: Clyde Twelves (cello), "Elegie" (Massenet). 7.0: Oscar Grogan, "Carressing You." 7.15: Market reports. 7.20: J. H. Squire Celeste Octet, "Chant sans Paroles." 7.40: Mr. J. H. Scullin, leader of the Labor Party, will speak.

EVENING SESSION.

8.0: Coldstream Guards Band, "Hungarian Rhapsody" (Liszt). 8.30: Charles Hackett, "The World is Waiting." 8.40: Fritz Kreisler, "Tango." 9.30: Barba May, "Robin Adair." 10.0: Berlin State Orchestra, "Beautiful Galatea." 10.30: Murray Gibbs, "Red Rosebud." 10.40: News. 10.45: God Save the King.

40G

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

MORNING SESSION.

11.0: Music. 11.5: Social News. 11.15: Lecturette; cookery talk by the "Elegant Girl." 11.30: Music. 11.45: More social news. 11.45: Music. 12.0 (noon): Close down.

MIDDAY SESSION.

1.0: Market reports; weather information. 1.20: Lunch Club concert. 1.58: Special time signals. 2.0: Close down.

AFTERNOON SESSION.

3.0: Records. 3.30: Mail train running times. 3.31: Weather records. 4.15: This afternoon's news. 4.30: Close down.

EARLY EVENING SESSION.

6.0: Mail train running times; mail information; shipping news. 6.5: Records. 6.25: Commercial announcements. Red-time styles, conducted by the Bandman. 7.0: News in brief. 7.5: Stock Exchange news. 7.6: Metal quotations. 7.7: Market reports. 7.25: Fenwick'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 Studio Orchestra—characteristic, "Stepping the Scale" (Clark). 8.5: The Silkstone Apollo Club—chorus, "Excelsior" (Balfe). 8.10: A. Elliott (tenor)—"Good-night." 8.14: Hilda Roberts (harpiste)—"Variations" (Haydn). "Autumn" (Thomas). 8.24: D. Owens (elocutionist)—"The Eleven-Sixty-Nine." 8.30: The Silkstone Apollo Club—"It Was a Lover and His Lass" (Morley). 8.35: Mary McNeish (soprano)—"The Pipes of Pan" (Monckton). 8.39: The Silkstone Apollo Club—"Scots Wha' Hae." 8.45: Thelma Marsh (pianiste). 8.50: The Studio Orchestra—violin and clarinet interlude, "Manresque Caprice" (Boccalari). 8.55: The Silkstone Apollo Club—"True Till Death" (Scott-Gatty). 9.0: Metropolitan weather forecast; week-end road information for motorists, officially supplied by the R.A.C.Q. 9.15: Messrs. Griffiths, Jones, Jenkin, and Wathan—vocal quartet, "Sweet By-and-Bye." 9.20: Mary McNeish (soprano)—"Annie Laurie" (Lehmann). 9.24: The Silkstone Apollo Club—"Sands of Dee" (Goldbeck). 9.30: Messrs. T. Westwood and Thompson—vocal duet, "Ora Pro Nobis" (Piccolomini). 9.34: The Silkstone Apollo Club—chorus, "Laughter" (Abt). "Ye Banks and Braes." 9.42: J. Thompson (baritone)—"Aberfoyle" (Ketyl). 9.46: The Silkstone Apollo Club—chorus, "They Cannot Kill the Soul." 9.50: T. Westwood (tenor). 9.54: The Silkstone Apollo Club—choruses, "Man," "British Grenadiers." 10.0: News; weather. 10.15: The Radio Raucals. 11.0: Close down.



Be SAFE - use a Mullard

A British Valve and the only valve with the wonderful Mullard P.M. Filament. Mullard radio valves improve any radio receiver.

Mullard
THE MASTER VALVE

5CL

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

MORNING SESSION.

11.15: Chimes. 11.16: Recordings. 11.45: Kitchen Craft and Menu Talk. 12.0: Chimes. 12.1: Recordings. 12.15: News. 12.40: Recordings. 12.52: Railway, Stock Exchange, and meteorological information. 1.1: Recordings. 1.69: Meteorological. 2.0: Close down.

AFTERNOON SESSION.

3.0: Chimes. 3.1: Programme review and announcements. 3.4: Studio Concert. 3.30: "Australia" will tell an original story entitled "My Copper Claim" (Part 1). 4.5: Studio Concert. 4.10: An Educational Talk. 4.25: Stock Exchange. 4.30: Close down.

EVENING SESSION.

6.0: Chimes. 6.1: Birthday greetings. 6.15: Children's request numbers. 6.30: Dinner Session. 7.0: Chimes. 7.1: Senior Birthday League Greetings; Stock Exchange; Sporting Service. Market reports. 7.20: Rev. E. S. Klek, M.A., B.D., will speak on "The Great Plague and the Great Fire." 7.35: Sir David Gordon. 7.45: Dr. Jethro Brown. "Triske in Industry—Why?"

NIGHT SESSION

8.0: Chimes. 8.1: Programme Review. 8.10: The Steiner Trio—"Love Song" (Bondix). 8.14: Dr. P. Roy Newling baritone. 8.21: The Steiner Trio—"Valse Triste" (Sibelius). "Moment Musical" (Schubert). 8.30: Nigger Minstrel Entertainment. 9.0: Chimes. 9.1: Meteorological information, including Semaphore tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: The Steiner Trio—"Second Movement Concerto," Selection, "Romeo and Juliet" (Gounod). 9.20: Nigger Minstrel Entertainment (continued). 10.5: The Steiner Trio—Suite, "Hawatha" (Cole-ridge-Taylor). 10.15: News, weather, sporting service. 10.30: Dance recordings. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength 433 Metres).

EARLY MORNING SESSION—7.30: Town Hall chimes; meteorological report; the day's maximum. 7.35: Early-rising music. 7.55: Mails and shipping intelligence. 8.0: What's on to-day. 8.5: Market reports. 8.10: Australian musical reproduction. 8.27: Features of to-day's programme. 8.30: Close down.

MORNING SESSION—TRADERS' DEMONSTRATION.—10.0: Town Hall chimes. 10.1: Reproduced music. 10.15: Organ recital from the Ambassador's. Jack Lalang at the console of the Wurlitzer organ. 11.0: Close down. MIDDAY SESSION.—12.30: Town Hall chimes. 12.31: Reproduced music. 12.45: A.B.C. news service. 12.50: Items of interest. 12.58: Weather report. 1.0: Town Hall chimes. 1.1: Luncheon music by the National Broadcasting Orchestra. 2.0: Close down. THE RADIO MATINEE.—3.0: Town Hall chimes. 3.1: Reproduced music.

During the afternoon a description of the ring events will be broadcast from the Royal Agricultural Show. 3.45: Talk of interest to women. "Country Women's Organisation." 4.0: Town Hall chimes. 4.1: Reproduced music. 4.15: The story of the day. 4.30: Reproduced music. 4.55: Features of this evening's presentation. 5.0: Close down. EARLY EVENING SESSION—5.45: Children's good-night stories, by Uncle Bas, and Aunt Maxine. 6.15: A.B.C. Younger Set session. "Things Strange but True." 6.30: Dinner music by the National Broadcasting Orchestra. 7.30: Weather report. 7.31: A.B.C. news service; market reports; Stock Exchange review of to-morrow's sporting fixtures; features of to-night's presentation. EVENING SESSION.—8.0: A.B.C. Instrumental Trio. 8.15: James Conarty, gardening hints. 8.20: A.B.C. Instrumental Trio. 8.21: E.C. Racing Observer. 8.30: A.B.C. Instrumental Trio. 9.0: Town Hall chimes. 9.1: Weather report. 9.2: Talk by Basil Kirke. "Great Boxers I Have Met." 9.15: Description of wrestling match by Russell Sandeman. 10.0: Town Hall chimes. 10.1: Temple Court Dance Band, conducted by Merv. Lyons. 11.0: Close down; "God Save the King."

7ZL

Tasmanian Broadcasters Pty, Bursary Buildings Elizabeth Street, Hobart (Wavelength, 316 Metres).

11.30: Recital. 11.34: Midlands weather forecast. 11.35: Recital. 11.55: Tasmanian Stations' 9 a.m. weather report. 12.0: Chimes. 12.1: Shipping information; mail notices; housewives' guide. 12.8: Recital. 12.30: News; announcements. 12.40: Recital. 1.5: British official wireless news; Railway auction sales. 1.10: Recital. 1.30: Close down. 3.0: Chimes. 3.1: Recital. 3.4: Weather. 3.5: Recital. 4.15: Readings. 4.30: Close. 6.15: Children's Corner, with "Uncle David" and "The Story Lady." 7.10: Recorded music. 7.25: News session. 7.30: studio concert, arranged by 7ZL artists (interspersed with instrumental numbers). 7.40: C. Robinson, baritone—"I Heard You Singing." "I Will Not Grieve." 7.50: Record recital. 7.57: Gwen Davidson, soprano—"Thou Werst Blind." "Cherry Ripe" (by request). 8.4: Record recital. 8.14: C. Robinson, baritone—"Love That True." "Myself When Young." 8.21: Record recital. 8.31: Gwen Davidson, soprano—"Deh Vieni." "The Song My Mother Taught Me." 8.38: Record recital. 8.45: James Counsel, "The History and Development of Music." 9.45: News session. 10.0: Chimes. 10.1: Close down.

"BRYANT'S" BIGGER BARGAINS

AMPLION CONE SPEAKERS
AC1 Were Priced at £2/17/6
BARGAIN PRICE 35/-
30 only

KELLOG
Symphony Speakers, usually £5/5/-
BARGAIN PRICE 35/-

EXIDE A BATTERIES
2v. 20act. £ s d
 0 12 6
2v. 30act. 1 1 0
2v. 40act. 1 4 0
CLYDE "A"
1v. 25act. £ s d
 2 10 0
1v. 40act. 3 0 0
1v. 60act. 3 10 0
1v. 80act. 4 0 0
1v. 100act. 4 10 0

ADVANCE CONDENSERS, .00025—.00035.
ALL ONE PRICE—5/11

3 COIL TUNERS, 10/6.
BARGAIN PRICE, 4/11

20 OHM. RHEOSTATS.
W.R.C. Usually 2/6.
BARGAIN PRICE, 1/-

BEEDE METERS.
0 to 50 Volts.
Usually 4/-.
2/6 ea.

"SONG BIRD" "B" BATTERIES
Should be 25/-
BARGAIN PRICE 14/11

AIRZONE 4 VALVE PORTABLE WIRELESS SFTS. Sold at £22/10/-.
BARGAIN PRICE, £18/10/- COMPLETE.
6 only Demonstration Sets.

OLDHAM B ACCUMULATORS WITH ACID
20v. £ s d
 1 3 0
40v. 2 11 0
60v. 3 16 3
80v. 4 16 3
100v. 6 6 9
120v. 7 12 6

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

Amt.	Deposits.		Weekly Paym'ts.	
	£	s. d.	£	s. d.
5	0	10 0	2	6
10	1	0 0	3	6
15	1	10 0	5	0
20	2	0 0	6	6
25	2	10 0	7	6
30	3	0 0	9	0
40	5	0 0	11	0
50	7	10 0	12	6
60	10	0 0	15	0

PHILIPS ACCESSORIES AT NEW PRICES.
Philips 3002 Eliminator was £9/15/- Now £7/15/-
Philips 1017 Trickle Charger was £3/10/- Now £2/15/-
Triple Baby Grand was £4. Now £3/15/-
Buff Baby Grand was £3/17/6. Now £3/12/6.
P.C.J.J. Junior was £5/3/- Now £4/10/-
P.C.J.J. Senior was £6/10/- Now £5/10/-
Peter Pan was £7/10/- Now £6/10/-
ALL OTHER ACCESSORIES IN STOCK.

CONDENSERS .00035
Well Worth 7/6.
2/11 ea.

POWER PACKS.
Pilot £10 7 6
Philips £12 0 0
All Pilot Components and A.C. Tubes in Stock.

UNIVERSAL VALVE SOCKETS.
Usually 1/6
BARGAIN PRICE 1/-

BRADLEY LEAKS.
With Free Dublier Condenser
BARGAIN PRICE 3/11

CARD OF 7 DRILLS.
Usually 1/6
BARGAIN PRICE 1/-

BEADED HYDROMETERS.
Usually 4/6.
BARGAIN PRICE 2/6 ea.

BRYANT'S Ltd., HOME FURNISHERS,
Electrical and Radio Dealers,
545-547-549-551 GEORGE STREET, SYDNEY

Commonwealth election figures will be broadcast through 2FC and 3BL from the Tally Room at the G.P.O., approximately at the times indicated on Saturday. Listeners will find that the chart below will help them considerably when taking down the results.

USE THIS CHART WE TUNING

	9.0	9.30	10.0	10.30	11.0	11.30	12.0	12.30	1.0	1.30	Final
BARTON											
MYHILL, W. C. (Nat.)											
*TULLY, J. T. (Lab.)											
CALARE											
GIBBONS, G. A. (Lab.)											
*HOWSE, N. R. (Nat.)											
COOK											
PICKUP, W. H. (Nat.)											
*RILEY, E. C. (Lab.)											
DALLEY											
MORROW, T. H. (Nat.)											
*THEODORE, F. G. (Lab.)											
DARLING											
*BLAKELEY, A. (Lab.)											
DOE, B. J. (Nat.)											
EAST SYDNEY											
DIAMOND, H. R. (Nat.)											
*WEST, J. E. (Lab.)											
EDEN-MONARO											
CUSACK, J. J. (Lab.)											
*PERKINS, J. A. (Nat.)											
GWYDIR											
*ABBOTT, C. L. A. (C.P.)											
CUNNINGHAM, L. L. (Lab.)											
HUME											
FITZPATRICK, T. J. (C.P.)											
*MCLOONEY, P. J. (Lab.)											
DEIN											
DEIN, A. K. (Nat.)											
*LONG, W. J. (Lab.)											
MACQUARIE											
*CHIFLEY, J. B. (Lab.)											
DASH, C. L. (Nat.)											
MARTIN											
BEEBY, E. (P.P.)											
ELDRIDGE, J. C. (Lab.)											
*PRATTEN, F. G. (Nat.)											
NEW ENGLAND											
*THOMPSON, V. C. (C.P.)											
WILSON, T. E. (Lab.)											

The following were unopposed and consequently do not appear in list: Dr. EARLE PAGE

*Denotes retiring member. Nat. signifies Nationalist Candidate; Ministry; Lab., Labor Party; P.P.

N
-IN

ELECTION RESULTS

For a complete list of the electorates in other States, with names of candidates, see overleaf. Listeners may tune in interstate stations for detailed progress returns if they wish, but results will be regularly broadcast from 2FC and 2BL.

	9.0	9.30	10.0	10.30	11.0	11.30	12.0	12.30	1.0	1.30	Final
<u>NORTH SYDNEY</u>											
BANKO, C. G. (Ind. Lab.)											
*HUGHES, W. M. (Ind. Nat.)											
JUDD, E. E. (Soc.)											
NOTT, L. W. (Nat.)											
<u>ARKES</u>											
McTIERNAN, E. A. (Lab.)											
*MARR, C. W. C. (Nat.)											
<u>ARRAMATTA</u>											
*BOWDEN, E. K. (Nat.)											
ROWE, A. E. (Lab.)											
<u>BEID</u>											
CARR, E. S. (Nat.)											
*COLEMAN, P. E. (Lab.)											
<u>BRICHMOND</u>											
GIBSON, R. C. (C.P.)											
*GREEN, R. F. H. (C.P.)											
<u>BURRIVERINA</u>											
*KILLEN, W. W. (C.P.)											
NOCK, H. K. (C.P.)											
NULTY, W. M. (Lab.)											
<u>BOBERTSON</u>											
FITZGERALD, M. (Lab.)											
*GARDNER, S. L. (C.P.)											
<u>BOUTH SYDNEY</u>											
ADKINS, W. G. (Nat.)											
*RILEY E. (Lab.)											
<u>BARRINGAH</u>											
*PARKHILL, R. A. (Nat.)											
WINDEYER, R. (P.P.)											
<u>BENTWORTH</u>											
MANNING, A. G. (Nat.)											
*MARKS, W. M. (Ind. Nat.)											
<u>BERRIWA</u>											
GROGAN, B. J. (Nat.)											
*LAZZARINI, H. P. (Lab.)											
<u>BEST SYDNEY</u>											
*BEASLEY, J. A. (Lab.)											
THOMPSON, O. L. (Nat.)											

(C.P.); ROWLAND JAMES (Hunter) (Lab.); DAVID WATKINS (Newcastle) (Lib.).

Country Party; Lib., Liberal Party (supporters of the
's Party; Ind., Independent

Interstate Electorates

Polling figures for other States will be announced from 2FC during the evening for those who cannot tune in the interstate stations.

VICTORIA		QUEENSLAND		WAKEFIELD	
BALACLAVA		BRISBANE		*COLLINS, M. (C.P.).	
CAMERON, D. (Lab.).		*CAMERON, D. C. (Nat.).		HAWKER, C. A. S. (Lab.).	
*WHITE, T. W. (Nat.).		FERRICKS, M. A. (Lab.).		McHUGH, S. (Lab.).	
BALLARAT		OXLEY		GREY	
EDMUNDS, F. L. (Nat.).		BAKER, F. F. J. (Lab.).		BADMAN, A. O. (C.P.).	
*McGRATH, D. C. (Lab.).		*BAYLEY, J. G. (Nat.).		*LACEY, A. W. (Lab.).	
BATMAN		LILLEY		WESTERN AUSTRALIA	
*BRENNAN, F. (Lab.).		*MACKAY, G. H. (Nat.).			
KEELEY, C. J. H. (Nat.).		O'KEEFE, F. J. (Ind.).		FREMANTLE	
BENDIGO		MORETON		*CURTIN, J. (Lab.).	
*HURRY, G. K. (Nat.).		*FRANCIS, J. (Nat.).		WATSON, H. K. (Nat.).	
KEANE, R. V. (Lab.).		TAYLOR, R. (Lab.).		KALGOORLIE	
BOURKE		CAPRICORNIA		*GREEN, A. E. (Lab.).	
*ANSTEY, F. (Lab.).		*FORDE, F. M. (Lab.).		GREENARD, W. F. (Lab.).	
HAHN, L. E. (Nat.).		STAINES, R. (C.P.).		PICKERING, W. G.	
CORANGAMITE		DARLING DOWNS		PERTH	
*GIBSON, W. G. (C.P.).		*GROOM, L. E. (Ind. Nat.).		*MANN, E. A. (Ind.).	
CROUCH, R. A. (Lab.).		LLEWELLYN, E. J. (Lab.).		McCOO, J. J. (Ind.).	
CORIO		MORGAN, A. C. (Nat.).		NAIRN, W. M. (Nat.).	
LEWIS, A. (Lab.).		HERBERT		NEEDHAM, E. (Lab.).	
*LISTER, J. H. (Nat.).		AMIET, W. A. (Nat.).		TASMANIA	
ECHUCA		*MARTENS, G. W. (Lab.).			
HILL, E. C. (Lab.).		KENNEDY		BASS	
*HILL, W. C. (C.P.).		*FRANCIS, G. A. (Nat.).		GUY, J. B. (Lab.).	
FAWKNER		RIORDAN, D. (Lab.).		*JACKSON, D. S. (Nat.).	
*MAXWELL, G. A. (Ind. Nat.).		MARANOA		DARWIN	
ROBINSON, Sir A. (Nat.).		*HUNTER, J. A. J. (C.P.).		*BELL, G. J. (Nat.).	
RONALD, Rev. J. B. (Ind.).		MUNRO, R. R. (Lab.).		DALTON, T. G. (Lab.).	
FLINDERS		WIDE BAY		LANE, H. T. (Lab.).	
BIRCH, J. (Lib.).		*CORSER, B. H. (C.P.).		DENISON	
*BRUCE, S. M. (Nat.).		O'KEEFE, J. H. (Lab.).		*CULLEY, C. E. (Lab.).	
HOLLOWAY, E. J. (Lab.).		SOUTH AUSTRALIA		BLANCHARD, D. (Nat.).	
GIPPSLAND				ADELAIDE	
BUCKLEY, M. B. (Lab.).		*YATES, G. E. (Lab.).		BRETTINGTON-MOORE, H. M. (Nat.).	
*PATERSON, T. S. (C.P.).		WREFORD, A. T. (Lib.).		GAGE, J. O. (Nat.).	
HENTY		BOOTHBY		GELLIBRAND, Sir J. (Nat.).	
BOLTON, W. K. (Ind. Nat.).		McCANN, W. F. J. (Lib.).		WALCH, H. M. C. (Nat.).	
DUGGAN, W. J. (Lab.).		*PRICE, J. L. (Lab.).		FRANKLIN	
*GULLETT, H. S. (Nat.).		BARKER		*McWILLIAMS, W. J. (Ind.).	
INDI		*CAMERON, M. D. (Lib.).		SEABROOK, A. C. (Nat.).	
COOK, R. (C.P.).		NIEASS, F. K. (Lab.).		WILMOT	
*JONES, PAUL (Lab.).		ANGAS		*ATKINSON, L. (Nat.).	
SAMBELL, L. H. (Nat.).		GABB, J. M. (Lab.).		LYONS, J. A. (Lab.).	
WALTER, A. L. N. (C.P.).		*PARSONS, W. L. (Lib.).			
KOOYONG					
LANGKER, A. V. (Lab.).					
*LATHAM, J. G. (Nat.).					
MARIBYRNONG					
ANDERSON, P. R. (Nat.).					
*FENTON, J. E. (Lab.).					
WANNON					
McNEILL, J. (Lab.).					
*RODGERS, A. S. (Nat.).					
WIMMERA					
HARRIS, J. S. (C.P.).					
*STEWART, P. G. (Ind.).					

NEW PHILIPS AE VALVES FOR AMERICAN RECEIVERS

F109	.. AMPLIFIER DIRECTLY HEATED ..	15/-
F209	DETECTOR & AMPLIFIER INDIRECTLY HEATED	27/6
C603	... POWER VALVE ...	15/-
I560	· FULL WAVE RECTIFIER ·	30/-

POSSESSING REMARKABLE
RIGIDITY WITH LONG LIFE
SENSITIVITY & CONSISTENT
PERFORMANCE

**NOW AVAILABLE
AT ALL DEALERS**

They're Better if They're Philips

Local Programmes, Saturday, October 12

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: Studio music.

11.10: Cables, "Sun," "Herald" and A.P.A. 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.

THE RADIO MATINEE—2.30 to 4.30 p.m.

2.50: From Randwick: Description of the A.J.C. meeting. A programme of music from the studio during intervals between races.

4.30: From the studio: Late sporting results.

4.45: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

5.45: Kiddies' "Goodnight" stories told by the "Hello Man," assisted by Aunt Willa.

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 "News." Truck bookings.

7.58: To-night's programme.

After Charles Zoli's revue to-night, the results of the Federal elections will be broadcast at regular intervals. These results will go through both 2FC and 2BL simultaneously. 2BL listeners will be thrilled with the description from the Royal Speedway. The studio programme is on popular lines, featuring Jack Lumsdaine, the Radio Rascal.

8.0: "Big Ben"; Charles Zoli's Revue: An hour of radio sunshine.

9.0: The country man's weather session—

(a) New South Wales forecasts.

(b) Inter-State weather synopsis.

(c) The yachtman's and fisherman's forecast.

9.2: Results of the Federal elections.

9.12: The 2FC Instrumental Trio—Selection, "The Lady of the Rose."

9.22: William Everard, tenor—

(a) "Hazel Eyes" (Rubens).

(b) "Mavourneen" (Richards).

9.29: Results of the Federal elections.

9.39: The 2FC Instrumental Trio—Selection, "The Country Girl" (Monckton).

9.53: William Everard, tenor—

(a) "Caroli" (Freire).

(b) "In a Little Town Called Home Sweet Home" (Donaldson).

10.0: Results of the Federal elections.

10.15: Late weather forecast and announcements.

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

10.30: Results of the Federal elections.

Note: From now on until 1.30 results of the Federal elections will be given at regular intervals, interspersed with dance music from the Oriental.

1.30: National Anthem. Close down.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

8.15: G.P.O. chimes and announcements.

8.16: Music for every mood.

8.40: Meteorological data for the country.

8.45: Mails and shipping information.

8.50: Memory melodies.

9.0: This morning's story.

9.30: A musical interlude.

9.40: British official wireless press.

9.45: New music.

10.5: News from the "Daily Telegraph Pictorial."

10.10: Austradio musical reproduction.

10.40: G. Cooper, City Parks Superintendent, will give a talk on "Gardening."

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: Luncheon hour music.

1.0: Afternoon news from the "Sun."

1.5: Austradio musical reproduction.

AFTERNOON ENTERTAINMENT—2.30 to 5.15 p.m.

Note: The principal races of the final of the A.J.C. Spring Carnival will be transmitted through both 2FC and 2BL.

2.30: The 2BL Instrumental Trio.

2.40: From Randwick—Description of the Dowling Steeplechase.

2.55: From the studio—The 2BL Instrumental Trio.

3.8: Basil Rye, baritone—

(a) "Birds in the High Hall Garden" (Sommerville).

(b) "A Voice by the Cedar Tree" (Sommerville).

3.15: From Randwick—Description of the Randwick Plate.

3.30: From the studio. Kenneth Hunt,

tenor—

(a) "A Farewell in the Desert" (Adams).

(b) "All in a Lily White Gown" (Martin).

3.37: The 2BL Instrumental Trio.

3.50: From Randwick—Description of the Clibborn Stakes.

4.5: From the studio—Basil Rye, baritone—

"Come into the Garden, Maud" (Sommerville).

(b) "Oh, That Were Possible" (Sommerville).

4.12: The 2BL Instrumental Trio.

4.15: Kenneth Hunt, tenor—

(a) "Molly Brannigan" (Stanford).

(b) "Here in the Quiet Hills" (Carne).

4.22: The 2BL Instrumental Trio.

4.30: Austradio musical reproduction.

5.0: Complete sporting resume.

5.15: Close.

THE DINNER HOUR—6.15 to 7.55 p.m.

6.15: The dinner hour music.

6.45: The A.B.C. Younger Set—The Captain

to his Comrades.

7.5: Studio music. The Country Man's Market Session—Wool, wheat, stock, farm produce, fruit, vegetables, poultry markets.

7.30: Austradio musical reproduction.

7.55: What's on the air to-night?

TO-NIGHT'S PRESENTATION.

The feature of 2BL's programme is a vivid description of the races from the Speedway. Jack Lumsdaine, the Radio Rascal, will entertain you, and there are new duets by Harry Croot and Norman Francis. From 9 o'clock results of the Federal elections will be broadcast at regular intervals.

8.0: Harry Croot and Norman Francis, duets—

"Come to the Fair" (Easthope Martin).

"Your Eyes Have Told Me So" (Cherry).

"Homing" (Del Riego).

8.10: Wendling and Molloy, novelty instrumentalists.

8.20: Len James and Partner, in a short sketch adapted to broadcasting.

8.30: Jack Lumsdaine, "The Radio Rascal."

8.40: From the Speedway Royal—

Description of the races

9.0: From the studio—results of the Federal elections.

9.10: Harry Croot and Norman Francis, duets—

"Battle Eve."

"Come O'er the Moonlit Sea"

"Whispering Hope."

9.20: Wendling and Molloy, instrumentalists.

9.28: Results of the Federal elections.

9.38: Late weather forecast for the man on the land.

9.40: Jack Lumsdaine—"The Radio Rascal."

9.50: Descriptions from the Speedway Royal.

10.0: From the studio—progress results of the Federal elections.

10.10: The Speedway Royal.

10.20: From the studio—Len James and Partner in a vaudeville vignette

10.25: Late news from the "Sun," and late weather forecast.

10.30: Note—From now until 1.30 a.m. results of the Federal elections will be given at regular intervals, interspersed with dance music from the Hotel Australia.

1.30 a.m.: Close.

2GB

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

3.0: Musical session. 5.15: Children's session, by Uncle George. 7.0: Request hour.

8.0: Dance music. 10.30: Close down.

2UW

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

5.30 p.m.: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Musical programme and request numbers. 10.30: Close.

2KY

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

CHILDREN'S SESSION.—6.0: Birthday calls, request numbers, and kiddies' entertainment, Aunt Jimema 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, Evérett Street, Maroubra Sydney (Wavelength, 293 Metres).

EARLY MORNING SESSION.

(See Friday.)

EVENING SESSION.

7.15: Orchestral Dinner music. 7.58: Programme announcements. 8.0: Overture, "Barber of Seville." 8.10: Orchestral and vocal concert. 10.30: Studio announcements.

Electric Motors and Generators

For Battery Charging, Lighting, Pumping Water, etc., all voltages.

Transformer Sheet cut to size, 1/6 lb.

Electric Fans, all sizes, 240 volts, D.C. from £2/- each, equal new.

F. T. S. O'Donnell, Griffin Co., LTD.,

33 DRUITT STREET, SYDNEY.

Leading makers of A.C. radio sets *recommend* Radiotrons



MANUFACTURERS of quality sets such as Stromberg Carlson . . . Attwater Kent . . . Majestic . . . Crossley . . . Radiola . . . King Quality . . . Fada —all design their sets for use with RADIOTRONS. They use Radiotrons for testing and initial equipment and recommend them for replacement. They do so because they know that RADIOTRONS are absolutely uniform in characteristics and all round quality . . . that by using RADIOTRONS and replacing with a RADIOTRON a high standard of reception will be maintained.

Radiotrons are sold by all the best Radio dealers.

AUSTRALIAN

GENERAL ELECTRIC

Australian General Electric Company, Ltd.

93-95 CLARENCE STREET, SYDNEY.

53 King St., CIVIC CENTRE, 621 Dean St., KEEN ST.,
NEWCASTLE. GANBERRA. ALBURY. LISMORE.

A. C. RADIOTRONS



RADIOTRON UY227 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.

RADIOTRON UX226 is an Amplifier Valve and can be used for Radio or Transformer coupled Audio Frequency Amplification Not suited for Detection



RADIOTRON UX171A is a Power Amplifier Valve, designed to supply large undistorted volume. It is intended for use in the last stage of Audio Frequency Amplification.

RADIOTRONS UX250-UX245

Super Power Valves for supplying exceptionally large undistorted volume. Use only in last stage of an Audio Frequency Amplifier.



RCA Radiotron

Interstate Programmes, Saturday, October 12

3LO

Australian Broadcasting Co., 130A Russell St., Melbourne (Wavelength, 321 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 signal. 1.1: Stock Exchange; weather. 1.15: Comments on the day's news. 1.28: Description of Iola Weiler, nine furlongs. V.A.T.C. races at Caulfield, by Eric Welch. 1.35: Melody. 2.0: Time signal.

AFTERNOON SESSION.

3.0: Melody. 2.28: Description of Debutante Stakes, four furlongs. V.A.T.C. races at Caulfield, by Eric Welch. 2.35: Melody. 2.40: Description of football match, by Mel. Morris. 3.0: Time signal; sporting results to hand. 3.3: Description of Caulfield Stakes, nine furlongs. V.A.T.C. races at Caulfield, by Eric Welch. 3.10: Description of football match. 3.15: Quarter-time football scores. 3.17: Description of football match. 3.35: Half-time football scores. 3.37: Description of football match. 3.47: Description of Ringwood Steeple-chase, two miles. V.A.T.C. races at Caulfield, by Eric Welch. 3.55: Musical interlude. 4.0: Time signal; sporting results to hand. 4.5: Description of football match. 4.27: Description of Caulfield Guineas, one mile. V.A.T.C. races at Caulfield. 4.35: Three-quarter time football scores. 4.37: Description of football match. 5.7: Description of Toorak Handicap, one mile. V.A.T.C. races at Caulfield, by Eric Welch. 5.12: Description of football match. 5.20: Latest sporting results. 5.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Little Miss Kookaburra" will continue her serial story, "The Guides at Calamity Hill"; birthday greetings from "Miss Kookaburra." 6.20: How to make useful things, Mr. Alex. Smith.

EVENING SESSION.

6.40: Sporting results. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: Stories of our mining fields—Mount Lyell, Dr. Loftus Hills, D.S. 7.40: The "Herald" news service. 7.45: Come with us round the world—Across the Gobi Desert, Mr. H. J. G. Esmond. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra—Overture, "Le Roi D'Yvetot" (Adam).
8.6: Thomas M'Pherson, baritone, and Alan R. Mitchell, tenor—
"Homing" (Del Riego).
"Watchman, What of the Night?" (Sarjeant).
8.13: Merlena Llewellyn, harp—
"Melody in F" (Riminteln).
"The Promise of Spring" (Schubert).
8.20: Gus Quin, "The Radio Magician"—Radio Magic. Have your pencil and paper in readiness.
8.26: National Broadcasting Orchestra—
"Valse Allegro" (Tschaiikowsky).
8.31: Eileen Starr, soprano—
Selections from her repertoire.
8.38: Austin Anderson, entertainer, at the piano—Humorous sketch, "When Sister Mary tried to Broadcast."
8.45: A special programme has been arranged.
9.0: Progress results of the polling.
9.10: Special programme (continued).
9.20: National Broadcasting Orchestra—
"Hungarian Rhapsody," No. 1 (Liszt).
9.30: Eileen Starr, soprano—
Selections from her repertoire.
9.37: Gus Quin—
More Radio Magic.
9.43: Merlena Llewellyn, harp—
"Meditation" (Drumbellier).
"All Thro' the Night" (Old Welsh).
9.50: Tom M'Pherson, baritone—
"Eleanore" (Coleridge-Taylor).
9.54: Austin Anderson, entertainer at the piano—
Planologue, "At the Lodging Where I Dwell"—
The Andersons.
10.0: Alan Mitchell, tenor—
"Only the River Running By" (Hopkins).
FEDERAL ELECTIONS.
10.5: Progress results.
10.20: Weather; late sporting results.
10.30: Dance Band.
11.0: Federal Elections, progress results.
1.30 a.m.: Close down.

3AR

Australian Broadcasting Co., 130A Russell St., Melbourne (Wavelength, 481 Metres).

MORNING SESSION.

6.15 to 11.0: See Friday.

MIDDAY SESSION.

12.0: Chimes. 12.1: Recital of syncopated music. 12.30: Luncheon music, supplied by the Studio Light Orchestra. 2.0: G.P.O. chimes. 2.1: Idylls of the King—The Coming of Arthur, Rev. W. Bottomley. 2.15: Musical interlude. 2.20: Products of the Jungle. 2.35: Musical interlude. 4.0: Personal Adventures while Exploring—Lt. Col. Eldred Pottinger, D.S.O. F.R.O.S. 2.55: Musical interlude. 3.0: G.P.O. chimes.

THE RADIO MATINEE.

3.1: A.B.O. Troubadours—Popular melodies. 3.6:

Violet Jackson, soprano—"How the Holly got Its Thorns" (Besley); "The Early Morning" (Peel). 3.13: Peter McCarthy and Leslie Sims—Guitar duet. 3.18: Billie King—Songs at the piano. 3.24: One-act play—"The Hopeless Passion of Mr. Bunyon" (Lord Dunsay); produced by Terence Crisp. Characters: Mr. Muffen, W. H. Chandler; Mr. Bunyon, Terence Crisp; Miss Siegitt, Betty Rae. Scene: The interior of a shop. 3.30: A.B.C. Troubadours—The latest hits. 3.42: Horace White, tenor—"Come to the Fair" (Martin); "I Look Into Your Garden" (Haydn Wood). 3.49: Harry Bennett—Xylophone selections. 3.53: Violet Jackson, soprano—"From the Land of the Sky Blue Waters" (Cadman); "My Desire" (Dunhill). 4.0: A.B.C. Troubadours—More popular numbers. 4.6: Billie King—Songs at the piano. 4.12: E. Rochlin—Saxophone solo. 4.15: Syd. Hollister, entertainer—"Hollisterisms." 4.22: Syncopated pianists by reproduction. 4.28: Horace White, tenor—"Comrades of Mine" (James); "The Stockrider's Song" (James). 4.35: A.B.C. Troubadours—Popular melodies. 4.41: The "Sighing Serenader"—Latest songs. 4.45: Syd. Hollister, entertainer—More Hollisterisms. 4.59: A.B.C. Troubadours—Dance numbers. 5.0: G.P.O. chimes. 5.1: "Austradio" musical reproduction. 5.30: Weather data. 5.35: Austradio musical reproduction. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by the Studio Light Orchestra. 7.30: What's on the Air To-night? 7.32: Sporting results. 7.40: Latest musical releases. 8.0: G.P.O. chimes.

NIGHT SESSION.

8.1: Coburg City Band, conductor T. Davison. March, "On Tour" (White).
8.5: Original Wee Four Male Quartette—
Quartette—"The Barefoot Trail" (Wiggins).
Baritone solo—Ralph E. Daly, "Thou Art Risen" (Coleridge Taylor).
8.12: Hedley and Bartlett—Musical novelties.
8.20: Ivy Davis, soprano—
"Glow Worm" (Lincke).
"Carmena" (Lane Wilson).
8.27: Coburg City Band—
Italy, "Solo Mio" (Zamankin).
8.35: Jack Houston, ventriloquist—"At School."
8.42: Norman's Royal Hawaiians will take you through the following countries—
China, "Hong Kong."
Italy, "O Sole Mio."
Spain, "Spanish Moon."
Honolulu, "Aloha Oe."
Kentucky, Southern melodies.
Home, Sweet Home.
8.52: Original Wee Four Male Quartette—
"The Volca Boatman" (Curwen).
"Dixie."
9.0: Coburg City Band—
Selection "Recollections of Verdi."
9.1: Original Wee Four Male Quartette—
Tenor solo, Edwin E. Hooke—"Oh could I but Express" (Malashkin).
Quartette—"Four Jolly Smiths" (Leslie).
9.17: Hedley and Bartlett—Musical novelties.
9.24: Ivy Davis, soprano—"Kiss Me Again."
9.30: Jack Houston, ventriloquist—"The Quarrel."
9.35: Coburg City Band—
Italy, "Solo Mio" (Zamankin).
9.42: One-act Play—"Mangel Wurzel" (produced by L. Williams). Characters: Candy Bates, Leslie Williams (his wife); Catherine Nellie Mrs. Williams (mother-in-law); Betty Landon.
10.0: Weather information and "Herald" news.
10.10: Norit String Quartet.
10.20: Harry Kitts, tenor—
"Ah Moon of my Delight" (Lehmann).
"Love, Love" (Thomson).
10.27: Norit String Quartette.
10.40: Harry Kitts, tenor—
"Little White Rose" (Cadman).
"Indian Dawn" (Zamankin).
10.47: A.B.C. Troubadours—Popular melodies.
10.57: The Sighing Serenader—A request number.
11.0: A.B.C. Troubadours—Dance Band.
12.0: God Save the King.

3DR

The "Herald" Broadcasting Station, Flinders Street, Melbourne (255 Metres).

AFTERNOON SESSION.

2.0: Grenadier Guards Band, "Pastorale Dance."
2.30: John Brown, "Toreador Song."
3.0: Ignace Freedman, "Mozurka" (Chopin).
3.30: Jesse Crawford (organ), "When Summer is Gone."
4.0: Paul Whiteman and his Orchestra, "Mother Goose Parade."
4.30: Sydney Coltham, "Nirvana."
5.0: String Quartet, "Honolulu March."
5.30: Close down.

EARLY EVENING SESSION.

6.0: Grenadier Guards Band, "Country Dance."
6.30: Sporting results. 6.45: Jelly Roll Morton's Peppers, "Shreveport Stomp."
7.0: O. T. Pattman (organ), "Piraviv."
7.30: Chick Endor, "When the World is at Rest."

EVENING SESSION.

8.0: The Victorian Professional Orchestra concert, transmitted from Auditorium.
9.0: Paul Whiteman and his Orchestra, "Gypsy."
9.30: Essie Ackland, "O Lovely Night."
10.0: New Concert Orchestra, "Hoppaten."
10.30: Evelyn Scotney, "Caro Nome."
10.40: News. 10.45: God Save the King.

4QG

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

For day sessions see Friday.

NIGHT SESSION

Federal election results: The night session will be devoted mainly to the broadcasting of the Federal election results as they come to hand. The station will operate until such hour as the final results for the evening have been broadcast (approximately between 11 o'clock and midnight).

Between the broadcasting of election results the following musical programme will be broadcast from the studio—

Harry Grunden and Mark Solomon, entertainers. Mrs. F. North (pianist)—"Nocturne in B Flat" (Paderewski), "The Fountain" (Bennett). Ben Cloirec (tenor)—"My World" (Mordan), "After Long Absence" (Sanderson). A Thought for To-night (Will H. Lister)—"Wherein Lies Beauty." W. H. Davis (cornettist)—"Through the Shadowed Vales" (Smith), "Song without Words" (Mendelssohn).

The two semi-finals and the final of the main trophy motor cycle race will be relayed from the Davies Park Speedway.

11.0 (or thereabouts): Close down.

5CL

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

MORNING SESSION.

12.0: Chimes. 12.1: Special late selections for Caulfield. 12.3: Probable starters and selections for races at Martindale. 12.15: News. 12.45: Recordings. 1.0: Close down.

AFTERNOON SESSION.

2.0: Chimes. 2.1: Resume of Caulfield and Martindale race results. Recordings. 5.0: Close down.

EVENING SESSION.

6.0: Chimes. 6.1: Resume of Caulfield and Martindale race results. 6.2: Birthday greetings. 6.15: Children's request numbers. 6.30: Dinner Session. 7.0: Chimes. 7.1: Senior Birthday League Greetings. Stock Exchange, Announcements. 7.10: Rev. G. E. Hale, B.A. will speak on "Are Men Wiser Than Women?" 7.24: Mr. C. G. Riley will speak on "Items of Interest." 7.40: S.G.'s Sporting Service, including Martindale and Caulfield race results, country sporting, hockey, cycling, lacrosse, and other sporting results.

NIGHT SESSION.

8.0: Chimes. 8.1: Programme review. 8.10: Special Broadcast of the Tanunda Band Competitions. 9.0: Commonwealth Election Results. 9.1: Tanunda Band Competitions (continued). 10.20: Sporting Service, including Martindale and Caulfield race results; country sporting, hockey, cycling, lacrosse, and other sporting results. 10.28: Commonwealth Election results. 10.30: Dance Recordings. 10.45: Commonwealth Election results. 10.55: Dance music. 11.20: Commonwealth Election results. 11.30: Close down.

6WF

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

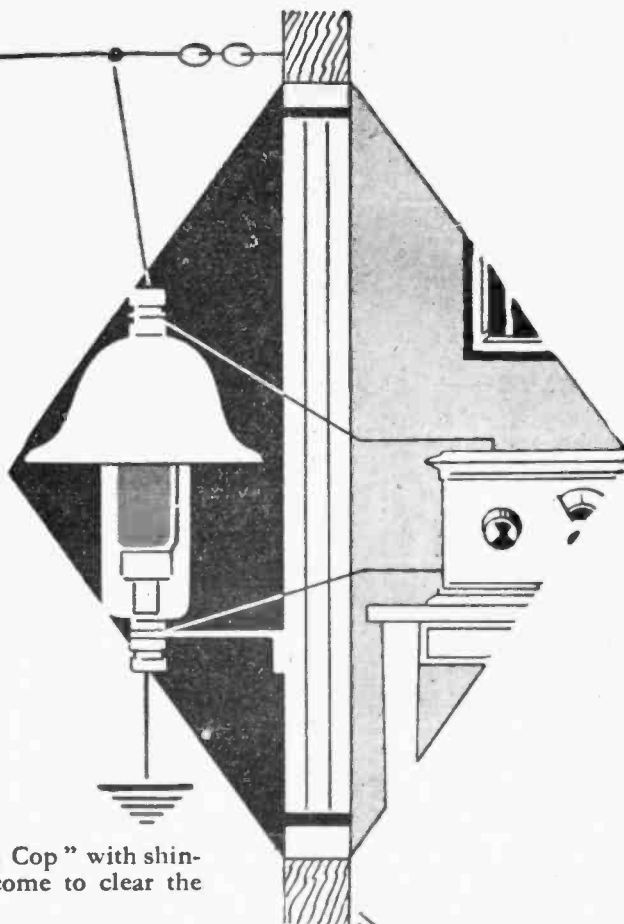
For day sessions, see Friday. EVENING SESSION—
8.0: Harmony Girls. 8.15: Rueben Betts, personality vocalist. 8.18: Harmony Girls. 8.33: Rueben Betts, personality vocalist. 8.36: Harmony Girls. 9.0: Town Hall chimes. 9.1: Weather report. 9.2: Harmony Girls. 9.17: Rueben Betts, personality vocalist. 9.20: Harmony Girls. 9.35: Rueben Betts, personality vocalist. 9.38: Harmony Girls. 10.0: Temple Court Dance Band, conducted by Merv. Lyons. 11.0: Close down: "God Save the King."

7ZL

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

11.30: Selections. 11.34: Midlands weather forecast. 11.35: Selections. 11.55: Tasmanian Stations' 9 a.m. weather report. 12.0: G.P.O. clock chimes the hour. 12.1: Shipping information; mail notices; housewives' guide. 12.8: Selections. 12.30: News. 12.40: Record recital. 1.5: British official wireless news; Railway auction sales. 1.10: Selections. 1.30: Close. 3.0: Chimes. 3.1: Selections. 4.50: All sporting results to hand. 5.0: Close down. 6.10: All sporting results. 6.30: Children's Corner, with "Uncle David." 7.30: News. 7.40: H. H. Facy will speak on "Thirtieth Anniversary of the South African War, 1899-1902." 7.50: James Counsel will speak on "European Affairs." 8.0: G.P.O. clock chimes the hour. 8.1: Recital. 8.15: A request programme of popular records specially arranged by Paton's Music Warehouse. 9.30: British official wireless news. 9.35: Record recital (continued). 10.20: Close down.

MAKE
YOUR
RADIO
SAFE
With a
PHILIPS
"AERIAL
COP"



ENTER the Philips "Aerial Cop" with shining green cap—he has come to clear the way to your radio.

The "Aerial Cop" is always on duty, affording you and your radio complete protection from high potential atmospheric discharges. He is equally efficient in all weathers and makes an excellent lead-in insulator.

Ask your dealer right now about this combined Rare Gas Fuse and Lightning Arrester, and install one to protect your home and radio.

10/6



PHILIPS
for better radio

[Advt. of Philips (Australasia) Ltd. (Radio Dept.) Head Office and Showrooms, corner Clarence and Margaret Streets, Sydney, N.S.W.]

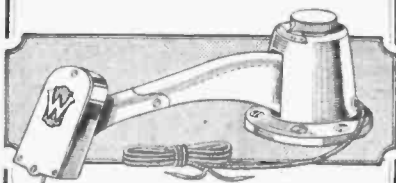
9R62

THERE IS ONLY ONE VALVE THAT CAN REPLACE A PHILIPS—ANOTHER PHILIPS

The World's Finest Artists

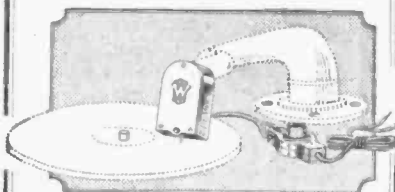
Brought right into your home with the

WEBSTER ELECTRIC PICKUP



TYPE 1A.

With the WEBSTER ELECTRIC PICKUP fitted to your Phonograph you can hear your favorite Records reproduced through your Radio Receiver and Loud Speaker any hour, any day. The reproduction will simply amaze you. The Webster Pickup will reproduce the finest harmonics that you had never previously heard, and with wonderful volume and clarity. Convert your Radio Set to a combination Radio Phonograph and enjoy the world's finest music.



TYPE 1B

The proof of Webster's superiority is the fact that they are now being used as standard equipment by most of the largest Electric Phonograph manufacturers and for "Talkie" film installations. Easily attached to any make of Phonograph.

TYPE 1A, with Tone Arm, and built in volume control... £5/5-

TYPE 1B, to fit to your Phonograph Tone Arm..... £3/2/6

Sold with our usual guarantee of satisfaction or money refunded.

W. HARRY WILES

RADIO, ELECTRICAL & GRAMOPHONE SUPPLIERS,

PITT & GOULBURN STS., SYDNEY

Local Programmes, Sun., Oct. 13

2FC

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

CHURCH HOUR—10.0 a.m. to 12.30 p.m.

- 10.0: Announcements.
- 10.5: Studio music.
- 10.30: This morning's news from the "Sunday Sun," "Sunday Times," and "Truth."
- 10.35: 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.
- 12.15: From the Studio: Studio music.
- 12.30: Close.

AFTERNOON CONCERT—3 p.m. to 4.30 p.m.

3.0: From St. John's Church of England: Organ recital arranged by Herbert E. Shepherd. Assisting artists: Bessie Cooke, contralto; D. McDonald, violinist; and H. Hinton, baritone.

- Organ Solos—
- (a) "Grand Offertoire in G Major" (Clark).
- (b) "Twilight" (Friml).
- Contralto Solo, Bessie Cooke—"Father of Heaven," from "Judas Macabaeus" (Handel).

Organ Solo—"Carillons of Dunkirk" (Carter).

Violin Solos, D. McDonald—

- (a) "Hymn to the Sun" (Rensky-Korfakov).
- (b) "Intermezzo" (Mascagni).

Organ Solos—

- (a) March, "Des Soldats" (Mason).
- (b) March, "Militaire in G" (Schubert).

Baritone Solo, Herbert Hinton—"Open the Gates of the Temple" (Knapp)

Organ Solo—"Minuet and Trio" (Marchant)

Contralto Solo, Bessie Cooke—"Nearer My God, to Thee" (Carey).

Violin Solo, D. McDonald—"Schonrosmarin" (Kriesler).

Organ Solo—"Finlandia" (Sibellus).

Baritone Solo, Herbert Hinton—"The Lord is My Light" (Allitson).

Organ Solo—"Thanksgiving March" (Baptiste).

4.30: Close.

EVENING PROGRAMME—6 to 10.30 p.m.

6.0: From Pitt Street Congregational Church: Organ Recital arranged by Lilian Frost—

- (a) Fantasia, "Hark, Hark, My Soul" (Smart).
- (b) "Meditation" (Grynsinger).
- (c) "Spring Song" (Hollins).
- (d) "Priere et Berceuse" (Guilmont).

6.30: The Rt. Hon. Sir Joseph Cook will speak on "The League of Nations."

7.0: From the Randwick Presbyterian Church: Evening Service, conducted by Rev. W. G. Grant.

8.30: Will Prior's musical ensemble, with Price Dunlavy at the Grand Organ.

10.30: Close. "National Anthem."

2BL

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

MIDDAY SESSION—10.55 to 3 p.m.

10.55: Announcements.

11.0: From Petersham Baptist Church—morning service, conducted by Rev. G. A. Craik.

Sermon—Rev. L. C. M. Donaldson.

Hymns—

- "Holy, Holy, Holy."
- "Sun of My Soul."
- "O Love That Will Not Let Me Go."
- "Dear Lord and Father of Mankind."

12.15: From the studio—musical items.

12.30: News from the "Sunday Sun," "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 p.m.

4.30: The Marrickville Silver Band—

- (a) Selection, "Wareham" (Arr. Coles).
- (b) Cornet solo, "Volga Boatman."

4.45: William Cotterill, tenor—

- (a) "Tender Thought" (Wright).
- (b) "Dawn Skies" (Drummond).
- (c) "Remember Now Thy Creator" (Top-liff).

4.52: Rene Birkett, violinist—"Sonata G Minor" (Purcell).

4.59: The Marrickville Silver Band—

- (a) Selection, "Ten Minutes with Handel" (arr. Hawkes).
- (b) Hymn tunes, "Bullinger" (arr. Hawkes).

"Rimington" (arr. Hawkes).

5.15: C. N. Baeyertz will continue his series on "Greek Philosophy."

- 5.30: William Cotterill, tenor—
- (a) "Awake" (Pether).
- (b) "Red Roofs" (Brahe).
- (c) "O Song Divine" (Temple).

5.38: Rene Birkett, violinist—

- (a) "Paen" (Febich).
- (b) "Meditation" (Massenet).

5.45: The Marrickville Silver Band—

- (a) March, "The Conqueror" (Wellman).
- (b) Cornet solo, "Silver Threads Among the Gold" (Twitvelten).
- (c) March, "New Zealand" (Scotney).

5.50: From Pitt Street Congregational Church—evening service, conducted by Rev. T. E. Ruth.

8.30: Relay from 3AR, Melbourne.

10.0: Close. National Anthem.

2GE

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

9 a.m.: Address by Miss Mary Rivett.

9.30: Address by Mr. Victor E. Cromer.

10.0: Music from Studio.

10.15: Organ music from St. Alban's Church, Regent Street, Sydney.

10.30: Morning service from St. Alban's Church.

12 noon: Music from Studio.

12.30: Close down.

3.0: Musical session.

5.15: Children's Session, by Uncle George.

7.0: Concert from St. Alban's Church.

7.30: Lecture from Adyar House.

8.15: Concert, Miss Ada Brook, pianiste.

8.23: Miss Gladys Aubin, soprano.

8.30: Mr. Gregory Valentine, violinist.

8.38: Mr. Cecil Houghton, tenor.

8.45: Miss Beatrice Kendrick, contralto.

8.52: Miss Ada Brook, pianiste.

9.0: Weather report.

9.1: Miss Gladys Aubin, soprano.

9.8: Mr. Gregory Valentine, violinist.

9.16: Mr. Cecil Houghton, tenor.

9.23: Miss Beatrice Kendrick, contralto.

9.30: Address by Miss Mary Rivett.

2UW

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

10.30 a.m.: Music and request numbers.

1 p.m.: Close.

5.30 p.m.: Children's hour, conducted by Uncle Jack.

6.30: Close.

7.0: Musical programme.

10.30: Close.

2UE

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

10.1: Mass.

11.0: Announcements.

12.2: Musical selections.

12.30: Close down.

EVENING SESSION.

6.0: Orchestral music from Catholic Studio.

6.7: Session, conducted by Father T. Walsh, S.J.

6.30: Music, 6.35: "Question Box" Talks, arranged by Dr. L. Rumble, M.S.C.

7.45: Evening devotions.

8.20: Overture, "Il Trovatore."

8.30: Vocal and orchestral concert.

10.15: Close down.

Interstate Programmes, Sun., Oct. 13

3LO

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

MORNING SESSION.

10.0: Melbourne Observatory time signal. 10.1: Federal election results. 10.20: Express train information. British official wireless news; items of interest. 10.30: Bells from St. Paul's Cathedral. 10.45: Recital of sacred music. 11.0: Morning service from Wesley Church, sermon by Rev. J. H. Cain. 12.30: Close down.

AFTERNOON SESSION.

3.0: Pleasant Sunday afternoon service from Wesley Church Central Mission; speaker, Mr. R. G. Menzies. M.L.C.—solists, James Hill. 4.30: Close down.

THE CHILDREN'S CORNER.

6.0: "Brother Bill's" talk "Billy Bunny" will give the birthday greetings, and "The Mouth Organ Man" will continue his series of community singing for the children.

EVENING SESSION.

7.0: The Metro. Male Quartette—"Heav'n, Heav'n" (Burleigh), "Cotton Dolly" (Gelbel). 7.8: Reg. Bradley, violin—"Pale Moon" (Logan-Kreislner), "Slavonic Dance" in E Minor (Dvorak-Kreislner), "Mazurka" in G (Milnerski).

7.23: J. Howlett Ross—Dramatic Stories from the Bible. "Samson and Delilah." 7.38: Metro. Male Quartette—"I Am Alpha and Omega" (Stainer); duet, "Twilight" (Nevin), Messrs. Tomkin and Thompson. 7.46: Mabel Nelson, piano—"Butterflies" (Grigg), "Musical Box" (Lidlow), "Finnish Dance" (Friedman) 7.54: Metro. Male Quartette—"The Harp that Once" (Pittman), "Annie Laurie" (Heartz).

NIGHT SESSION.

8.0: Stan. Porter and his orchestra—overture, "The Merry Wives of Windsor" (Nicolaï). Mr. J. Robertson, trumpet—"At Sunset." Vocal item, selected Stan. Porter and his orchestra—selection, "La Giacconda" (Ponchiello). Frank Lanterman, organ solo. Vocal item, selected. Stan. Porter and his orchestra

Every Tuesday, at 12 o'clock, from 2 P.M. an illustrated musical lecture will be given by some well-known professor of music in Sydney.

Among those who have accepted the invitation of the A.B.C. are: Clifford Lathlean, Florent Hoogstool, Walter Thorman, Gladstone Bell, Lindley Evans, Roland Foster, Cyril Monk, Arnold Mote, Livingstone Mote, and Gerald Peachell.

—A Musical Contest, Wagner versus Verdi. Chas. McPhee, saxophone—"Visions d'Amour" (Wiedoft) Arved Norit, violin—"Hymn to the Sun" (Rimsky-Korsakoff). Stan. Porter and his orchestra—Orchestral Suite, "Summer Days" (Coates)—(a) "In a Country Lane" (b) "On the Edge of the Lake" (c) "At the Dance." Mr. Homer Lucas and Mr. Les Shugg, flute and clarinet—Duet, "The Mad Scene" from "Lucia di Lammermoor" (Donizetti), accompanied by Stan. Porter and his orchestra. Frank Lanterman, organ solo. Messrs. Norit, Challinor, Whittingham, and Howley, string quartette—"Sally in Our Alley" (arr. Pochon), "Bocherini's Minuet" (arr. Pochon), "Scottish Dances" (arr. Pochon). Stan. Porter and his orchestra—"The Thistle" (a few Scotch melodies) (Myddleton). Stan. Porter and his orchestra—"Garmen" (Bizet). 10.15: Meteorological information: British official wireless news; items of interest. 10.30: God Save the King.

3AR

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

MORNING SESSION.

11.0: Divine service from St. Paul's Cathedral; annual service for seafarers. Sermon, Dean Aickin.

MIDDAY SESSION.

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

AFTERNOON SESSION.

4.30: "Symphony in D" (Mozart), played by Halle Orchestra, conducted by Sir Hamilton Harty. 5.15: "Air on G String" (Bach), "Nocturne E Flat" (Chopin), Pablo Casals. 5.25: The week's good cause—St. Vincent's Hospital—Radium a necessity, Dr. A. N. McArthur. 5.38: Song cycle—"In a Persian Garden" (Lehmann). 6.10: Piano recital—"Etrusca Fata" (Liszt); "Etude, Op. 10, No. 3, G Flat Major (Chopin); "Dance Macabre" (Saint-Saens); "Mazurka, Op. 33, No. 4, B Minor" (Chopin); "Under the Leaves" (Thome), Mark Hambourg. 6.25: A recital of request numbers. 6.45: What's on the air to-night? 6.47: St. Paul's Cathedral bells.

EVENING SESSION

7.0: Divine service from Lydiard Street Methodist Church, Ballarat. 8.30: Choral concert from the Lydiard Street Methodist Church, Ballarat. 10.15: Weather. 10.20: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (255 Metres).

AFTERNOON SESSION.

3.0: Chamber music and songs. 4.30: Close down.

EVENING SESSION.

6.30: Requests. 8.0: Radio concert. Eddie Fitch at the Mighty Wurlitzer of the Regent Theatre. 10.0: God Save the King

4QG

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

MORNING SESSION

11.0: The complete morning service will be relayed from St. Andrew's Church of England, South Brisbane. 12.0: Close.

AFTERNOON SESSION

3.15: The concert by the Brisbane Federal Band will be relayed from the Botanic Gardens. 4.30: Close.

EARLY EVENING SESSION

6.0: A session for little listeners.

NIGHT SESSION

7.0: The complete evening service will be relayed from St. Andrew's Church of England, South Brisbane.

7.30: Evening service.

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: Carillon of bells from the Adelaide Town Hall. 11.0: Chimes. 11.1: Service from Rose Park Congregational Church. Minister, Rev. Wattle Grimmett. Organist, Mr. Stanley Brand. 12.10: News. 12.15: Close down.

AFTERNOON SESSION.

2.30: Chimes. 2.31: A Lecture by the Hon. Dr. William Brown (under the auspices of the Christian Science College of Boston, Massachusetts). 4.30: Close down.

EVENING SESSION

6.0: Chimes. 6.1: Birthday greetings. 6.45: Church Choir numbers. 7.0: Birthday League greetings. 7.1: Service from St. Bartholomew's Church, Northwood. Minister, Archdeacon Moyes. Organist, Mr. Frank Bowden.

NIGHT SESSION.

8.20: Announcements.

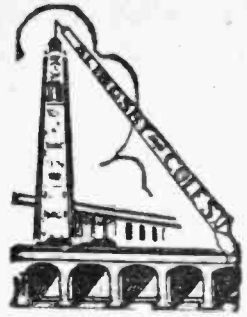
8.30: Wurlitzer Organ Recital.

9.55: News.

10.0: Close down.

Listening-in Parties

SYDNEY never lags behind in the newest vogues. Its latest takes place on a Sunday evening. Gone are the times that left the seventh day and night of the week hang heavily on our hands. What to do and what not to do on a Sunday were the most likesome do's and don'ts of the week. The Australian Broadcasting Company tell us they have thought of a way out. We think they have. They say they have been inundated with letters from listeners all over Australia, praising the quality of the Sunday night music since they took control of Australian broadcasting. These letters are really interesting to read. They come from way back of Bourke, from the Queensland border, from other States, from the city and suburbs of Sydney, and all in praise of the new Sunday broadcasts. It was a letter from a well-known family at Darling Point that decided the question of what to do with Sunday nights. The head of the family wrote in to the company to say that, for two weeks running, he and his wife have instituted "Sunday listening-in parties." A dozen or so friends have spent the evening with them round the fire, while radio has been the means of excellent entertainment.



THIS WEEK'S SPECIALS

45-volt "B" Batteries. Special Price 8/6

60-volt "B" Batteries. Special Price 10/6

Will outlast any battery of the same size.

Condensers, .0005, Single-hole mounting, pure bakelite ends. A GENUINE BARGAIN, 6/- Reduced from 7/6.

New System Headphones, 4000 ohms, super sensitive. Special Price, 15/- per pair. Greatly reduced, and every pair guaranteed.

A Rheostat worth while. Carter 20 ohm., positive contact. 2/-

ANOTHER BARGAIN. Dictagrand Cone Speakers. Special Price, £2/5/- Were selling at £5. Only a few left.

Brown H4 Speakers, 30/- Reduced from £2 2/-.

Genuine Bakelite Sockets, for UX or UV Valves. Special Price, 1/-

Two-valve Amplifiers. Make your crystal set work a loud speaker, £2/10/-, complete with valves.

Reinartz Coils, 3/3. Marco 4 Coil Kits, 8/- and 9/6.

Special Space-wound Kit, 12/6.

Meters that stand up to the job, 0.66 volts 6/-, 0-120 v. 7/-, 0-12 and 0-120 volt. Double Reading, 12/6.

It will pay you to come and have a look round.

SLINGSBY & COLES LTD.
THE RELIABLE RADIO HOUSE,
486 PITT STREET
 (Under Central Station).
 Phone, MA3809.

Local Programmes, Monday, October 14

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 the "Daily Guardian."
- 7.8: Austradio musical reproduction.
- 7.45: Mails and shipping.
- 7.48: What's on to-day?
- 7.50: Children's birthday calls.
- 8.0: Music from the Studio.
- 8.15: Close.

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

- 10.30: Announcements.
- 10.32: 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, A.P.A. and "Sun"—"Herald" news service.
- 11.15: Morning devotion.
- 11.30: Austradio musical reproduction.
- 11.53: British official wireless press.
- 12.0: "Big Ben"; Stock Exchange and metal quotations.
- 12.5: 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: Luncheon-hour Music Quartette.
- 2.0: Stock Exchange, second call.
- 2.2: A glance at the afternoon "News"
- 2.7: A morning story.
- 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

- 2.30: The 2FC Instrumental Trio.
- 2.43: Fosse Brakell, contraalto—

(a) "Fair Spring is Returning" (Saint-Saens).

(b) "Vale" (Russell).

2.50: Enid Conley, pianoforte solos—

(a) "Capriccio" (Schubert-Bauer).

(b) "Viennese Dance, G Flat Major" (Friedman-Gartner).

(c) "Viennese Dance G Major" (Friedman-Gartner).

3.0: Educational session, under the auspices of the Department of Public Instruction.—E. Breakwell, Supervisor School of Agriculture, will speak on the "Developments in Agricultural Science during the past Twenty Years."

3.15: H. F. Treharne, Supervisor of Music, will speak on "Beethoven."

3.30: The 2FC Instrumental Trio.

3.43: Fosse Brakell, contraalto—

(a) "June Music" (Kennedy).

(b) "Salaam" (Lang).

(c) "Dearest, I Love the Morning" (Wood).

3.50: Enid Conley, pianoforte solos—

(a) "Concert Study A Flat Major" (Liszt).

(b) "Seguidillas" (Albeniz).

4.0: W. S. Reay will speak on "Dr. Johnson—The Sage of the Literary Club."

4.15: The 2FC Instrumental Trio.

4.28: Stock Exchange, third call.

4.30: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

5.45: Kiddies' "Goodnight" stories, told by the "Hello Man," assisted by Aunt Eily and Nan Kaln.

6.45: Dinner Music Hour.

7.30: A.B.C. Sporting Service.

7.37: Special country session; Stock Exchange resume; markets; weather forecast; late news from the "News"; truck bookings.

7.58: To-night's programme.

NIGHT SESSION

The feature of to-night's programme is Alfred Hill's opera, "Teora," in one act, produced by Mr. Joseph Post. 2BL offers a feature of a totally different character—the big wrestling contest from the Stadium, which will be described by the A.B.C. wrestling expert. "Teora" will be preceded by a concert programme arranged by Mr. Post.

8.0: "Big Ben." The National Broadcasting Orchestra, conducted by Horace Keats—"Prometheus" (Beethoven).

Wilfred Thomas, basso—

(a) "The Raven" (Schubert).

(b) "I Love Thee" (Grieg).

(c) "Shepherd, See Thy Horse's Foaming Mane" (Korby).

(d) "Sea Fever" (Ireland).

The National Broadcasting Orchestra.

May Craven, soprano—

(a) "Do Not Go, My Love" (Hageman).

(b) "Secrecy" (Wolf).

(c) "A Spirit Flower" (Campbell Tipton).

Dulcie Blair, violinist—

(a) "Slavonic Dance," in G Minor (Dvorak-Kreisler).

(b) "Berceuse" (Faure).

The National Broadcasting Orchestra.

9.12: The country man's weather session—

(a) New South Wales forecasts.

(b) Inter-State weather synopsis.

9.15: "Teora," or "The Enchanted Flute," grand opera in one act, by Alfred Hill, produced by Mr. Joseph M. Post—
Tainui Harold Tollemache
Tohunga Wilfred Thomas
Waipata Rupert Swallow
Teora May Craven
The Spirit of Pomare John Ryan

THE STORY:

TAINUI, a Maori chief, after many encounters has slain POMARE, leader of a rival tribe, and to degrade the memory of his fallen foe, has made a flute from his arm bone. Playing on this, he hears the voice of the dead, and in consternation seeks to discover what has bewitched his flute. WAIPATA, TAINUI'S son, has been sent to POMARE'S pah to make the daughter of the vanquished chief, TEORA, captive, but falls in love with her. TAINUI breaks in upon their love scene, is furious, suspects the girl of sorcery, and vows to put them both to death. Father and son fight, but are interrupted by TOHUNGA, who suggests that TEORA be put to the test of the TRIAHA,

a sacred weapon, which, of itself, moves toward persons innocent of witchcraft. The test exonerates TEORA. TAINUI'S thoughts hark back to the flute, which he tries to pick up. Once again the spirit voice mocks him, driving him to a frenzy which ends in his death.

10.0: Rev. F. H. Raward will speak on "The Restaurants of London."

10.15: Late weather report and announcements.

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

11.30: National Anthem. Close down.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

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

MIDDAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
- 12.2: Luncheon hour music.
- 1.0: Afternoon news from the "News."
- 1.5: Studio music.
- 1.15: Women's interest talk—Miss Proctor, "Period Furniture."
- 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—A. B. Abel, "The Peanut and its Increasing Importance as a Food."
- 2.45: The Magic Carpet Series—C. Price Congrave, "Along the Darlot Pad."
- 3.0: From the Ballroom of the Oriental—Sydney Simpson's Syncopaters.
- 3.12: From the studio. Robert Scott, tenor—
- (a) "Mary of Argyle" (Nelson).
- (b) "Irish Emigrant" (Barker).
- 3.19: A popular melody.
- 3.22: From the ballroom of the Oriental—Sydney Simpson's Syncopaters.
- 3.32: From the studio. May Nancarrow, entertainer—
- "The Photographer" (Leacock).
- 3.39: Songs of to-day.
- 3.42: From the ballroom of the Oriental—Sydney Simpson's Syncopaters.
- 3.52: From the studio. Essie Neal, violinist—
- (a) "Obertass" (Wienlawski).
- (b) "Andante" (Gluck).
- (c) "Menuetto" (Milandre-Burmester).
- 4.0: From the ballroom of the Oriental—Sydney Simpson's Syncopaters.
- 4.12: From the studio. Robert Scott, tenor—
- (a) "Mary" (Richardson).
- (b) "Let Me Like a Soldier Fall" (Wallace).
- 4.19: May Nancarrow, entertainer—
- "The Art of Making Up One's Mind" (Jerome).
- 4.26: Essie Neal, violinist—
- (a) "The Toy Soldier's March" (Kreisler).
- (b) "Slavonic Cradle Song" (Neruda).
- (c) "Schon Rosmarin" (Kreisler).
- 4.33: From the ballroom of the Oriental—Sydney Simpson's Syncopaters.
- 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 hour music.
- 6.45: The A.B.C. Younger Set session—Boys' Aero Club, conducted by Mr. Norman Lyons.
- 7.5: Studio music. The Country Man's Market Session—Wool, wheat, stock, farm



**Special Fada
Built-in
Dynamic
Speakers**

(Imported)
FADA
Radio

The Fada All Electric Receivers out-distance, out-perform, out-quality any other standard Receiver. Call for a demonstration of the Fada, and let your hearing be your guide. **Built-in Fada Dynamic Speakers—Push-pull Power Amplifiers—Radio Phonographic Combination.**

Special Plugs for using Gramophone Pickup.

OPEN FRIDAYS TILL 9 P.M.
WINKWORTH'S
337 GEORGE STREET SYDNEY.
(nearly opp. Martin Place).

And at 160-164 Parramatta Rd., ANNANDALE.

produce, fruit, vegetables, poultry markets.
 7.30: Austradio musical reproduction.
 7.55: What's on the air to-night?
TO-NIGHT'S PRESENTATION
 2BL'S Monday night feature—a description of the wrestling match at the Stadium will prove a big attraction to many, but there are plenty of listeners who do not care for this sport, and they will turn with pleasure to 2FC's programme, which features to-night Alfred Hill's one-act play, "Teora."
 8.0: Harry Croot, baritone—
 "My Ship" (Del Reigo).
 "Cider" (Mullinbar).
 "Sometimes in Summer" (Bennett).
 8.7: Bert Gilbert continues his "Hopcroft Series."
 8.22: Al Hammet, saxophone—
 "Saxene" (Lewis Hunter).
 "Saxophone Scandals" (Dornberger).
 8.30: From the Stadium—
 Description of the wrestling contest by the A.B.C. wrestling expert.
 10.0: From the studio. Al Hammet, saxophone solos—
 "Serenade" (Drigo).
 "Nelma" (Leon Rosebrook).
 10.7: Harry Croot, baritone—
 "Delores" (Del Reigo).
 "Nichago" (Zucca).
 10.15: Austradio musical reproduction.
 10.25: Late news from the "Evening News."
 Late weather forecast.
 10.30: National Anthem. Close.

2GB

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

10 a.m.: Music. 10.10: Happiness talk by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs W. J. Stelzer. 11.30: Address by Miss Mary Rivett. 11.45: Close down. 2 p.m.: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Music. 3.15: Close down. 5.15: Children's session, by Uncle George. 7.0: Music. 7.45: Feature story. 8.0: Miss Maesmore Morris, contralto. 8.7: Symphony Orchestra. 8.15: Mr. Barend Harris, baritone. 8.22: Instrumental Trio. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Iverna Kyle, soprano. 8.45: Address. 9.0: Weather report. 9.1: Symphony Orchestra. 9.10: Miss Maesmore Morris, contralto. 9.20: Mr. Heath Burdock, Shakespeare recital. 9.30: Mr. Barend Harris, baritone. 9.0: Instrumental Trio. 9.50: Miss Iverna Kyle, soprano. 10.0: Instrumental music. 10.30: Close down.

2UW

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 297 Metres).

MIDDAY SESSION.—12.30: Request numbers. 1.0: Chimes; music. 1.15: Talk on homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme. **EVENING SESSION.**—5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes; request numbers. 7.45: Radio talk, by Mr. E. Homfray. 8.0: Band recital. 9.0: Chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

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

MORNING SESSION.—10.0: Tune in to the ticking of the clock. 10.3: Popular fox-trots. 10.15: Hawaiian steel guitar selections. 10.30: Women's session—home hints and information, Mrs. Gray. 11.0: A few laughs. 11.5: Pianoforte selections. 11.15: Calls and announcements. 11.20: Musical interlude. 11.30: Labor's Federal radio campaign. 11.40: Request numbers. 12 noon: Closing announcements. **CHILDREN'S SESSION.**—6.0: Birthday calls, request numbers, and kiddies' entertainment. **EVENING SESSION.**—7.0: Musical interlude. 7.15: Dance music. 7.45: Labor's Federal radio campaign. 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.
(See Friday.)



Below is the famous "Ever-Ready" HEAVY DUTY 45-Volt H.T. "B" Battery, equal in output to most other imported batteries selling at 25/- or more.
 PRICE

20/-

Let an
EVER-READY
 be your Savings Bank



"Ever-Ready" Standard Dry Cell. For the economical operation of all Dry Cell Radio Valves, Bells, Telephones, Signalling, and Electro-medical apparatus.

WHEN you buy an "Ever-Ready" Battery for your radio you buy economy. "Ever-Ready" long life, reliability and economy in operation are at your command, month after month, until these famous products of a renowned British organisation complete their extended span of ever-quiet and ever-efficient service. Start your own savings bank to-day—you'll save money by using "Ever-Ready" Radio Batteries and get service UNEXCELLED by any other battery of equal size and capacity. Obtainable from any good radio dealer.



"Ever-Ready" No. 128 Blue or "C" Battery. Improves volume and tone of reception, and lengthens the life of your "B" batteries.

Write us to-day for the interesting FREE folder about these batteries, sent by return mail.

Wholesale Distributors:—
THE EVER-READY CO.
 (GT. BRITAIN), LTD.,
 163 Pitt Street, SYDNEY.



Interstate Programmes, Monday, October 14

3LO

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

EARLY MORNING SESSION.

See Friday.

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

EDUCATIONAL SESSION.

2.0: Boys and girls of other days, Miss D. Babington 2.15: Musical Interlude. 2.20: Science in everyday life, Dr. Loftus Hills, D.Sc. 2.35: Musical Interlude. 2.40: Our Australian writers—C. H. Souter—Mr. Percival Serle. 2.55: Musical Interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: Paul Jeacle and his band—"Rhapsody Russe," "Misery Farm" (Wallace). 3.6: Adele Inman, soprano—"Now Sleeps the Crimson Petal" (Quilter), selected. 3.13: Eunice Garland, piano—"May Night" (Palmgren), "Valse Capricieuse" (Bridge). 3.20: Melodrama in one act—"The Girl," by Edward Pople. Produced by Frank Hatherley (repeated by special request) Cast—Frederick Cawley, Frank Hatherley; Bob Connell, Chas. Brennan; "Krebs," Les. Williams. Scene: The bachelor quarters of Cawley. Time: The present day. 3.35: Paul Jeacle and his band—"Speech" (Sydney Clair). 3.40: James Fraser, baritone—"On Wings of Song" (Mendelssohn), "Devotion" (Schumann). 3.47: Specialty Trio—selected. 3.53: Adele Inman, soprano—"A Little Bird that Sings" (Downs), "Love's Dawning" (Boanas). 4.0: Paul Jeacle and his band—"I'm Just a Vagabond Lover" (Zimmerman), "My Loved One" (Franco). 4.6: James Fraser, baritone—"The King's Minstrel" (Pinsuti), "Vorrei" (Tosti). 4.13: Eunice Garland, piano—"Mountain Brook" (Cyril Scott), "Concert Study" (Granados). 4.20: Bob Adams—trumpet solo. 4.24: Paul Jeacle and his band—"Breakaway" (Gottler), "That's You" 4.30: Acceptances and barrier positions for the second day of the V.A.T.O. races at Caulfield, for the Caulfield Cup. 4.35: Close down.

THE CHILDREN'S CORNER.

6.20: "Nick" and "Nack" will entertain the children and maybe instruct them a little, too.

EVENING SESSION.

6.35: Musical Interlude. 6.40: Public school activities, Mr. E. C. H. Taylor. 6.55: Musical Interlude. 7.0: Melbourne Observatory time signal. 7.1: Countrymen's session. 7.25: Recent discoveries and inventions, Mr. B. H. Wilmott. 7.40: News service. 7.45: The world's kaleidoscope, Prof. K. H. Bailey, M.A., B.C.L. 8.0: Time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra—overture, "Benvenuto Cellini" (Berlioz). 8.6: Marjory Allomes, contralto—"The Little Old Garden" (Hewitt), "Lavender Days" (Drummond).

PIANO RECITAL.

8.13: Margaret Sutherland, piano—selections from the works of modern composers. 8.25: May Craven, soprano—"Love, I Have Won You" (Ronald), "The Song of the Palanquin Bearer" (Shaw).

AN ORIGINAL RADIO MUSICAL COMEDY.

8.32: "Stop Flirting," written especially for broadcasting by Gordon Ireland. Produced by Hugh Huxham. Cast of characters: Mr. Ignace Pepper (rather henpecked), Tom Preston; Mrs. Pepper (his affectionate wife), Edith Huxham; Reggie Harcourt (in love with Cynthia), Gordon Ireland; Cynthia, Violet Jackson; Gerald Hudson (in love with Nina), Howard King; Nina, Mae Seaton; Ruggles (a waiter), Hugh Huxham. Scene 1: Reg. Harcourt's drawing-room. Scene 2: Ciro's cabaret. Scene 3: Reg. Harcourt's drawing-room.

MASSED VOICES.

Transmission from Athenaeum Hall.

9.30: The Royal Victorian Liedertafel (conductor, J. Sutton Cook). Unaccompanied part songs, "Every Rustling Tree" (Kuhlan), "If Thou Art Sleeping, Maiden" (Plumpton). Part song, "At Adernach in Rhineland" (Abt). "The Blue Danube Valces" (Eissner), arranged for male voices (by request). Unaccompanied part songs, (a) "Spin, Spin" (Jungst), (b) "When Evening's Twilight" (Hattoen). Operatic chorus, "The Bandit's Chorus" from "Ernani" (Verdi).

FROM THE STUDIO.

10.0: National Broadcasting Orchestra—"Valse Suite" (German). 10.8: Tom Preston, comedian—"Smile a While." 10.14: Violet Jackson, soprano—"Rendezvous" (Aelter) (by request). 10.17: Gordon Ireland, "The Apostle of Pep"—songs at the piano.

NEWS SESSION.

10.20: Meteorological information; British official wireless news; items of interest.

DANCE MUSIC.

10.30: "The Rex" Dance Band.

11.30: God Save the King.

3AR

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

MORNING SESSION

See Friday.

MIDDAY SESSION

See Friday.

AFTERNOON SESSION

2.1: Band music, The Royal Guards' Band. 2.6: Comedienne, Edith Clifford. 2.10: Violin, Toscha Seidel. 2.14: Tenor, James Nielson. 2.18: Band music, The Royal Guards' Band. 2.24: Comediana, Will Fyffe. 2.28: Piano recital, Adam Carroll. 2.34: Baritone, Len Maurice. 2.38: Instrumental, Norman Clark and his South Sea Islanders. 2.42: Comedian, Vaughan de Lesth. 2.48: Violin, Toscha Seidel. 2.52: Comedian, Milton Hayes. 2.50: Piano, Adam Carroll. 3.0: Request numbers.

MAINLY FOR WOMEN

3.20: Your clothes, Miss Ruth Bunting. 3.35: Musical Interlude. 3.40: Your garden—the Iris, Mr. A. Antonio. 3.55: Musical Interlude. 4.0: Wanderings through Southern India, Miss Stella Parker.

TRADERS' DEMONSTRATION SESSION

4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION

6.15: Dinner music, supplied by the Studio Light Orchestra. 7.32: Sporting results; acceptances and barrier positions for the second day of the V.A.T.C. races at Caulfield on Wednesday, October 16. 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION

8.1: Recent books of note, Mr. A. A. Phillips, B.A. 8.15: Brunswick City Band. Conductor, Hugh Niven. Overture, "The Barber of Seville" (Rossini). 8.23: "The Two Wags"—Mirth and melody. 8.30: "The Gay Cavaliers"—Spanish guitar solo, with vocal chorus. Latest popular melodies (banjos). Ukulosties. Banjo Trio—Plantation and popular melodies. 8.38: Eileen Starr, soprano—Selected. 8.45: Helga Brennecke, cello—Slow movement from Concerto in B Minor (Goldmann). "Wings of Love" (Mendelssohn). 8.53: Horace White, tenor—"Onward, Awake Beloved" (Cowen). "Now Sleeps the Crimson Petal" (Quilter). 9.0: Brunswick City Band—Fantasia, "Jupiter." 9.6: Mary Craven, soprano; Marjory Allomes, contralto—Duet, "Love's Dream" (Besley). Selected. 9.13: Helga Brennecke, cello—"Drink to me only with thine Eyes" (Squire). "Romance" (Rubenstein). Rustic Dance (Squire). 9.20: Horace White, tenor—"Miraval's" (Hill). "Miviana" (Adams). 9.27: The Gay Cavaliers—St. Luis Blues—Novelty duo. Close Harmony—Trio. Comedy playing, singing, and talking. 9.27: The Two Wags—Music and nonsense. 9.44: Brunswick City Band—Selection. "Recollections of Carl Rosa" (Rounds). 9.53: Eileen Starr, soprano—Selected. 10.0: Weather information and "Herald" news. 10.10: Brunswick City Band—Cornet solo, "Ora Pro Nobis" (Piccolomini). 10.16: Hueh and Edith Huxham—Duet, "The Sile at the End of the Lane." 10.20: "The King's Guard" (Keith). "Beaten at the Post Office" (by some who know). 10.24: Brunswick City Band—March, "The King's Guard" (Keith). 10.30: God Save the King.

3DB

The "Herald" Broadcasting Station, Flinders Street, Melbourne (255 Metres).

MORNING SESSION.

11.0: The Herald community singing session. Thelma Ready's Band, transmitted from the Auditorium. 12.0: Community singing from the Auditorium; conductor, G. J. Mackay; accompanist, Reg. Brown. 1.45 Close down.

AFTERNOON SESSION.

2.15: Band of Royal Air Force, "Colonel Boney." 2.30: John Turner (tenor), "I hear you calling me." 3.0: Radio hour. 4.0: Close down.

EARLY EVENING SESSION.

5.0: Austin Murecotti's session. 5.30: Charles Hackett, "Because." 6.0: Reo Grande Tango Band, "Trot." 6.30: Norman Long, "What did the Village Blacksmith say?" 7.0: Dajos Bela Orchestra, "Caprice Viennois." 7.15: Market reports. 7.20: Market reports. 7.30: Fred Rich and his Orchestra, "Wedding Bells."

EVENING SESSION.

8.0: Sponsored programmes. 9.0: The Herald hour. 10.0: Dajos Bela Orchestra, "Dancing Demoiselle." 10.30: Richard Tauber, "Impatience." 10.40: News. 10.45: Emanuel Frenermann (cello), "Traumerel." 11.0: God Save the King.

4QG

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

FOR DAY SESSION SEE FRIDAY.

NIGHT SESSION

8.0: The Ipswich Vice-Regal Brass Quartette—"Oberon" (Rounds). 8.6: A Thought for To-night (Will H. Lister)—"Having a National Pride." 8.10: Jack Lord (tenor)—"On with the Motley" (Leoncavallo). 8.15: Daisy McDowell and Mrs. A. F. Stoddart—vocal duet, "I've Been Roaming" (Horn). 8.19: The Ipswich Vice-Regal Brass Quartette members—instrumental trio, "Merry Sunshine" (Rounds). 8.25: J. P. Cornwell (bass)—"West Sussex Drinking Song" (Gurney). 8.30: F. Bower and J. W. Burgemeister—instrumental duet, "Norma" (Bellini). 8.35: The Ipswich Vice-Regal Brass Quartette—"Scotia" (Roma). 8.40: Jack Lord (tenor)—"Macushla" (Macmurrough). 8.45: Douglas Drouyn and His Trio—featuring the Electric Vibra Harp. 8.55: Daisy McDowell and Mrs. A. F. Stoddart—"Sweet Babe, a Golden Cradle Holds Thee" (Moffat). 9.0: Metropolitan weather forecast. 9.1: The first talk in connection with 4QG's Home Garden Scheme—"An Outline," by "Tecoma." 9.11: Radio comedy—"That Brute, Simmons" (Arthur Morrison). Cast: Bob Ford and Thomas Simmons, Ernest Barry, Mrs. Simmons, Dulcie Scott. Scene: Kitchen in the house of Simmons. 9.40: Douglas Drouyn and His Trio—featuring the Electric Vibra Harp. 9.50: J. P. Cornwell (bass)—"A Devonshire Wedding" (Phillips). 9.58: The Rhythm Rascals, entertainers. 10.30: News; weather. Close down.

5CL

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

MORNING SESSION

11.15 to 2.0: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EVENING SESSION.

6.0 to 7.30: See Friday.

NIGHT SESSION.

8.0: Chimes. 8.1: Programme review. 8.10: Walter Barratt and his Maison Masters of Melody—"The Iron Division," "Chilly Pom Pom Pee," "Marie" (Berlin). Selected. 8.20: Mary Edson, soprano—"Rose Softly Blooming" (Spohr). 8.24: Walter Barratt and his Maison Masters of Melody—"That's How I Feel About You," "Misery Farm" (Wallis). 8.30: Phyllis Cooper, pianiste—"Schubert's Impromptu in A Flat." 8.35: Walter Barratt and his Maison Masters of Melody—"A Little Dickie Bird Told Me So" (Le Clerq), "Jizzy Azzy Wozzy," "The Breakaway." 8.48: Dr. P. Roy Newling, baritone. 8.49: Walter Barratt and his Maison Masters of Melody—"Love Sings a Song in My Heart" (Cherniavsky), "That's You, Baby" (Conrad), "A Precious Little Thing Called Love" (Davis). 9.0: Chimes. 9.1: Meteorological. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Walter Barratt and his Maison Masters of Melody—"Broadway Melody" (Brown), "Rio Rita" (Tierney), "The Kinkajou" (Tierney). 9.15: Mary Edson, soprano—"Only With You" (Heuter). 9.19: Walter Barratt and his Maison Masters of Melody—"Louise" (Whiting), "I'm Sitting on Top of the World Alone" (Whiting), "Vo te amo" (Whiting). 9.29: Dr. P. Roy Newling, baritone. 9.33: Walter Barratt and his Maison Masters of Melody—"The Story of American Melody" (Somers), "Ramona" (Wayne), "The Dance of the Paper Dolls" (Tucker). 9.43: Mary Edson, soprano—"The Lent Lily" (Mar-iller). 9.47: Walter Barratt and his Maison Masters of Melody—"Flower of Love" (Dreyer) "A Room with a View" (Coward). 9.53: Dr. P. Roy Newling, baritone—Selected. 9.57: Walter Barratt and his Maison Masters of Melody—"You're Wonderful" (Field), "You Were Meant for Me," "Round and Round" (Le Clerq). 10.7: Mary Edson, soprano—"Carlissima" (Penn). 10.11: Walter Barratt and his Maison Masters of Melody—"I Can't Give You Anything but Love" (McHugh). 10.15: News Session. 10.30: Walter Barratt and his Maison Masters of Melody. 11.0: Chimes. Close down.

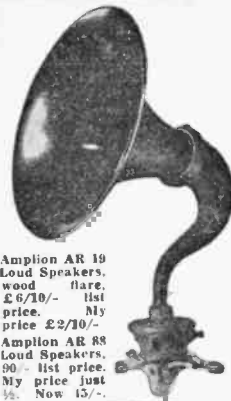
6WF

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

FOR DAY SESSION, SEE FRIDAY.

EVENING SESSION.—8.0: Town Hall chimes. 8.1: A.B.C. Revue Company. 10.0: Chimes. 10.1: Temple Court Dance Band, conducted by Merv. Lyous. 10.57: Features of to-morrow's programme. 11.0: Chimes.

More Astounding Radio Snaps from LEVENSON'S Radio, Sydney



Amplon AR 19 Loud Speakers, wood flare. £6/10/- 1st price. My price £2/10/-
Amplon AR 88 Loud Speakers, 90 - 1st price. My price just 1/2. Now 15/-.



De Jur Grid Condensers. .00025, 1/9.



The Famous Music Master Loud Speaker De Luxe, wood flare. £9/4/- original price. Now 6s/-.



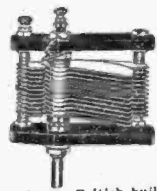
Electrolytic Condensers for Stedipower Unit. 25/-.



De Jur U.X. Valve Sockets, 1/3.
Alpha U.X. Spring Valve Sockets, with terminal 1/9.



Stromberg Carbon Loud Speakers, £8/3/- 1st price. My price £3.



.0005 British-built Variable Condensers, aluminum plates, 1-hole mount, 4/9 and 5/-.



De Jur Switch Rheostat, 3/9.



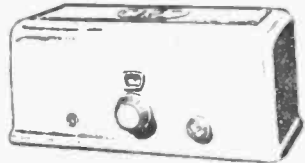
De Jur A.C. U.V. Valve Sockets, solder terminal, 1/9.



Lissen British Audio Transformers, Bakelite Moisture-proof case. Now 12/6.



De Jur 3-stage Amplifier. A real job. 42/-.



American 6-valve Shielded "Day-Fan" Radio Receiving Set. £38 complete agents' price. My price, Chassis only, £10, or complete with Loud Speaker, £22/10/-.



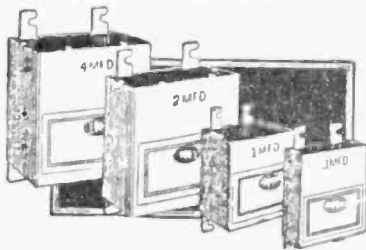
Morris Earth Clamps. 1/-.



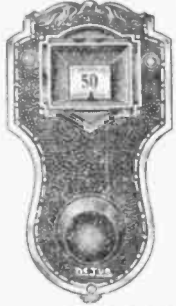
De Jur 1930 Browning Drake Coil Kit, 22/6, and worth two of any other make.
Lissen English Gramophone Pick-ups, with tone control attached. 15/-.



Lissen Loud Speaker Units, 18/9. British Reeds for converting same to Cone Speaker. 1/-.



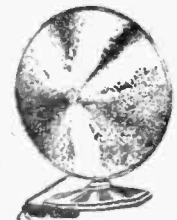
By-pass Condensers, 1000-volt test. 4 mfd., 7/-; 2 mfd., 3/3; 1 mfd., 600-volt test, 2/9.
Lissen Super Audio Giant Transformers, British built. Nothing to equal them. Now 21/-.



De Jur Illuminated Dial. The Best money can buy. 12/6.



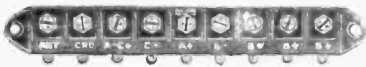
De Jur Output Transformers, protects your speaker and produces better reproduction results. 45/- Now 30/-.



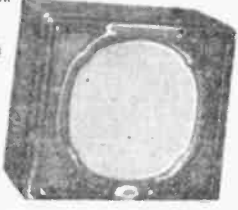
Hegra Senior Cone Loud Speakers. 45/- Now 35/-.



Push Pull Filament Switches, panel mount. 1/6.



De Jur Battery Strip, 2/9.



Hegio Cone Cabinet Speaker, cedar and gold centre, 45/-.



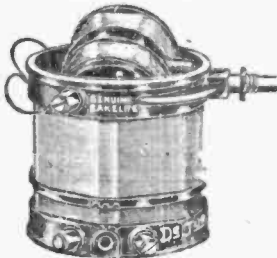
Like a Flash, 45-volt Heavy Duty "45" Batteries, vertical type. 25/- value. My price 15/-.



Morris Ball Aerial improves reception. America's latest, 30/-.



Electron Insulated Aerial Wire, 100ft. Boxes. Now 2/-.



De Jur 3-coil Interstate Tuner, wound on Moulded Bakelite Single Hole Mounts. 15/-.

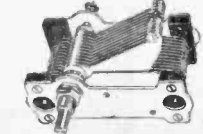


De Jur 3-stage Resistor Coupling Units, 22/6, or 7/6 each stage.

Send 9d in stamps for new Illustrated Catalog, 4/- Coupon enclosed. Now ready. Send for It To-day.
LEVENSON'S BARGAIN PRICE LIST FOR OCTOBER. Also have us send you the New Speaker Bargain Pamphlet.

LEVENSON'S RADIO

The Palace of Wireless, 266 PITT STREET, SYDNEY.
Branch: 88A Pitt Street, Between Hunter St. and Martin Place.
SPECIAL ATTENTION TO MAIL ORDERS. PROMPT DESPATCH.
PLEASE ADD FREIGHT, AS PRICES ARE CUT TO THE QUICK. HONEST ATTENTION.



English Ball-Bearing .0005 Variable Condensers, single hole mount, aluminum plates, 10/6 value. Now 5/9. The best seller in Radio.



De Jur Thermotrol, or Fixed Rheostat. There's one for every valve. 4/9, with clips.

Local Programmes, Tuesday, October 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 "Daily Guardian."
 7.8: Austradio musical reproduction.
 7.45: Mails and shipping.
 7.48: What's on to-day?
 7.50: Children's birthday calls.
 8.0: Music from the studio.
 8.15: Close.

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

- 10.30: Announcements.
 10.32: A.B.C. racing observer.
 10.45: Horace Weber at the Grand Organ.
 11.0: Household Hints: Hints to Housewives by Miss Ruth Furst.
 11.10: Cables (copyright), A.P.A. and "Sun"—"Herald" news service.
 11.15: Morning devotion.
 11.30: Austradio musical reproduction.
 11.53: British official wireless press.
 12.0: "Big Ben." Stock Exchange and metal quotations.
 12.5: Clifford Lathlean: "Illustrated Music Lecture."
 12.20: Midday weather forecast and weather synopsis. Special produce market session for the man on the land, supplied by the State Marketing Board.
 12.30: Close.

THE LUNCH HOUR—1 p.m. to 2.30 p.m.

- 1.0: Luncheon Hour Music Quartette.
 2.0: Stock Exchange, second call.
 2.2: A glance at the afternoon "News."
 2.7: Popular Education: E. L. Troughton will speak on "Egg Laying Mammals."
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.30 p.m.

Note: Race results from Menangle will be transmitted as received.

- 2.30: The 2FC Instrumental Trio.
 2.42: Horace Keats, pianist—
 (a) "Chant d'Amour" (Paderewski).
 (b) "She Smiles" (Poldini).
 (c) "Tone Pictures" (Grieg).
 2.50: Mab Fotheringham, soprano—
 (a) "The Miller and the Maid" (Marzials).
 (b) "His Little Teddy Bear" (Levey).
 (c) "Heaps o' Lickin'" (Clarke).
 2.57: The 2FC Instrumental Trio.
 3.12: Cedric Howard Ashton, 'cellist—
 (a) "Romance" (Saint Saens).
 (b) "Courante" (Bach).
 3.19: Horace Keats, pianist—
 (a) "Danse des Mirlitons" (Tschalkowsky).
 (b) "Romance" (Tschalkowsky).
 3.26: The 2FC Instrumental Trio.
 3.41: Mab Fotheringham, soprano—
 (a) "Someone and Somebody" (Clarke).
 (b) "The Night Nursery" (Arundale).
 3.48: Cedric Howard Ashton, 'cellist—
 (a) "Chanson Villageoise" (Popper).
 (b) "Altar of Eve" (Wagner).
 3.55: Louise Homfrey will speak on "The Impressions of a Wanderer."
 4.10: The 2FC Instrumental Trio.
 4.28: Stock Exchange, third call.
 4.30: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" stories told by Aunt Willa, assisted by Cousins Gwen and Clarice.
 6.45: Dinner hour music.
 7.30: A.B.C. sporting service.
 7.37: Special country session. Stock Exchange resume. Markets. Weather forecast. Late news service from the "News" Truck bookings.
 7.58: To-night programme.

NIGHT SESSION.

The State-wide Radio Dance Night, through 2FC each Tuesday, still finds favor with many hundreds of listeners, just as the contrasting programme through 2BL is eagerly anticipated by those who prefer not quite so frivolous a type of entertainment, for Tuesday is 2BL's classic night, and the pro-

gramme under G. Vern Barnett's direction is always a musical treat.

- 8.0: "Big Ben"; the Australian Broadcasting Dance Orchestra.
 8.12: Charles Lawrence, entertainer—"That rests entirely with her."
 8.20: The Australian Broadcasting Dance Orchestra.
 8.32: Violet Elliott in comedy numbers.
 8.40: The Australian Broadcasting Dance Orchestra.
 8.52: Allan Martin, banjoist—
 (a) "Dinah's Wedding" (Pidoux).
 (b) "Fernbank," Quickstep (Oakley).
 8.59: The country man's weather session—
 (a) New South Wales forecasts.
 (b) Inter-State weather synopsis.
 9.0: The Australian Broadcasting Dance Orchestra.
 9.12: Roger Jones, baritone—
 (a) "Just a Cottage Small" (Hanley).
 (b) "Beneath the Lilac Blossom" (Brown).
 9.19: The Australian Broadcasting Dance Orchestra.
 9.31: Dulcie Blair, violinist—
 (a) "Sleepy Valley" (Hanley).
 (b) "Broadway Melody" (Brown).
 9.38: The Australian Broadcasting Dance Orchestra.
 9.50: Dulcie Blair, violinist—
 (a) "When Summer is Gone" (Wilhite).
 (b) "Blue Hawaii."
 9.57: The Australian Broadcasting Dance Orchestra.
 10.15: Late weather report and announcements.
 10.20: The Australian Broadcasting Dance Orchestra.
 11.30: National Anthem. Close.

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.
 10.2: News from the "Labor Daily."
 10.5: News from the "Daily Guardian."
 10.10: Austradio musical reproduction.
 10.40: The Australian Broadcasting Company's Women's Association, conducted by Miss Gwen Varley.
 11.0: G.P.O. chimes. Close down.

MIDDAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
 12.2: Luncheon hour music.
 10: Afternoon news from the "News"
 15: Studio music.
 1.15: Women's interest talk—Sister Parry, "Home Nursing Hints."
 1.30: Austradio musical reproduction.
 2.0: J. Knight Barnett at the Wurlitzer.
 2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business efficiency talk—Fred Arlington-Burke, "Benefits and Faults of Mass Production."
 2.45: The Magic Carpet Series—Tom Gurr, "The Maori Tangi!"
 3.0: Ann Stuart Gurr, mezzo—
 (a) "Tangi" (a Maori lament) (Hill).
 (b) "Pokarekare" (a Maori love song) (Hill).
 3.8: Austradio musical reproduction.
 3.30: Edith Cowley, entertainer—
 (a) "All the Men are Wonderful."
 (b) "The Day He Took Me to Wembley."
 3.37: Peggy Bell, soprano—
 (a) "One Love Slave" (MacCunn).
 (b) "May Dream" (Phillips).
 3.44: Radio rhythm.
 3.52: Edith Cowley, entertainer—
 (a) "Up Came Bonzo."
 (b) "There's a Little Bit of Bad in Every Good Little Girl."
 4.0: Peggy Bell, soprano—
 (a) "O Ship of My Delight" (Phillips).
 (b) "Fragile Things" (Phillips).
 (c) "My Castles" (Del Riego).

- 4.7: A dance number.
 4.12: Ann Stuart Gurr, mezzo—
 (a) "Walata Poi" (Hill).
 (b) "Walata Maori" (Hill).
 4.19: Melody memories.
 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 hour music.
 6.45: The A.B.C. Younger Set Session—Girl Guides, conducted by Miss Gwen Varley.
 7.5: Studio music. The country man's market session—wool, wheat, stock, farm produce, fruit, vegetable, pig and poultry sales.
 7.30: Austradio musical reproduction.
 7.55: What on the air to-night?

TO-NIGHT'S PRESENTATION—8 to 10.30 p.m.

Our classic programme to-night will prove a pleasing contrast to those to whom dance music, which is being broadcast through 2FC, does not appeal.

- 8.0: Clement Q. Williams, baritone—
 "The Strange Woman" (Loughborough).
 "The Misty Isle" (Loughborough).
 8.7: Joan Fry, pianist—
 "Variations Serieuses" (Mendelssohn).
 8.17: Ethel Daw, contralto—
 "Where Carols Lie" (Edward Elgar).
 "In Haven" (Edward Elgar).
 8.24: Hugh McClean, violinist—
 "Symphonie Espagnole" (Edouard Lalo).
 8.31: Gladys Carlisle, soprano—
 "Flowering Trees" (Montague Phillips).
 (a) Lilac.
 (b) Laburnum.
 (c) Hawthorn.
 8.38: Norman Martin, 'cellist—
 "Elegie" (Gabriel Faure).
 8.45: Clement Q. Williams, baritone—
 "Exiled" (Loughborough).
 "The Terrible Robber Men" (Hughes).
 8.52: Hugh McClean, violinist—
 "Caprice No. 20" (Paganini-Kreisler).
 "Valse Bluette" (Drigo-Auer).
 9.0: Ethel Daw, contralto—
 "Sink, Red Sun" (Del Riego).
 "The Last Hour" (Kramer).
 9.7: Joan Fry, pianist—
 "Nocturne" (Faure).
 "Spanish Dance" (Granados).
 "Girl with the Flaxen Hair" (Debussy).
 9.17: Gladys Carlisle, soprano—
 "So We'll Go No More A-roving" (Maude V White).
 "Boat Song" (Harriet Ware).
 9.24: Norman Martin, 'cellist—
 "Ballade" (C. Warlock Evans).
 "Finlandisch" (Max Bruett).
 9.31: Late weather forecast for the man on the land.
 9.32: George Black continues his series of talks—"In My Anecdote."
 9.47: Now, just a little time for nonsense—with Charles Lawrence and his Merry-makers.
 10.25: Late news from the "Evening News."
 Later weather forecast.
 10.30: National Anthem. Close.

2GB

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

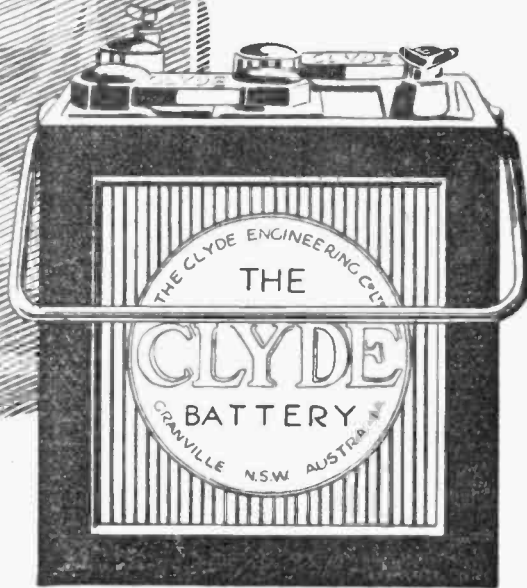
- 10 a.m.: Music. 10.10: Happiness Talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs. W. J. Stelzer. 11.30: Music. 11.45: close down. 2 p.m.: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Movie Know All. 3.0: Music. 3.30: Close down. 5.15: Children's Session, by Uncle George. 7.0: Music. 7.30: Service Talk, by Sutton's Radio Doctor. 7.45: Feature Story. 8.0: Miss Heather Kinnaird, contralto. 8.7: Violin solos. 8.15: Mr. Leslie Herford, baritone. 8.22: Symphony Orchestra. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Gladys Verona, soprano. 8.45: Miss Ada Brook, pianiste. 8.50: Miss Heather Kinnaird, contralto. 9.0: Weather report. 9.3: Address. 9.15: Violin solos. 9.25: Mr. Leslie Herford, 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 down.

(For 2UW, 2KY, and 2UE, see page 47.)

CLYDE

**FOR ALL
TIME**

**MORE POWER
TO
YOU**



The rugged strength of the Clyde gives it the capacity to stand up to heavy demands over a very long period.

PUNCH — PERMANENCE — POWER

CLYDE

RADIO BATTERIES

Clyde Batteries for Radio, Cars, and Home-lighting are made by The Clyde Engineering Co., Ltd., Granville, N.S.W., largest manufacturers of storage batteries in Australia. Obtainable at all Radio Dealers and Garages throughout the Commonwealth.

Interstate Programmes, Tuesday, October 15

3LO

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

EARLY MORNING SESSION.

See Friday.

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

EDUCATIONAL SESSION.

2.0: Stories from the operas, with musical illustrations, Miss D. Babington. 2.15: Musical interlude. 2.20: The Romance of the Slave Coast. Mr. A. A. Downs. 2.35: Musical interlude. 2.40: A Talk in French. Mons. Th. Rouel. B.A. 2.55: Musical interlude.

THE RADIO MATINEE.

3.0: The Studio Light Orchestra, overture—"A May Day" (Haydn Wood). 3.6: W. Collier, tenor—"Angels Guard Thee" (Goddard). "I Heard You Go By" (Wood). 3.13: Bertha Jorgensen, violin—"Scherzo" (Van Goens). 3.18: Sylvia Nelson, monologue—"Rose's Relations." Selected. 3.24: The Studio Light Orchestra—"The Turkish Patrol" (Michaelis), "The Swan" (Saint-Saens). 3.30: Syd Hollister, comedian—"Just for Fun." 3.40: Cecil Fraser, piano novelties—Five Minutes of Syncope. 3.45: Wilfred Collier, tenor—"Mountain Lovers" (Squire), "The Star" (Rogers). 3.52: The Studio Light Orchestra—"Madrigal" (Donatelli), "March of the Toys" (Herbert). 4.0: Sylvia Nelson—A dramatic monologue. 4.7: Tasma Tiernan, cello—"On Wings of Song" (Mendelssohn). 4.12: Syd Hollister, comedian—"Topicalities." 4.22: The Studio Light Orchestra—Selection from "Maytime" (Romberg). 4.30: Close down.

THE CHILDREN'S CORNER.

5.45: "Bobbie Bluegum." 6.20: Girl Guide doings.

EVENING SESSION.

6.35: Musical interlude. 6.40: Careers for our boys and girls—How to Become an Airman. Mr. Eric Cooper. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's selection. 7.25: For the man on the land—Poultry Improvement. Mr. W. C. Hugg. 7.40: News service. 7.45: University extension series—The Movements

WEHI GRIEG has a soprano voice of unusual sweetness, which is heard to great advantage in solos and duets with her partner, Keeki. Most of the Hawaiian music is unpublished—having been handed down from generation to generation.

IN these days of scientific research, when colour is supposed to have such a great effect on our general health and well being, the matter of introduction of colour into our various rooms is all-important. Quite apart from a decorative standpoint, it has been definitely proved that certain colours suggest sleep, others promote energy and brightness, and others, again, induce good temper.

To those listeners who contemplate the re-arrangement of their furniture and furnishings, the talk on "Colour in the various rooms," to be given from 3AR on October 15 by Miss Lucy Ahon, should be productive of many helpful suggestions.

"STOP FLIRTING," a merry musical trifle, specially written for radio by Gordon Ireland, will be produced at 3LO on October 14 by Hugh Huxham. Mr. Ireland has had much experience in this class of entertainment, and has produced several radio revues. The plot of "Stop Flirting" concerns the adventures of Mrs. Pepper and her hen-pecked husband, and gives ample opportunity for the introduction of many clever skits and musical novelties.

FROM the Electoral Office, 3LO will broadcast the results of the progress counting, which will commence at 8 o'clock on Saturday, October 12. It is expected that the first returns will be available at about 8.30, and counting will continue until after midnight.

of the Stars, Prof. E. J. Hartung, D.Sc. 8.0: Melbourne Observatory time signal.

NIGHT SESSION.

8.0: National Broadcasting Orchestra—"Polonaise" (Handel), "Arietta" (Handel), "Passacaglia" (Handel).

8.8: Marjory Allomes, contralto—"Ombra Mai Fu" (Handel).
8.14: George Findlay, piano—Movements from "Moonlight" Sonata" (Beethoven), Adagio Sostenuto. Allegretto.

8.21: J. Alexander Browne, baritone—(a) "I Will Not Grieve" (Schumann), (b) "The Two Grenadiers" (Schumann).

8.27: National Broadcasting Orchestra—Overture, "Ruh Blas" (Mendelssohn).
8.33: Mary Craven, soprano—Ario, "Elsa's Dream" (from "Lohengrin," Wagner).
8.40: Edouard Lambert, violin—"Canzonetta," from Concerto (Tschakowsky).

8.45: J. Alexander Browne, baritone—(a) "The Jolly Miller" (Quilter), (b) "Over the Mountains" (Quilter).
8.51: National Broadcasting Orchestra—"Country Gardens" (Grainger), "Shepherd's Hey" (Grainger), "Mollie on the Shore" (Grainger).

9.0: The Melbourne Repertory Theatre presents, "Augustus in Search of a Father," a comedy in one act, by Harold Chaplin. Persons of the play (in order of speaking): A Policeman, R. R. Hones, A Night Watchman, Frederick Drew, Augustus, Frank D. Clewlow. The scene is the corner of a London Square at about one o'clock on a winter's night. The road is up.

9.30: Louis Hattenbach, cello—"Meditation" (Bach-Gounod), "Berceuse Slave" (Neruda), "German Dance" (Dittersdorf), "Gipsy Dance" (Jeral).
9.45: Mary Craven, soprano, and Marjory Allomes, duet—"Down the Vale" (Moir), "Who Knows?" (Ball).

9.52: National Broadcasting Orchestra—"A Children's Overture" (Quilter).

SOMETHING DIFFERENT.
10.0: Gus Quinn—"Radio Magic." Have your pencils and paper ready.

10.10: Huxham's "Serenader" Quartet Party—In Harmony and Humor.

10.20: Weather news.

10.30: "The Rex" Dance Band.

11.30: God Save the King.

3AR

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

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

AFTERNOON SESSION.

2.0: Orchestral, the Halle Orchestra. 2.8: Tenor, Charles Hockett. 2.16: Piano, Ignaz Friedmann. 2.24: Orchestral, Queen's Hall Orchestra. 2.48: Choral, Don Cossacks' Choir. 2.56: Band music, His Majesty's Grenadier Guards Band. 3.0: Request numbers. 3.20: Mainly for women. The Baby—When Should You Baby Walk? Sister Anne Purrell. 3.35: Musical interlude. 3.40: Useful crafts at home—"How Americans Earn Money at Home." Dr. Cecile Grell (New York). 3.55: Musical interlude. 4.0: The latest fashions. Madame La Mode, traders' demonstration session. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

6.15: Dinner music, supplied by the A.B.C. Troubadours. 7.32: Sporting results. 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION.

8.1: Romantic historical stories—Mr. J. R. Lyall, B.A.

DANCING AND VARIETY.

8.15: Paul Jeacle and his band—"Memphis Sprawl" (Joe Tarler), "I Lift Up My Finger and I Say Tweet Tweet" (Sarony).

8.22: Syd Exton, tenor—"Boat Song" (Ware), "For You Alone" (Geehi).

8.29: Austin Anderson, entertainer, at the piano—Monologue, "The Story of Rachmaninoff's Prelude." 8.35: Gus Quinn, radio magician—have your pack of cards, pencil, and paper in readiness.

8.45: Paul Jeacle and his band—popular numbers.

8.51: J. and G., the Confidential Two—"Weary River," piano novelty, "Sweetheart of All My Dreams."

9.0: Bob Libbes, trombone—selected.

9.5: Adele Inman, soprano—"Hands and Lips" (Coningsby Clarke), "You, Dear, and I" (Coningsby Clarke).

9.12: Paul Jeacle and his band—"Down South" (Myddleton), "Bottles and Jars" (Syd Reel).

9.18: Syd Exton, tenor—"Coming Home" (Willeby), "Mother of Mine" (Tours).

9.25: Austin Anderson, entertainer—Comedienne, "Mr. and Mrs. Flannigan."

9.33: George Bodley and Paul Jeacle—Saxophone duet, selected.

9.38: Paul Jeacle and his band—popular numbers.

9.49: Adele Inman, soprano—"Our Little Love" (Coningsby Clarke), "The Lilac Tree" (Gartlan).

9.56: Claude Jeacle—saxophone solo, "I Love You Truly."

10.0: Weather.

10.10: J. and G., the Confidential Two—In happy vein.

10.20: Paul Jeacle and his band—"Big City Blues," "Walking with Susie," "Slow Gee Gee," "Vladivostock."

10.30: God Save the King.

4QG

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

For day sessions see Friday.

NIGHT SESSION

4QG Choir and 4QG Concert Orchestra (conducted by Erich John)—Grand Opera.

The 4QG Concert Orchestra—"Overture" from Caliph of Bagdad" (Boildieu).

4QG Choir and 4QG Concert Orchestra—"March," from "Tanhauser" (Wagner).

Pat McOnigly (soprano)—Selected.

Mildred Bell (contralto) and Stanley Tamblin (bass-baritone)—duet, "Barcarole" from "Tales of Hoffman" (Offenbach).

Male Chorus—"Soldiers' Chorus" from "Faust" (Gounod).

Concert Orchestra—"Prize Song" from "Master Singers of Nurnberg" (Wagner).

Group II.—Flower Suite—George Williamson (tenor)—"Violets" (Wright), Choir—"Tulips" (Sharpe).

Mabel Malouf (soprano) and George Williamson (tenor)—"Rose Among the Heather" (German folk song).

Mildred Bell (contralto)—"Purple Pansies" (Johnson).

Concert Orchestra—"Whispering Flowers" (Blon).

Group III.—In the Chapel—Male Chorus—"Come, Follow Me" (Erich John), Mabel Malouf (soprano)—selected.

Choir and 4QG Concert Orchestra—"The Heavens Are Telling," from the oratorio "Creation" (Haydn).

Concert Orchestra—"Chapel on Stony Island" ("Kemmenol-Ostrow," Rubinstein).

9.0: Weather forecast.

Group IV.—Miscellaneous—George Williamson (tenor)—"I'll Sing Thee Songs of Araby" (Clay).

Pat McOnigly (soprano)—"Pipes of Pan" (Monckton).

Stanley Tamblin (bass-baritone)—"Merry Monk" (Bevan).

Male Chorus—"Debate in the Popton Shire Council" (West).

Concert Orchestra—"Les Patineurs" (Waldeutele).

Group V.—Classical—George Williamson (tenor)—"With a Painted Waistband" (Beethoven).

Pat McOnigly and Mildred Bell—vocal duet, "Maidens through the Meadows Roaming" (Rubinstein).

Choir—"Gipsy Life" (Schumann).

Concert Orchestra—"15th Hungarian Rhapsody" ("Rackoczy March," Liszt).

Group VI.—Light Opera—George Williamson (tenor) and Stanley Tamblin (bass-baritone)—"Gendarmes' Duet" from "Genevieve of Brabant" (Offenbach).

Mildred Bell (contralto)—"A Dance for Jack" (Monckton).

Male Chorus—"Cooper's Song" from "Boccaccio" (Suppe).

Concert Orchestra—"Waltz" from the ballet, "Naila" (Delibes).

10.0: News; weather. Close down.

5CL

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

MORNING SESSION.

11.15 to 2.0: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EVENING SESSION.

6.0 to 7.20: See Friday. 7.20: Under the auspices of the Workers' Educational Association, Mr. E. G. Biaggini, B.A., will speak. 7.35: Mr. R. C. Bald (Assistant Lecturer in English at the Adelaide University) will speak. 7.45: Dr. Herbert Bascdow, M.P., in an interesting Australian Talk.

NIGHT SESSION.

8.0: Chimes.

8.1: Programme review.

8.10: A presentation of the famous opera "Il Trovatore." Characters: Leonora, Marcelle, Berardillo, Manrico, Dina, Felardi, Count de Luna, Malcolm Jones, Azucena, Gwen Collett; Ferrando, Fred Gustler; Ines, Ann Young; Un Mezzo and Un Zingari, Bert Woolley; and chorus. Explanatory remarks by Bessie Francis.

8.1: Meteorological, including Semaphore tides.

9.2: Overseas grain report.

9.3: Announcements.

9.5: Continuation of opera "Il Trovatore."

10.15: News, weather, sporting, including selections for to-morrow's races at Caulfield and Gawler acceptances.

10.20: Dance music.

11.0: Close down.

6WF

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

For day sessions see Friday.

Special Programme of Irish Ballads, Wit, and Music.

EVENING SESSION.—8.0: A.B.C. Instrumental Trio. 8.10: The Select Four. 8.17: Roland Parsons, bass. 8.24: A.B.C. Instrumental Trio. 8.34: "The Select Four." 8.41: Duet. 8.48: A.B.C. Instrumental Trio. 9.0: Chimes. 9.1: Weather. 9.2: Talk—"The Life of a Great Irish Patriot." 9.17: Thelma Howard, soprano. 9.24: A.B.C. Instrumental Trio. 9.34: Thelma Howard, soprano. 9.41: A.B.C. Instrumental Trio. 9.50: Temple Court Dance Band, conducted by Merv. Lyons. 11.0: Chimes.

Acclaimed America's Finest and Most Beautiful Speakers

DIAMOND BATTERIES



8 WEEKS FRESHER!
45^v Super Capacity
-at all Dealers 20/-

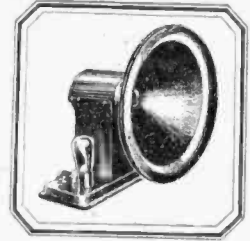
THORDASON Push-Pull AMPLIFIERS
and Parts in Stock.

AGENTS for
DIAMOND Dry
Cells, Batteries

'Phone: B3872—Kembla Building, MARGARET ST., SYDNEY

The New Jensen

AUDITORIUM SPEAKER



GREATER VOLUME AND WITH REPRODUCTION AS TRUE AS THE ORIGINAL

Write for Illustrated Folder

Hear the JENSEN AUDITORIUM-ELECTRO DYNAMIC SPEAKERS demonstrated in our Showroom. As proof of their popularity, already three shipments sold in record time.

ONLY A FEW LEFT FOR IMMEDIATE SALE!
For Quality and Brilliance of Reproduction, Jensen Performance has never been approached, and with the added ability to reproduce these qualities with enormous volume, this New Jensen Speaker proves itself the master stroke of a creative genius.

"The Real Speaker for Power Amplifiers."

SACRIFICE !

A limited number of well-known Burndept Quality Ethovox Speakers. Write for Special Prices.

Representatives and Distributors:

REG. ROSE & CO.

Contractors to the Commonwealth and State Governments.

Wireless Weekly

52 ISSUES DELIVERED POST FREE FOR ONE YEAR

"WIRELESS WEEKLY" gives you the complete broadcasting programmes from every important station in Australia a week in advance in addition to topical news and articles and a technical constructive article by a qualified radio man.

13/-

SUBSCRIPTION FORM

To the Editor, "Wireless Weekly," 51 Castlereagh Street, Sydney.

Please forward "Wireless Weekly" for a period of
for which I enclose for
(Add Exchange to Country Cheques.)

NAME

ADDRESS

.....
Subscription Rates: 12 months (52 issues), 13/- post free; 6 months (26 issues), 6/6 post free.

Local Programmes, Wednesday, October 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 "Daily Guardian."
 7.8: Austradio musical reproduction.
 7.45: Mails and shipping.
 7.48: What's on to-day?
 7.50: Children's birthday calls.
 8.0: Music from the Studio.
 8.15: Close.

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

- 10.30: Announcements.
 10.32: General sporting talk, by Oscar Lind.
 10.45: Horace Weber, at the Grand Organ.
 1.0: Household helps: Cooking, by Miss Ruth Furst.
 11.10: Cables (Copyright), A.P.A. and "Sun"—"Herald" news service.
 11.15: Morning devotion.
 11.30: Austradio musical reproduction.
 11.53: British official wireless press.
 12.0: "Big Ben": Stock Exchange and vital quotations.
 12.5: An address, by Gen. Antill.
 12.20: Midday weather forecast and weather synopsis; special produce market session for the man on the land, supplied by the State Marketing Board.
 12.30: Close.

THE LUNCH HOUR—1 p.m. to 2.30 p.m.

- 1.0: Luncheon-hour Music Quartette.
 2.0: Stock Exchange, second call.
 2.2: A glance at the afternoon "News."
 2.7: Studio music.
 2.27: Announcements.

THE RADIO MATINEE—2.30 to 4.45 p.m.

Note.—Results from Ascot will be transmitted as received.

- 2.30: Austradio musical reproduction.
 3.0: Kathleen Horne, soprano—
 (a) "Butterfly Wings" (Phillips).
 (b) "Chinese Flower" (Bowers).
 (c) "Thoughts Have Wings" (Lehmann).
 3.7: Dismal Desmond, entertainer—"I'll Get in Such a Row When Martha Knows" (Murphy and David).
 3.14: Radio Rhythm.
 3.30: Eileen Brady, piano novelties—
 (a) "Humoreske" (Dvorak).
 (b) "Under the Leaves" (Thomas).
 3.37: Songs of To-day.
 3.47: Kathleen Horne, soprano—
 (a) "Love is Meant to Make Us Glad" (German).
 (b) "Evening" (O'Connor).
 3.54: Dismal Desmond, entertainer—
 (a) "In the Very Early Prehistoric Days" (Bishop).
 (b) "I'm Fearfully, Frightfully Fit" (Weston and Lee).
 4.1: Radio Rhythm.
 4.15: Eileen Brady, novelty piano numbers—
 (a) "Try and Play It" (Ohman).
 (b) "Stepping on the Ivories" (McLaughlin).
 (c) "The Doll Dance" (Brown).
 4.22: A dance item.
 4.28: Stock Exchange, third call.
 4.30: Popular melodies.
 4.45: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Greenlight" stories, told by Uncle Ted and "Sandy."
 6.45: Dinner-hour music.
 7.30: A.B.C. Sporting Service.
 7.37: Special country session; Stock Exchange resume; markets; weather forecast; late news from the "News"; truck bookings.
 7.58: To-night's programme.

NIGHT SESSION.

The weekly "thriller" by the A.B.C. Players, is magnetic in its attraction, and Wednesday night seems all too slow in coming. The instalment of "The Jazz Spider" to-night promises to be "the best ever." Through 2BL service, the Hospital Concert Party held at the Lady Davidson Home at Turramurra,

will provide an excellent and varied programme.

- 8.0: "Big Ben." The State Hour.
 9.0: The country man's weather session—
 (a) New South Wales forecasts.
 (b) Inter-State weather synopsis.
 9.2: The A.B.C. Players, in a further instalment of their intriguing radio serial, "The Jazz Spider," specially written for broadcasting by Mr. James Donnelly.
 9.40: Pianoforte recital, by E. Carlyle Kenney—
 (a) "La Chasse" (Paganini-Liszt).
 (b) "Nocturne" (for left hand only) (Scriabine).
 (c) "Hark, Hark, the Lark" (Schubert-Liszt).
 (d) "Polonaise in A Major, Op. 40, No. 1" (Chopin).
 (e) "Scherzo in E Minor" (Mendelssohn).
 (f) "Bohemian Dance" (Smetana).
 10.5: La Favorita Duo—
 (a) "The Song I Love" (Conrad).
 (b) Violin solo, "Walking With Susie" (Conrad).
 (c) "When My Dreams Come True" (Irving Berlin).
 10.15: Late weather report; announcements.
 10.20: From the ballroom of the Oriental—Stanley Simpson's Syncopaters in dance music.
 11.30: National Anthem. Close down.

2BL

Australian Broadcasting Company, Ltd., Market St., Sydney (Wavelength 338 Metres).

OPENING SESSION—8.15 to 11 a.m.

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

MIDDAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
 12.2: Luncheon hour music.
 1.0: Afternoon news from the "News."
 1.5: Studio music.
 1.15: Women's interest talk—Goodie Reeve. "Aids to Personality."
 1.30: Austradio musical reproduction.
 2.0: J. Knight Barnett at the Wurlitzer.
 2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business efficiency talk—Dr. Harold Norrie. "Outstanding Personalities in Australian History"—William Charles Wentworth.
 2.45: The Magic Carpet Series—The Story-teller "Random Tales."
 3.0: The 2BL Instrumental Trio.
 3.12: Josephine Lee, soprano—
 (a) "When Love is Kind" (arr. A.L.).
 (b) "A Fat L'il Feller Wid His Mammy's Eyes" (Gordon).
 3.19: Sim Solomon, violinist—
 (a) "La Capricieuse" (Elgar).
 (b) "Obertass Mazurka" (Wienlawski).
 3.26: The 2BL Instrumental Trio.
 3.41: Dorothy Benbow, contralto—
 (a) "Out On the Rocks" (Dolby).
 (b) "Forest Echoes" (Phillips).
 3.49: Sim Solomon, violinist—
 (a) "Slavonic Dances, No. 2" (Dvorak-Kreiser).
 (b) "Valse Bluette" (Drigo-Auer).
 3.55: The 2BL Instrumental Trio.
 4.10: Josephine Lee, soprano—
 (a) "The Yellowhammer" (Lehmann).
 (b) "The Winds are Calling" (Ronald).
 4.17: The 2BL Instrumental Trio.
 4.24: Dorothy Benbow, contralto—
 (a) "The Promise of Life" (Cowen).
 (b) "Summah is de Lovin' Time" (Ring).
 (c) "In the Marshes" (Del Riego).
 4.31: Radio rhythm.

- 4.45: The Trade Hour—Demonstration.
 5.45: Weather information. Close down.

THE DINNER HOUR—6.15 to 7.55 p.m.

- 6.15: The dinner hour music.
 6.45: The A.B.C. Younger Set session—Boys' Radio Club, conducted by Mr. Norman Lyons.
 7.5: Graham Kent will give a talk on "Bridge."
 7.20: The Country Man's Market Session—Wool, wheat, stock, farm produce, fruit, vegetables, poultry 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.

The Hospital Concert Party to-night at Turramurra will prove a welcome diversion to the many listeners, whom, it is safe to say, enjoy these hospital parties just as much as the inmates themselves. 2FC's feature is another instalment of the intriguing radio serial, "The Jazz Spider," by the A.B.C. Players.

8.0: From the Lady Davidson Home, Turramurra—
 2BL Hospital Concert Party, directed by Charles Lawrence, and assisted by Frank Ryan, Maggie Foster, R. A. Bartleman, Carlton Fay, and Amy Ostinga.

9.30: From the studio—late weather forecast for the man on the land.

9.32: Harrison White, banjoist—"I Love You Truly" (Jacobs-Bond).
 "Just a Wearyin' for You" (Jacobs-Bond).

"Savoy Rag" (Mandell).
 9.39: The "Wireless Singers"—
 "A Night in June" (Arthur B. Targett).
 "A Song of Parting" (Wheeler).
 "The Bells" (Wheeler).
 9.49: Harrison White, banjoist—
 "That's What Put the Sweet in Home, Sweet Home" (Lowry).
 "Sweetheart of All My Dreams" (Fitch).
 "I've Never Seen a Smile Like Yours" (Irma).

9.56: The Wireless Singers—
 Song, "On a May Morning" (McBurney).
 "The Long Day Closes" (Sullivan).
 "Winds of Sweet Springtime" (Perceval).
 10.6: Austradio musical reproduction.
 10.25: Late news from the "Evening News."
 Late weather forecast.
 10.30: National Anthem. Close.

2GB

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

- 10 a.m.: Music. 10.10: Happiness Talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs. W. J. Stelzer. 11.30: Music. 11.45: close down. 2 p.m.: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.0: Movie Know All. 3.30: Close down. 5.15: Children's Session, by Uncle George. 7.0: Music. 7.45: Feature Story. 8.0: Miss Edna Lister, contralto. 8.7: Symphony Orchestra. 8.15: Mr. J. Lou Walters, basso. 8.22: Cello solos. 8.30: Mr. Jack Win and Mr. Heath Burdock, humor. 8.35: Miss Elsie Peerless, soprano. 8.43: Symphony Orchestra. 8.50: Miss Edna Lister, contralto. 9.0: Weather report. 9.3: Address. 9.15: Cello solos. 9.25: Mr. J. Lou Walters, basso. 9.35: Mr. Jack Win and Mr. Heath Burdock, humor. 9.40: Symphony Orchestra. 9.50: Miss Elsie Peerless, soprano. 10.0: Instrumental music. 10.30: Close down.

2UW

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

MIDDAY SESSION—12.30: Request numbers. 1.0: Chimes; music. 1.15: Talk on homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme.

EVENING SESSION—5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes; request numbers. 8.0: Old-time night. 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: Tune in to the ticking of the clock. 10.3: Popular fox-trots. 10.15: Hawaiian steel guitar selections. 10.30: Women's session—home hints and information, Mrs. Gray. 11.0: A few laughs. 11.5: Pianoforte selections. 11.15: Calls and announcements. 11.20: Musical interlude. 11.30: Labor's Federal radio campaign. 11.40: Music and vocal items. 11.55: Where to go to-night. 12 noon: Closing announcements.
CHILDREN'S SESSION.—6.0: Birthday calls, request numbers, and kiddies' entertainment, Aunt Jemima and Uncle Bert. **EVENING SESSION.**—7.0: Musical interlude. 7.15: 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. 8.35: Al. Rosenberg at the piano. 9.10: Sporting feature, presented by Tooth and Co., Ltd., Kent Brewery, from Sydney Stadium, full description of main 15-round event. 9.50: Music from the studio. 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra Sydney (Wavelength, 298 Metres).
EARLY MORNING SESSION. (See Friday.)
EVENING SESSION.
 7.15: Orchestral and vocal dinner music. 7.58: Programme announcements. 8.0: Clock and chimes. 8.1: Overture, "Faust." 8.11: Orchestral music. 10.15: Close down.

(Continued from page —?)

2UW

Tuesday, October 15

Radio Broadcasting, Ltd., Palling's Building, Ash St., Sydney (Wavelength, 267 Metres).
MIDDAY SESSION.—12.30: Request numbers. 1.0: Chimes; music. 1.15: Talk on homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme.
EVENING SESSION.—5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Chimes; request numbers. 8.0: Soprano and contralto recital. 9.0: Chimes; comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

2KY

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

Tuesday, October 15

MORNING SESSION.—10.0: Tune in to the ticking of the clock. 10.3: Popular fox-trot. 10.15: News items. 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 numbers. 11.40: Labor's Federal radio campaign. 11.55: Where to go to-night. 12 noon: Closing announcements.
CHILDREN'S SESSION.—6.0: Birthday calls, request numbers, and kiddies' entertainment, Aunt Jemima and Uncle Bert. **EVENING SESSION.**—7.0: musical interlude. 7.15: 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, presented by Tooth and Co., Ltd., Kent Brewery, from the ringside of McHugh's Leichhardt Stadium, results of early events and full description of main 15-round event. 9.40: Dance music from the studio. 10.0: Closing announcements.

2UE

Broadcasting Station 2UE, Everett Street, Maroubra Sydney (Wavelength, 298 Metres).

Tuesday, October 15

EARLY MORNING SESSION

(See Friday.)

MIDDAY SESSION.

11.30: Vocal and Orchestral items. 12.30: Close down.

AFTERNOON SESSION.

1.0: Orchestral music. 1.45: Organ recital. 2.0: Music. 2.30: Close down.

EVENING SESSION.

7.15: Orchestral dinner music. 7.58: Programme announcements. 8.0: Overture, "Orpheus in Hades." 8.10: Musical items. 10.15: National Anthem.

RADIO SNAPS

Visit our Used Set Department
and See These Bargains

CHAPIN 5-VALVE CHASSIS

Reduced to £4'10'.

CHAPIN 5 VALVE
SETS
£6/5/-

ACME SPEAKERS
FROM
20/-

B
A
R
G
A
I
N
S

BATTERY STANDS
WITH MAGNAVOX MAGNETIC
SPEAKER.

£3/10/-

WORLD 5 VALVE
SETS

£3/17/6

Other "SNAPS" include:—

"B" ELIMINATOR
TRANSFORMERS ... 17/6

RESIN CORED
SOLDER 1/-

"B" ELIMINATOR 30
HENRY CHOKES ... 7/6

PUSH PULL BATTERY
SWITCHES 6d

GRAMOPHONE REPRODUCERS 2/6

While you are in town don't forget to hear the
NEW ROLA SPEAKER

UNITED DISTRIBUTORS LTD.

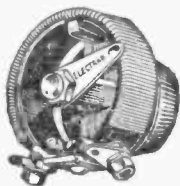
151 CASTLEREAGH STREET, SYDNEY

MAKERS OF UDISCO RADIO SETS

You'll Appreciate these BETTER Radio Components

If you are one who believes that only the best is good enough for your radio, you will follow the example of thousands of engineers and set builders by installing only ELECTRAD components of PROVED quality.

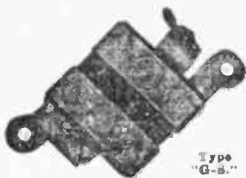
The "ELECTRAD" Rheostat.



THE resistance element is the finest material known. Its value is guaranteed within 5 per cent. High-grade Bakelite insulation. Metallic bearings. Oversized contact arm of phosphor bronze. Milled shaft with square hole in contact arm prevents shaft or knob from turning without moving contact arm.

Single or three-hole mounting. For three-hole mounting, the base is tapped, eliminating use of nuts behind panel. Construction provides greatest radiation without loss of mechanical strength.

"ELECTRAD" Certified Mica Fixed Condensers.



SUBSTANTIALLY made of quality materials. Ingenious riveting and binding fastens parts securely at six different points and exerts even pressure upon the largest possible surface. Of scientific design ensuring perfect electrical contact always.

Type "G.S." with grid leak clips for attaching direct to socket terminal.

Standard, Type "S," with soldering lug and binding strap in one piece.

Obtainable at all Radio Dealers

Amalgamated Wireless A/asia, Ltd.,

47 York Street, Sydney

SPECIFY!

175 Varick St., New York, N.Y. **ELECTRAD**

Interstate Programmes, Wed., Oct. 16

3LO

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

EARLY MORNING SESSION

See Friday.

MORNING SESSION

See Friday.

MIDDAY SESSION

See Friday.

EDUCATIONAL SESSION

2.0: Pure speech, Miss Alice Smith. 2.15: Rambles in the bush, Mr. Chas. Daley. 2.28: Description of Mona Nursery, five furlongs, V.A.T.C. races, at Caulfield, by Eric Welch. 2.35: Musical interlude. 2.40: Our laws are made, Hon. J. H. Keating, LL.B. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE.

3.0: Description of Herbert Power Stakes, 1 mile 3 furlongs, V.A.T.C. races at Caulfield, by Eric Welch. 3.8: Lyric Brass Band—Overture, "Zampa." 3.16: Jean Lewis, contralto—Dream Tryst (Cadmans); Memory Song (Herbert Oliver). 3.21: Piano recital, Lilla Meredith—"Si Oiseau J'Etats"; Henselt; "Berceuse" (Chopin); "Etude," Op. 10, No. 12 (Chopin); "Two Preludes" (Maurice Besley); "Bird Song" (Palmgren). 3.31: Colin Blinks, entertainer—Scene from "The Lady of Lyons"; "The Bush Christening" (Paterson). 3.38: Description of Moonga Handicap, V.A.T.C. races at Caulfield, by Eric Welch. 3.45: Lyric Brass Band—Selection, "The Quaker Girl." 3.50: Fred Sutcliffe, tenor—"When my Ships Come Sailing Home" (Dorel); "Were I a Butterfly" (Lehmann); "I Hear a Thrush at Eve" (Wakefield-Cadman). 4.2: Jean Lewis, contralto—"An Eskimo Love Lull" (Kennedy Fraser); "The Old Stone House" (May Brauer). 4.9: Lyric Brass Band, cornet solo. 4.13: Description of Coongy Handicap, 1 mile 3 furlongs, V.A.T.C. races at Caulfield, by Eric Welch. 4.20: Fred Sutcliffe, tenor—"Vale of Dawn" (Daniel Wood); "Serenade" (Toselli); "We'll Know We'll Understand" (Jas. Henry); "Lovellity" (Thomson). 4.27: Lilla Meredith, novelty piano solos—(1) "Bird Song" (Palmgren); "Two Preludes" (Maurice Besley); (2) "Valse Mirages" (Zez Confrey). 4.32: Colin Blinks—Scene from "The Trial of Mary Dugan" (Fowler); "Roses" (Paterson). 4.40: Lyric Brass Band—"The Fireflies Parade"; Selected. 4.48: Description of Moora Welter, one mile, V.A.T.C. races at Caulfield, by Eric Welch. 4.55: Close down.

During the afternoon results of the Birchall races will be broadcast as they come to hand.

THE CHILDREN'S CORNER

5.45: "Little Miss Kookaburra" (The Guides at Calamity Hill).

EVENING SESSION

6.35: French, Madame Soudard. 6.45: How to attain and retain good health. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Counterman's session. 7.25: Technical talks for mechanics—Tool steel, Prof. J. Neil Greenwood, D.Sc. 7.40: News service. 7.45: The things we drink—Beer, Dr. Loftus Hills, D.Sc.

NIGHT SESSION.

8.0: One hour of music by the masters, arranged by Professor Bernard Heinze. 9.0: A comedy sketch—"Breaking the Ice." He... Mrs. Maurice Dudley. 9.15: Half an hour with Harry Klits and his Vagabond Players. 9.45: Half an hour in the 'foes'le—J. Harcourt Bailey and the Radio Revue Company present a novel sketch, specially written for radio—"On the High Seas." A Wild J. Harcourt Bailey will describe "A Wild Night at Sea" (Dickens) after which we will locate by wireless the good ship "State," and spend half an hour with the boys in the 'foes'le, listening to their sea chanties and sailors' rallies. 10.15: News, weather. 10.25: "The Rex" Dance Band. 11.30: God Save the King.

3AR

Australian Broadcasting Co., 120A Russell St., Melbourne (Wavelength, 194 Metres).

MORNING SESSION.

See Friday.

MIDDAY SESSION.

See Friday.

AFTERNOON SESSION.

2.1: Paul Jacole and his band—"Egyptian Echoes" (Black); "Alabama Stomp" (Creamer). 2.6: Comedian, Gene Austin. 2.10: Piano, Victor Lane. 2.16: Comedian baritone, Johnny Marvin. 2.20: Paul Jacole and his band—"Waters of Minnetonka." 2.28: Quartette, National Cavaliers. 2.30: Violin, Jacques Thibaud. 2.34: Tenor, Enrico Caruso. 2.38: Piano, Victor Lane. 2.44: Comedian, Jack Smith. 2.48: Violin, Jacques Thibaud. 2.52: Paul Jacole and his band—"1927-1928 Medley" (Paul Jacole). Popular Melodies. 2.58: Quartette, National Cavaliers. 3.2: Request numbers. 3.20: Mainly for Women. The Pre-school Child—Does Your Child Obey? Miss M. Lush. 3.35: Musical interlude. 3.40: Some recent art exhibitions—Miss Stephanie Taylor. 3.55: Musical interlude. 4.0: Home Life in Other Countries—In the Great Cities of U.S.A., Dr. Cecile Greil (New York). Traders' demonstration session. 4.15: Musical reproduction. 5.0: Chimes. 5.1: Musical reproduction. 5.30: Weather. 5.45: Close down.

EVENING SESSION.

See Friday.

NIGHT SESSION.

8.1: Why we behave as human beings—how our ideas come, Prof. J. A. Gunn, M.A., B.Sc., Ph.D.

VARIETY.

8.15: Melbourne Banjo Club—conductors, Messrs Andrews and Wynn—"You Were Meant For Me." Saxophone Waltz. 8.21: Violet Jackson, soprano—"Listen!" (Haydn Wood). "I Love You Truly" (Jacobs-Bond). 8.26: Keith Desmond, recital, "The Ukou Trail." 8.25: William J. Wynn, banjo solo—Selected. 8.38: Madge Vivian and Violet Jackson, duet—Selected. 8.42: Melbourne Banjo Club—"The Painted Doll," "Tia Pan Parade." 8.50: Jack Lowe, comedian—"I Don't Work for a Living." "Much Oblived to Me." AN OLD-FASHIONED HALF-HOUR. 9.0: Melbourne Banjo Club—Plantation Melodies, "Wiggin Home." 9.5: Charles Trewavis, baritone—"To Anthea" (Hutton). "The Bandoleer" (Stuart). 9.14: Keith Desmond—Mark Antony's oration over the dead body of Caesar. 9.20: Madge Vivian, contralto—"The Dear Homeland." "The Old Rustle Bridge." 9.27: Andrews Bros. and Wynn, banjo trio—Selected. 9.31: Horace Calvert, tenor—"My Pretty Jane." "Bonnie Mary of Argyll" (Neilson). 9.38: Melbourne Banjo Club, march—"Prince of Smiles." "All By Yourself in the Moonlight." 9.42: Charles Trewavis, baritone—"Hungarian Songs" (Korbay). "Trade Winds" (Keel). 9.45: Jack Lowe, Lancashire comedian—"If You're Doing The 'Old' You Can Stop." "Have One More Before You Go." 10.0: Weather. 10.10: William J. Winn, banjo solo—Selected. 10.16: Horace Calvert, tenor—"The Minstrel" (Easthope Martin). "I Heard You Singing" (Coates). 10.23: Melbourne Banjo Club—"Broadway Melody." "True Blue." 10.30: God Save the King.

4QG

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

For day sessions see Friday.

AFTERNOON SESSION

3.0: Records. 3.30: Mail train running times. 3.35: Records—relay of the triennial address to Queensland by his Grace, Archbishop Sharp. 4.30: News. Close.

EVENING SESSION

7.45: Lecturette, arranged by the Queensland Agricultural High School and College.

NIGHT SESSION

8.0: The Studio Orchestra. 8.10: Harry Grunden and Mark Solomon. 8.25: The Studio Dance Orchestra. 8.35: A Thought for To-night (Will H. Lister)—"The Little Things." 8.40: A. N. Falk (baritone)—"Didst Thou But Know" (Wright). "Little Playmates" (Tuckfield). 8.50: The Studio Dance Orchestra. 9.0: Metropolitan weather forecast. 9.1: Movements of lighthouse steamers. 9.5: A camp-fire entertainment at the 26th Battalion's Bivouac Ground. 10.0: News. 10.15: Dance music. 11.0: Close down.

5CL

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

11.15 to 2.0: See Friday.

AFTERNOON SESSION.

3.0 to 4.30: See Friday.

EVENING SESSION.

6.0 to 7.20: See Friday. 8.20: The 5CL's Bluebird Girls' Club. 7.40: Rev. E. S. Kiek, M.A., B.D. will speak on "The Bloody Assize." 7.55: Boy Scouts' Corner.

NIGHT SESSION.

8.0: Chimes. 8.1: 5CL's Vocal Championships. 8.30: A Fireside Concert, "Mother's 70th Birthday" (arranged by Jack Burgess), in which the following artists will take part—Bessie Francis, P. H. Nicholls, Luigi Patrucco, Angelo Demodena, The Madrigal Singers, Jack Burgess. 9.1: Weather, and Semaphore tides. 9.2: Overseas grain report. 9.3: Announcements. 9.5: Fireside Concert. 10.15: News, weather, sporting, including a resume of Caulfield race results. 10.30: Dance music. 11.0: Close down.

6WF

Australian Broadcasting Company, Ltd., Wellington Street, Perth (Wavelength, 485 Metres).

For day sessions see Friday.

EVENING SESSION.—4.0:

Ambassador's Theatre Symphony Orchestra. 8.8: Les Waldron at the Console of the Grand Organ. 8.15: W. Burnett and Ethel Crisp, popular vocal duets. 8.22: Ethel Crisp, soprano. W. Burnett, baritone. 8.32: Charles Court, cornet solos. 8.39: W. Burnett and Ethel Crisp, popular vocal duets. 8.46: Ethel Crisp, soprano. 8.53: Charles Court, cornet solos. 9.0: Chimes. 9.1: Weather report. 9.2: Announcements. 9.5: Stage presentation broadcast from Ambassador's Theatre. 9.30: Books reviewed, "Wise and Otherwise," by Basil Kirke. 9.45: Graham and Manning, entertainers. 10.0: Town Hall chimes. 10.1: Temple Court Dance Band, conducted by Merv. Lyons. 10.57: Features of to-morrow's programme. 11.0: Chimes.

**SHORT WAVE COILS
NOW AVAILABLE
13/6 PAIR**

**COSSOR PENTODE
VALVES
NOW ARRIVED
FOR COSSOR MELODY MAKER.**

**'AND ITS PRICE IS
ONLY**



10

and it is 100p.c. British

Compare Receivers costing fifteen and even twenty pounds. Does any one of them offer the same wonderful features as the New Cossor Melody Maker? Have they the handsome all-metal cabinet, with its amazing screening effect? Are they fitted with the Cossor Screened Grid Valve, which gives knife edge selectivity? Will they bring you programmes from Melbourne, Adelaide, Brisbane, Hobart, and even New Zealand stations when your local station is working? Are they simple to work—can a novice bring in distant stations? If, on the other hand, you are considering building a Set—does the price include the valves, the cabinet, and all the parts, and even the simple tools? Look where you will, you cannot find a Receiver at any price which offers you such amazing value for your money as the wonderful new Cossor Melody Maker. And remember, this remarkable Cossor Melody Maker will cost you not twenty pounds, or even fifteen, but £10 complete.

Price includes the three Cossor Valves, the handsome cabinet, all the parts, and even the simple tools necessary for its assembly. Get full details.

(BATTERIES AND SPEAKER EXTRA.)

NAMES OF DISTRIBUTORS:

- Harringtons, Ltd., George Street.
- Manufacturers Products, Clarence Street.
- Bloch and Gerber, York Street.
- Fox and MacGillcuddy, York Street.
- W. G. Watson, Ltd., Clarence Street.
- Martin De Launey, Ltd., Clarence Street.
- Humphreys, Ltd., York Street.

**THE WONDERFUL
NEW**

**COSSOR
Melody Maker**

Please send me free of charge one of your Cop. Sets for envelope which will fit the box the New Cossor Melody Maker is built in 30 minutes.
Messrs JONES & JOSEPH LTD.
235 Clarence St., Sydney.

NAME _____
ADDRESS _____

Agents for Australia and New Zealand:—

Lyall Willis and Co., Ltd., Billiter House, London (Eng.).

SYDNEY REPRESENTATIVES:

JONES and JOSEPH, LTD., 235 CLARENCE ST., SYDNEY

Local Programmes, Thursday, October 17

2FC

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

EARLY SESSION—7 to 8.15 a.m.

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

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

- 10.30: Announcements.
10.32: 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), A.P.A. and "Sun"—"Herald" news service.
11.15: Morning Devotion.
11.30: Austradio musical reproduction.
11.53: British official wireless press.
12.0: "Big Ben," Stock Exchange and metal quotations.
12.5: A midday 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: Luncheon hour music quartette.
2.0: Stock Exchange, second call.
2.2: A glance at the afternoon "News."
2.7: To-day's acceptances by the A.B.C. racing observer.
2.17: Popular Education: "Spoken English" by C. N. Baeyertz.
2.30: The 2FC Instrumental Trio.
2.42: John Benjamin, baritone—
(a) "The Dreaming Lake" (Head).
(b) "Ay. Ay. Ay" (Freire).
(c) "Sea Rapture" (Coates).
2.49: Rita Graham, violinist—
(a) "Im Paradies" (Kreisler).
(b) "Legend" (Bohm).
2.56: The 2FC Instrumental Trio.
3.11: Florence Luber, pianist—
(a) "Homeward" (Grieg).
(b) "An Old Love Story" (MacDowell).
(c) "Scene de Ballet" (Coleridge Taylor).
(d) "Valse Mignon" (Schutt).
(e) "Polish Dance, B Flat Minor" (Scharwaka).
3.18: John Benjamin, baritone—
(a) "Do Not Go, My Love" (Hageman).
(b) "Go, Lovely Rose" (Gulter).
3.25: The 2FC Instrumental Trio.
3.40: Florence Luber, pianist—
(a) "Pierette" (Chaminade).
(b) "Valse Impromptu" (Grieg).
(c) "Matthew Shulbrede" (Parry).
(d) "Scherzo," followed by "Little Bird Tunes" (Grieg).
(e) "No. 1 Petite Suite de Concert" (Coleridge Taylor).
3.47: Rita Graham, violinist—
(a) "The Old Refrain" (Kreisler).
(b) "Serenade" (Drda).
3.54: Rose Antill de Warren will speak on "The Beauties of the Queensland Coast."
4.11: The 2FC Instrumental Trio.
4.28: Stock Exchange, third call.
4.30: Close.

EARLY EVENING SESSION—5.45 to 7.55 p.m.

- 5.45: Kiddies' "Goodnight" stories told by Auntie 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 service from the "News." Truck bookings.
7.58: To-night's programme.

NIGHT SESSION.

To-night is the eve of the great event at the Liverpool Camp, for on the morrow the winner of the "King's" will be chaired. So a concert has been arranged, and under the capable direction of W. E. Lewis, the entertainment offers excellent promise. Mr. Lewis has the assistance of Louise Homfrey, lady

baritone, who has recently returned from London. Bert Gilbert, Carlton Fay, Rene Rich, the Two Old Cronies, and Rae Foster.
8.0: "Big Ben," from the Liverpool Camp—a concert party, under the direction of W. E. Lewis. Assisting Artists: Louise Homfrey, Carlton Fay, Bert Gilbert, Rene Rich, Rae Foster, the Two Old Cronies.
9.30: From the Studio: The country man's weather session—

- (a) New South Wales forecasts.
(b) Inter-State weather synopsis.
9.32: From the Hotel Australia: Cec Morrison's Dance Band.
9.42: From the studio: Bernice Patterson, popular vocalist—
(a) "Russian Moon" (Gusman).
(b) "In My Bouquet of Memories" (Akst)
9.49: From the Hotel Australia: Cec Morrison's Dance Band.
9.56: From the Studio: Bernice Patterson, popular vocalist—
(a) "Where is the Song of Songs for Me" (Berlin).
(b) "Some Sweet Day" (Pollack).
10.3: From the Hotel Australia: Cec Morrison's Dance Band.
10.15: From the studio: Late weather report; announcements.
10.20: From the Hotel Australia: Cec Morrison's Dance Band.
11.30: National Anthem. Close down.

2BL

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

OPENING SESSION—8.15 to 11 a.m.

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

MIDDAY SESSION—12 noon to 2.30 p.m.

- 12.0: G.P.O. chimes. Announcements.
12.2: Luncheon-hour music.
1.0: Afternoon news from the "News."
1.5: Studio music.
1.15: Women's Interest Talk—Mrs. Mildred Muscio, "Films for Children."
1.30: Austradio musical reproduction.
2.0: J. Knight Barnett at the Wuriltzer.
2.12: Studio music.

AFTERNOON ENTERTAINMENT—2.30 to 5.45 p.m.

- 2.30: Business efficiency talk—Brunton Gibb, "Random Remarks."
2.45: The Magic Carpet Square—F. H. Raward, "Chicago—America's Industrial Hive."
3.0: Austradio musical reproduction.
3.30: Ruby Lesley, soprano—
(a) "At Dawning" (Cadman).
(b) "I Look Into Your Garden" (Wood).
3.37: The Melody Makers—
(a) "Sweetheart of All My Dreams" (Fitch).
(b) "Weary River" (Clarke).
3.44: Stanley Clarkson, basso—
(a) "The Sergeant's Song" (Holst).
(b) "The Derby Ram" (Hurlstone).
3.51: Dance music.
4.0: Ruby Lesley, soprano—
(a) "If I Might Come to You" (Squire).
(b) "Love's a Merchant" (Carew).
4.7: The Melody Makers—
(a) "Carolina Moon" (Davis).
(b) "That's You, Baby" (Conrad).
4.14: Songs of to-day.
4.21: Stanley Clarkson, basso—
(a) "O Pure and Tender Star of Eve," from "Tannhauser" (Wagner).
(b) "I Will Not Grieve" (Schumann).
4.28: The Melody Makers—
"I'll Always Be in Love with You" (Ruby).
4.35: Radio rhythm.

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 hour music.
6.45: The A.B.C. younger set session—Girls' Radio Club, conducted by Miss Gwen Varley.
7.5: Studio music. The country man's market session—wool, wheat, stock, farm produce, fruit, vegetables, poultry 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.

The University Players are busy concentrating on an unusual offering for to-night's programme. In their capable hands a radio play is something to be eagerly anticipated. Through 2FC service a concert party organised at Liverpool camp on the occasion of the King's meeting promises an attractive feature.

- 8.0: An hour from the Capitol Theatre.
9.0: The University Players will present "Votes for Women," from "Press Cuttings" (G. B. Shaw).
9.30: Late weather forecast for the man on the land.
9.32: Wilfrid Thomas, basso—
Two operatic arias—
(a) "O Isis and Osiris," from "The Magic Flute" (Mozart).
(b) "Mephistoteles" Serenade, from "Faust" (Gounod).
9.40: Josef Kaartinen, saxophonist—
"A Song of India" (Rimsky-Korsakoff).
"Saxarella" (Wiedoeft).
9.46: The 2BL Instrumental Trio.
9.56: James Donnelly will speak on the Byrd Expedition.
10.6: Josef Kaartinen, saxophonist—
"Berceuse" (Jarnfelt).
"Trumbology" (Trumbauer).
10.13: Wilfrid Thomas, basso—
Three cowboy ballads (Liza Lehmann)—
(a) "The Rancher's Daughter."
(b) "Night Herber's Song."
(c) "The Skewball Black."
10.20: The 2BL Instrumental Trio.
10.25: Late news from the "Evening News."
Late weather forecast.
10.30: National Anthem. Close.

2GB

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

- 10 a.m.: Music. 10.10: Happiness Talk, by A. E. Bennett. 10.20: Music. 10.30: Women's session, by Mrs. W. J. Stelzer. 11.30: Music. 11.45: Close down. 1.30: Speeches from Legacy Club. 2.0: Music. 2.5: Women's Radio Service, by Mrs. Dorothy Jordan. 2.50: Music. 3.0: Labor Saving Demonstration, from Buckingham's, Ltd. 4.0: Close down. 5.15: Children's Session, by Uncle George. 7.0: Music. 7.45: Feature Story. 8.0: Miss Mary Neal, contralto. 8.7: Instrumental Quartette. 8.15: Mr. Edward Barry, baritone. 8.22: Symphony Orchestra. 8.30: Mr. Jack Win and Miss Nora Windle, in a humorous sketch. 8.40: Miss Gwen Selva, soprano. 8.50: Violin solos. 9.0: Weather report. 9.3: Address. 9.15: Miss Mary Neal, Contralto. 9.25: Symphony Orchestra. 9.30: Mr. Edward Barry, 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 down.

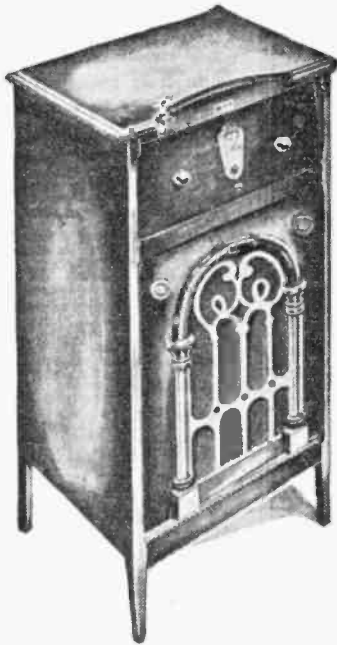
2UW

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

- MIDDAY SESSION.**—12.30: Request numbers. 1.0: Chimes; music. 1.15: Talk on homecraft. 1.40: Music and request numbers. 2.30: Close. 4.30: Musical programme. **EVENING SESSION.**—5.30: Children's hour, conducted by Uncle Jack. 6.30: Close. 7.0: Request numbers. 7.45: Garden talk, by Mr. S. H. Hunt. 8.0: Famous love songs. 9.0: Comments on foreign affairs, by Mr. J. M. Prentice. 9.10: Music and request numbers. 10.30: Close.

PILOT PARTS

MAKE BETTER RADIO SETS!



The Imperia Three

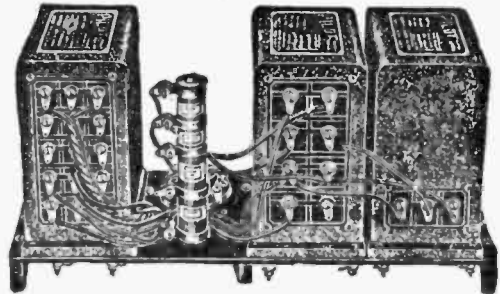
Harringtons Imperia Three is made exclusively of Pilot Radio parts and employs the Pilot A.B.C. Power Pack. This set is recognised as an unexcelled performer, and is Australia's fastest selling set.

Leading manufacturers everywhere are following the lead given by Harringtons and use Pilot parts in preference to all others.

Ensure the best results—use only the products of the world's greatest parts plant—Pilot.

PILOT

Leads in A.C. Set
Development



The PILOT A.B.C. Power Pack

The most highly-developed type of A.C. Supply that can be bought to-day. No matter what the price, quality could not be improved. And yet the PILOT POWER PACK, complete with Rectifying Tube and Sockets, sells at

£10/7/6

Almost any kind of Set can be built up around the Pilot Power Pack. Compactness is another notable feature. Assembled "lengthwise" the complete unit requires a space of only 19½ in. by 3 3-16 in. by 5½ in. Arranged "sidewise" (as illustrated), the base panel need be only 13 in. by 5 in.

PILOT RESISTORS

All types of Special Nichrome Wire Wound for A.C. Set Construction. Ask for particulars.

Sole Australasian Agents—

Harringtons Ltd.

RADIO, PHOTO AND CINE MERCHANTS

(Est. 1889.)

386 GEORGE STREET, SYDNEY

Wholesale Only : 213 Clarence Street,
Sydney.

Branches all States and New Zealand.

To the Radio Trade

Let Eclipse Radio show you their full Range of Sets and Parts—You can get everything in Radio and many exclusive lines for which we are sole agents

**A Visit to
32 Clarence Street
will be to your advantage**

Among the Many
ECLIPSE RADIO
Lines is the Famous
TIMMONS
MAGNETIC SPEAKER

A b s o l u t e l y
t h e
l a t e s t
d e v e l o p m e n t
a l l
t h e
T y e
o f
t h e
D Y N A M I C
w i t h
o u t
t h e
u s e
o f
c u r r e n t .

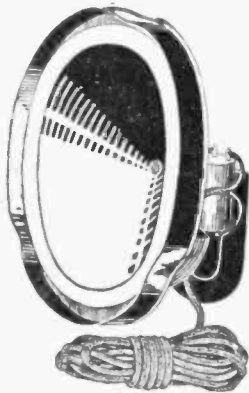
£5/5/0

Chassis

Only

£3/3/-

Less usual discounts.



ALSO,

**Delmonte Speakers
Saxon Batteries
Western Electric and
Para Headphones, Etc.**

Wholesale Only.



**32 Clarence St., Sydney
PHONE, B2002**

Interstate Programmes, Thurs. Oct. 17

3LO

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

EARLY MORNING SESSION

See Friday.

MORNING SESSION

See Friday.

MIDDAY SESSION

See Friday.

EDUCATIONAL SESSION

2.0: Great Australians—Dr. G. E. Morrison, Mr. J. Howlett Ross. 2.15: Musical interlude. 2.20: Music explained and illustrated, Dr. A. E. Floyd. 2.35: Musical interlude. 2.40: Romantic stories of Australia's early days, Mr. C. R. Long, M.A. 2.55: Musical interlude. 3.0: Melbourne Observatory time signal.

THE RADIO MATINEE

3.0: Paul Jeacle and his Band—Melody numbers. 3.6: Charles O'Mara, entertainer—Irish song and story. 3.14: Millie M' Cormack, mezzo-soprano—"The Valley of Laughter" (Sanderson); "The Nightingale" (Kjerulf). 3.20: Les. Rohmer—"The Prince of Variety"; Carolina Moon (Davis); Selected. 3.28: Paul Jeacle and his Band—Latest hits.

A COMEDY SKETCH

3.34: Alf. Lawrence and Nell Crane, the popular entertainers, present a comedy sketch, with music, "Zara." 3.52: Charles O'Mara, Irish entertainer—Irish song and story. 4.0: Paul Jeacle—Saxophone solo, "Pauline." 4.3: Millie M' Cormack, mezzo-soprano—"Here to Love" (Rubens); "Soft-footed Snow" (Sigurd Lie). 4.10: Les. Rohmer, "The Prince of Variety"—"Savoy American Medley" (Somers); "The Rosary" (Nevin); "Coquatta" (Berlin). 4.17: Bruce Wite—Novelty piano solo. 4.20: Paul Jeacle and his Band—Request items. 4.30: Acceptances and barrier positions for V.A.T.C. races at Caulfield (Caulfield Cup Day). 4.35: Close down.

THE CHILDREN'S HOUR

5.46: "Bobby Bluegum," in song and story, assisted by "Clever Clarice"; birthday greetings by "Bobbie Bluegum." "Bobby Bluegum" has a few hints for the older boys and girls about how to make useful presents.

EVENING SESSION

6.35: Musical interlude. 6.40: Let's talk about our animals—Breeding of modern racehorses, Mr. J. Loller. 6.55: Musical interlude. 7.0: Melbourne Observatory time signal. 7.1: Countryman's session. 7.25: For the man on the land—Propagation of citrus fruit trees, Mr. S. A. Cook. 7.40: News service. 7.45: Novels and authors of to-day, Mr. A. E. M'Kieken. 8.0: Melbourne Observatory time signal.

NIGHT SESSION

8.9: Huxham's "Serenader" Quartette Party will entertain with song and story. 10.42: Paul Jeacle and his Band—Dance numbers. 10.52: Adele Inman, soprano—"At Dawning" (Cadman). 10.55: Paul Jeacle and his Band—Dance numbers. 11.5: R. Nicholson, baritone—"The King of Love" (Arnott). "In an Old-fashioned Town" (Squire). 11.8: Paul Jeacle and his Band—Latest and brightest dance music. 11.30: God Save the King.

3AR

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

MORNING SESSION

See Friday.

MIDDAY SESSION

See Friday.

AFTERNOON SESSION

2.0: Orchestral, White House Orchestra. 2.8: Baritone, Tom Kinniburgh. 2.12: Organ, Stanley MacDonald. 2.16: Soprano, Jessie Reeves. 2.20: Orchestral, Quar. 2.24: Quartette, The Shannon Four. 2.28: Piano, Rachmaninoff. 2.34: Baritone, Tom Kinniburgh. 2.36: Banjo duet, Vess Ossman and Fred van Epps. 2.42: Comedian, Rupert Hazell. 2.46: Band, Silver Stars Band. 2.50: Soprano, Jessie Reeves. 2.54: Piano, Adam Carroll. 3.0: Request numbers. 3.20: Cup and Henley chatter, Miss Hattle Knight. 3.35: Musical interlude. 3.40: Food and cookery—Electric cooking, Miss B. Osborne. 3.55: Musical interlude. 4.0: Your health and appearance—Slim ankles and dancing feet, Miss Evelyn N. Ellis. 4.15: Musical reproduction. 4.45: Evensong transmitted from St. Paul's Cathedral. 5.30: Weather. 5.45: Close down.

EVENING SESSION

6.15: Dinner music, supplied by the Studio Light Orchestra. 7.32: Sporting results; acceptances and barrier positions for the V.A.T.C. races at Caulfield on Saturday, October 19 (Caulfield Cup Day). 7.35: Latest musical releases. 8.0: Chimes.

NIGHT SESSION

8.1: A special reproduction of "Carmen" (Bizet). "Carmen" is Bizet's masterpiece, and will ever remain a classic amongst the great operas of the world. It is overflowing with beautiful melodies, and the "Toreador's Song" everyone knows and loves. 10.0: Weather information and "Herald" news. 10.20: Norit String Quartette. 10.30: God Save the King.

4QG

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

NIGHT SESSION

For day sessions see Friday. 8.48: Citizens' Band (supported by Double Male Quartette)—song-land selections, including "If All My Dreams Were Made of Gold," "Baby Rose," "The Lane That Leads to Drowsy Land," "In the Garden of My Heart," "Till the Sands of the Desert Grow Cold." 9.0: Metropolitan weather forecast. 9.1: Movements of Travelling Dental Clinic. 9.2: Double Male Quartette—"Anvil Chorus" from "Il Trovatore." 9.5: J. P. Cornwell (bass)—"The Road That Brought Me to You" (Hamblen). 9.9: Citizens' Band—songs, "Ramona," "Aloha Oe," "Jeannine." 9.20: James Martin (tenor)—"The Sun God" (James). 9.24: Double Male Quartette—"The Bold Gardener's" (Offenbach). 9.28: Citizens' Band—waltz, "Tres Joli" (Waldteufel). 9.35: Frances Lane (contralto)—"Thinking of Me, Thinking of You" (Mason). 9.43: Double Male Quartette—"When He Who Adores Thee" (Rys-Herbert). 9.47: E. Harper (baritone)—"King of the Night" (Houchan). 9.50: The Citizens' Band—songs, "I Wonder How I Look When I'm Asleep," "I Passed by Your Window," "Ice Cream." 10.0: News; weather. Close down.

5CL

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

MORNING SESSION

11.15 to 2.0: See Friday.

AFTERNOON SESSION

3.0 to 4.30: See Friday.

EVENING SESSION

6.0 to 7.20: See Friday. 7.20: Dr. G. H. Wright, M.A. 7.35: Mr. A. G. Fenner will speak on "Virtues of Wool and the Best Clothing Fabric." 7.45: Mr. A. M. Whittenbury: Hints to Poultry Breeders.

NIGHT SESSION

8.0: Chimes. 8.1: Programme review. 8.10: From the Malvern Methodist Church—A Concert (arranged by F. Pilgrim). Malvern Choir—Chorus, "Lift Up Your Heads" (Handel). Harold Tideman, baritone—"Quite" (Sanderson). "A Requiem" (Horne). Phyllis Webb and Lindsay Jessop, vocal duettists—"The Day is Past and Over" (Marks). Mrs. Charles Chinner, violinist—"Adagio" (Ries). Lindsay Jessop, tenor—"The Blind Ploughman" (Clarke). Malvern Choir—Cantata, "The Song of Miriam" (Schubert). Soloist, Phyllis Webb. 9.5: From 5CL Studio: Announcements. 9.6: Meteorological, including Semaphore tides. 9.8: Malvern Methodist Church, Fred Pilgrim, organist—"Prayer and Gradle Song" (Gullmann). Harold Tideman, baritone—"The King of Love" (Arnott). Lindsay Jessop, tenor—"Reaping" (Clarke). Phyllis Webb and Harold Tideman, vocal duettists—"Break, Diviner Light" (Alliston). Mrs. Charles Chinner, violinist—"Legende (Wienlawski). Malvern Choir—"Hear Me When I Call" (Hall). Soloist, Lindsay Jessop. Harold Tideman, baritone—"I Will Go with My Father, Ploughing" (Gullmann). Malvern Choir—"Athem, "The Lord Is My Shepherd" (Schubert). Fred Pilgrim, organist—"Second Sonata" (Mendelssohn). 10.15: From 5CL Studio: News, weather, sporting service. 10.30: Dance music. 11.0: Close down.

6WF

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

FOR DAY SESSIONS SEE FRIDAY.

EVENING SESSION.—H.M.V. Celebrity Artists' Evening. 8.0: Orchestral recital (a Berlin State Orchestra). 8.15: John McCormick, tenor. 8.30: Fritz Kreisler. 8.45: Toti Dal Monte. 9.0: Town Hall chimes. 9.1: Weather report. 9.2: Chalapin (Volka Boatman). 9.17: Orchestral (Wagner). 9.32: Dame Clara Butt. 9.57: Alfred O'Shea. 10.12: Temple Court Dance Band, conducted by Merv Lyons. 11.0: Town Hall chimes. "God Save the King."

RADIAR

All Electric Sets, Screen-grid Sets for Country Daylight Reception. Amplifiers for Private Dances, etc. Repairs and Re-modelling.

THE RADIAR WIRELESS CO.,
111 Castlereagh St., near Market St.
Phones, M2037. Ryde 978 (night).

"EXELTRON"

B ELIMINATORS £3 15 0
A CHARGERS £3 0 0
A.B.C. POWER PACKS £5 10 0
Usually Sold £6 to £12—Sold direct from factory to you; hence these low prices. Fully guaranteed, 12 months. Installed Free. Easy Terms. Mail Order, add Carriage. EXELTRON ELECTRICS, 54 Oxford Street, Sydney.

DETERIORATION LOSSES ARE
ELIMINATED IN
THE



LONG LIFE BATTERY
THE "PERTRIX"

Patent Dry Battery is made according to a new process, and does not employ sal-ammoniac as an electrolyte. It does not deteriorate in stock, it gives 60 per cent. more capacity for a given size of cell. It is silent to the end of the discharge.

4½ Volt, 1/-; 9 Volt, 4/-; 45 Volt, 12/-;
60 Volt, 16/-.
45v. Heavy Duty, 24/-.

RIGHT OUT ON ITS OWN
THE WORLD FAMOUS
BALKITE "B" ELIMINATOR

Announcing the New
BALKITE "B" the noiseless, tubeless, permanent
light socket "B" power supply.



The noiseless, tubeless, permanent light socket "B" power supply.
MODEL B7, for sets with 5 valves (201A type), or less, 22/19/6 (old price).

NOW
£5/19/-

MODEL B12, for sets with 5 valves, and up to 185 volts, 218/16/- (old price).

NOW
£7/19/6

THE
WORLD'S GREATEST
CRYSTAL



Complete

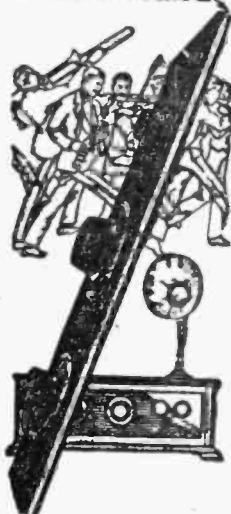
1'3 With Silver
Cat's Whisker

*Concert Tested and
Guaranteed*

DILECTO BAKELITE

The ORIGINAL Genuine
Bakelite Panel Material

LOOK HERE
FOR A RED STRIPE



PANELS
ANY SIZE
CUT TO
ORDER.
EDGES
SMOOTH
AND
SQUARE.

Sole Agent: O. H. O'BRIEN (Sydney)

37-39 Pitt Street, Sydney. 654 Bourke Street, Melbourne. W. E. Peterman, 160 Edward Street, Brisbane.

SETS MADE FOR NOTHING!

It's as reasonable to say that it costs nothing to make a motor car, or meat pie, or build a skyscraper, as it is to say that factory-made sets are cheaper than those made at home. No factory puts sets together for nothing. IF IT ISN'T PAID FOR IN CASH, THE COST OF WORK COMES OUT OF THE PARTS.

With a WALLACE BOOKLET, you can save money, use better quality parts, and gain equal satisfaction by making your set at home in your spare time.

"ELECTRIFIED RADIO"

Ten pages of descriptive matter telling all about electrifying your set, with full-page circuits and back-of-panel diagrams of electrified three and four valve Reinartz sets, with details of costs, necessary parts, etc., and How to Make a "B" Eliminator for 59/6; How to Make a "B" and "C" Eliminator for 95/-; and How to Make an "A," "B" and "C" Power Pack for 105/6. 1/-, Posted 1/3

FOUR VALVE REINARTZ

This booklet tells how this popular set can be made for £5, the total cost of accessories running into only £12/15/-. Includes full instructions, circuit, back-of-panel wiring diagram, and list of necessary parts. 6d, Posted 8d

We guarantee every job made from a Wallace Booklet to give equal results to any other of the same size. All parts can be supplied by us.

THE COMMUNITY THREE

Every Wallace booklet is simple and non-technical enough for anyone to follow without trouble, but the Community Three can be built part by part, and wire by wire. It includes full-size base-board plan and drilling template, really detailed instructions, list of parts, battery connections, and can be constructed without soldering, tools or specialised knowledge. The kit of quality parts costs only £3/16/-, and the complete outfit, with all accessories, £10/8/6. Results are guaranteed. 10d, Posted 1/-

REINARTZ TWO

A younger brother of the larger sets, working a small speaker on local stations, or more distant stations on phones. The booklet gives the usual comprehensive instructions, circuit and wiring diagram, and is an excellent set "to begin with." The kit costs £3. 6d, Posted 8d

ONE VALVE REINARTZ

The baby of the series, making an ideal set for phone work, and being the logical step after the crystal stage. Booklet includes instructions, circuit and wiring details. Kit costs £2. 6d, Posted 8d

"THE WIRELESS SHOP"

Same Day Service
for
Country Clients

Established 8 Years.

Miss F. V. Wallace, 6 Royal Arcade, Sydney

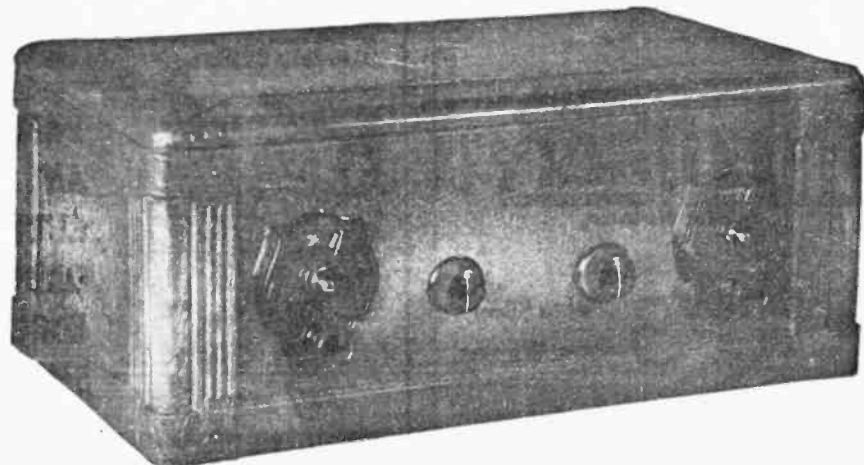
THE OLDEST RADIO FIRM IN TOWN

'Phone: MA5543

Two Doors from George Street, Opp. Q.V. Markets

Money Back
Guarantee

RADIOKES ALL STEEL CABINETS



FOR SET MANUFACTURERS OR HOME CONSTRUCTORS

These beautiful all-steel Cabinets are acknowledged as being the most beautiful housing yet offered for your Radio Set. Finished in the latest ripple finish, in a wide variety of beautiful colored bronzes. A color to suit every decoration scheme. These are masterpieces of design and finish, and are shipped to you in "knock-down" form, and when assembled and mounted with your pet tuning controls, have an appearance equal to the finest metal Cabinet you have yet seen. They are SHOCKPROOF, FIREPROOF, AND INTERFERENCE PROOF, and their permanent utility and beauty will be a source of pride to the interested set owner who wisely houses his apparatus in a Radiokes Cabinet.

Made in any reasonable sizes to order. Stock sizes are:—

A.C. 3-33 Type, size 19½ x 12in. x 8in. deep. PRICE, £2/7/6, complete with channel type steel base.
And D.C. 3-33 Type, size 15½ x 10in. x 8in. deep. PRICE, £2/5/-, complete with channel type base.

From your Dealers, or Direct from
Metropolitan Electric Co., Ltd., "Radiokes House," 126-130 Sussex Street, Sydney.

The Radio Information Service

Under the Direction OF ROSS-A'HULL M.I.R.E

REJUVENATING VALVES

O. D. W. (Watson's Bay).—"I have a goodly number of UX201A valves which have lost their emission to a certain extent. Some of them are of no use whatever, but others can still be used, though reception is poor. I should like to know if there is any method of perking these valves up again, and the method of so doing.

Answer: There are several methods, all of which, however, apply only to valves which are not absolutely dead. If the filament emission is nil, it will be useless trying to rejuvenate the valve. One method is to leave all the B plus connections off the set, then burn the filament for three or four hours, depending on the condition of the valve. Another method, which is widely used, is to use a flashing voltage, then an ageing voltage. This is done in the following manner. Connect the two thick prongs of the valve socket to an 18 volt "B" battery, (or use an 18 volt tapping). Do not leave this connection on for more than one second. The ageing process should follow. Connect the filament prongs (the thick ones) to a supply of 7 volts, and leave for 5 to 8 minutes. This latter method has been tried with success, valves that were previously very poor giving equal results to new valves after rejuvenation. Note that valves which are functioning perfectly should not be given this treatment. If the flashing and ageing voltages are to be applied direct to the battery terminals on the receiver, leaving the valve in its socket, make certain that all good valves are removed. Valves of the 4 volt type such as the UX199 require a flashing voltage of 12, (for one second) and an ageing voltage of 4 for a period of 5-8 minutes. The valves should test up to manufacturer's ratings after reactivation. If this does not happen, try a longer ageing voltage. If the valves still refuse to emit, they should be discarded.

A.S. (Queensland): Quite O.K., but note correction that appeared in following issue with regard to the resistor. No: The Booster Unit amplifies at radio-frequency. A transformer of the type mentioned amplifies at audio-frequency. A three-valve set, consisting of a detector and two audios, would give distorted results using another stage of audio-frequency amplification. Use the R.F. stage. A power valve is not necessary. Write to Mr. J. Martin, 48 St. Mark's Road, Randwick.

K.M. (Ashfield): May be offered for postage only.

W.A.G. (Coolangubla): The transformer could be used, but A.C. would be necessary, and this would mean altering the circuit slightly. Any receiver can be made All-Electric.

R.C.O. (Burwood): A Reinartz. (2) Yes. (3) Yes. (4) Yes. (5) No. (6) Yes.

L.J.H. (Granville): Remove the centre cell entirely, and take it to a battery station. The two good cells can be used as a four-volt supply, by connecting the positive terminal of the first battery to the negative terminal of the second.

G.B. (Maroubra): 24-gauge D.C.C. Three-inch diameter formers. Spacing quarter-inch. Reaction condenser is the .00025 mfd. Could be made more selective by using a midget condenser in series with the aerial.

M.R.B. (Chatswood): See recent article on "How to Build a Standpower 'A' Unit." The transformer will be useless, as one with an output of about 5v given in the article on the S.G. Booster Unit, as a different valve should be used. No, the resistor cannot be dispensed with, otherwise the S.G. valve will not function properly. Connect as mentioned in your letter.

W.R.T. (South Brisbane): Yes: Booster Unit can be used, but note correction in issue following description in connection with the grid bias resistor. Honeycomb coils could be used. Volume excellent. If you are using four-volt valves in the receiver, particular attention should be paid to remarks given in the article on the S.G. Booster Unit, as a different valve should be used. No, the resistor cannot be dispensed with, otherwise the S.G. valve will not function properly. Connect as mentioned in your letter.

R.E.L. (Lambton): "Do the signals that are sent out from broadcasting stations come through the air to the receiving station, then back by the earth to the broadcasting station, or do they come the opposite way by the earth and back by the air? Please explain the route they come, and the reason why. How does an aeroplane get an earth when they are sending from up aloft?"

Answer: A broadcasting station's aerial radiates electro-magnetic waves in all directions, and some

of these waves strike the ionized upper atmosphere at a certain angle, and are refracted at the same angle—back to earth. The waves, passing the aerial, set up a difference in voltage between the aerial and earth, this causing a current to flow in the primary of the receiver. In the case of an aeroplane, the body of the plane is used as an "earth," and in this case differences in voltage then exist between the trailing aerial and the body of the plane. It would be a good idea for you to study "Proving Radio" and "Amateur Profection." Re your receiver, try changing the direction of the aerial.

R.W. (Tamut): "I made a 'Countryman's One,' improved circuit, as published, getting excellent results; in fact, loud-speaker reception of inter-State stations. On adding two stages of audio, reception was poor. Set wouldn't oscillate, and there was a crackling noise."

Answer: You will probably find the primary of the first audio transformer is at fault. Your request published in a General par below.

GENERAL: Mr. Ross Weeden, Capper St., Tamut, N.S.W. wishes to get in touch with some reader who has made a two-valve receiver, using Radioket's S.W. Tuner Kit.

N.W. (Springfield): May be offered for postage only.

A.E.J. (Rankins Springs): Your letter in connection with lost copy has been forwarded to the back-number department. The switch is faulty. Re rheostat: This should not get hot. If this happens it shows there is either a short somewhere in the filament supply, or the resistor is unsuitable, owing to the fact that it will not carry the current satisfactorily. To loosen the tight contact, disconnect batteries, then with a small screwdriver turn the small screw in the contact screw to the left. When the arm may be moved outwards and adjusted for the best position. Make certain that the wire on the former is not loose, as otherwise a new component would be a better proposition.

A.J.R. (Adelaide): Receiver will not have to be rewired in order to use A.B.C. Eliminator. Suggest this rather than the B.C. Eliminator in conjunction with 'A' accumulator. If you use an A.B.C. Eliminator such as Phillips, you should have no trouble. The Emeco job is good, too. It would be necessary to change valves and alter wiring if a power pack is used.

T.A.S. (Bondi): "I intend to build the Renown A.C. Three. Have the instructions for building same appeared in WIRELESS WEEKLY? Can connection be made to this receiver for gramophone pick-up? What is your opinion of the Renown A.C. Three?"

Answer: We have not published an A.C. version of the Renown Three, though a battery operated receiver was published. Concerning pick-up, see article on "Pick-up" in this or an early issue. We have not heard the A.C. Renown, but it should be quite as efficient as the battery operated receiver. You can get diagrams, etc. from Economic Radio Co.

W.R.A.R. (Tasmania): Australia has probably one of the finest selection of valves it is possible to obtain. New American and British ideas are received here within a few months of their being marketed. It is necessary for a 'phone receiver to have a certain amount of broad tuning, otherwise it would be impossible to receive the side bands. The Superheterodyne is an excellent receiver.

F.D.W. (Parramatta): West Australia is two hours behind New South Wales time. New Zealand is an hour and a half ahead. Central Europe is nine hours behind. New York is fifteen, and San Francisco eighteen hours behind. Japan is one hour behind. Russia spreads over an area several times larger than Australia, but an approximation is eight hours behind New South Wales time. Should not be necessary to further filter the receiver mentioned. You are probably using wrong grid bias. The potentiometer is not necessary. The Cosor Melody Maker has been reviewed in WIRELESS WEEKLY. An index to articles published appears periodically. No queries not too brief. Pleasure to answer them when you don't beat about the bush.

A.R. (Waseot): No trace of your former letter. Not enough details in your second. You should have repeated only things can advise is to test "B" battery which may be flat.

"Sadgrosse" (Sans Souci): Please look back queries published last week in connection with non-deplumes. The choke should be placed in series with the plate of the valve, and the plate terminal of the transformer. The connection you show from the coil should be connected to the plate side of the choke, i.e. the valve side of the plate, and not the transformer side.

J.S. (Cessnock): This is interference probably caused by some local listener, whose receiver oscillates too violently. If the "train whistle" is very loud, see if some neighbor's aerial runs parallel to yours, and, if so, alter the direction of your aerial, or advise your neighbor of the interference you think he may be causing.

R.W. (City): "Re the Simplest One Valver." What is the size of the former and insulated wire?"

Answer: Former three inches diameter: 24-gauge D.C.C. wire.

(3) "What is a list of parts?"

Answer: A list of parts is a list of the names of the radio components to be used in a receiver. Don't know whether that's what you wanted, but it is what you asked for.

G.R.W. (Granville): Afraid you will have to get another set. Yours is out of date, and as parts were specially made for this receiver they cannot be replaced satisfactorily with ordinary components. You might make further efforts to have the set put into recent operating condition.

R.L. (Smithfield): "I constructed the Countryman's One Valver according to the improved circuit, and I must say I am pleased with the set. Using ten volts on the plate I received the following stations with excellent volume.—2FC, 2BL, 2GB, 2UE, 2KY, 2UW, VK2AD, 3AR, 3LO, 3UZ, 4QG, 5CL, 72L, and 2YA, and also many other stations which I have not had time to identify. Considering the volume with which I received 2YA, I am quite sure the little set can receive Jap. stations. However, I would like to know how I can eliminate hand capacity of the condensers. I should like to obtain copies of WIRELESS WEEKLY from the beginning of No. 1 'Proving Radio' to No. 19, for which I am willing to exchange thirty-three copies of the 'Listener-in.'"

Answer: Try reversing connections to condenser or condensers. In case any reader can supply you with the 'Proving Radio' numbers required, your address follows.—Mr. R. Lehmann, Water Street, Smithfield. Pleased to hear of your good results on the Countryman's One.

W.M. (Victoria).—Re mast, no, quite O.K. Yes, transformers O.K. Output transformer not necessary unless you are using high power.

(2) "Please give me plate-current in milliamperes and correct grid bias for the following valves, using 120 volts plate supply: B605, C603, P24F, PM25A, P625A."

Answer: B605, plate current 9 m.ils., grid bias, at 120 volts, 15 (volts). C603, 18 m.ils., 24 volts PM6, at 100 volts plate, 20 m.ils., 2 volts grid bias. PM25A, at 125 volts plate, 20 m.ils., 10 volts grid. P625A unsuitable for good operation at this voltage, though excellent at 200 volts.

(3) No, this is against Fire Underwriters' rules. Aerial must be taken to arrester, and thence to set. Same with earth lead.

G.M. (Grafton): The Screen Grid Marco Five.

W.O. (Wagga): We have a few copies of the 1929 Screen Grid Neutrodyne left.

GENERAL: Mr. J. Morgan, secretary, Echuca and District Athletic Association, Post Office Box 80, Echuca, requires copies of WIRELESS WEEKLY dated January 4, 1929, 18, 25, February 1, 8, and March 22. Can any reader supply, please?

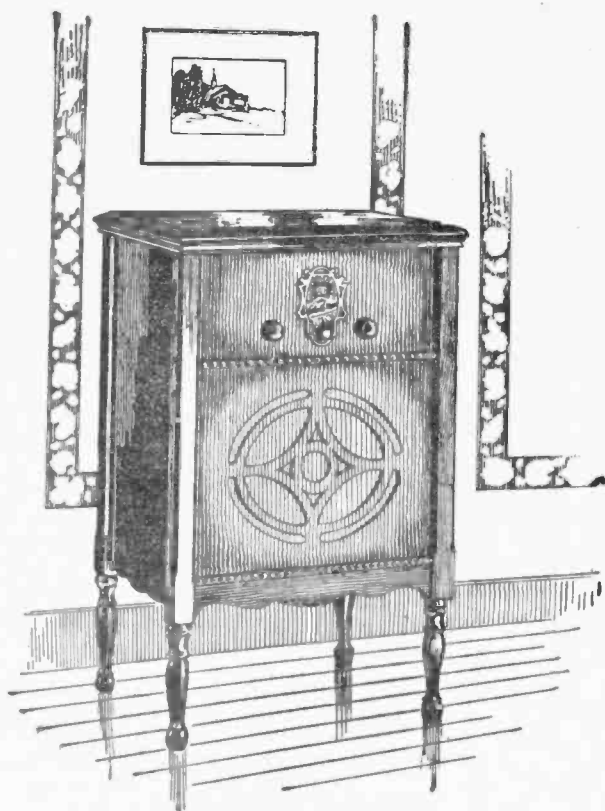
QUERY COUPON

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 design. Under no circumstances will we make 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.

Use Radio Information Service. P.O. Box 3869/17, Sydney.

Please enclose the accompanying queries in your earliest convenience. I enclose this coupon in bona-fide indicator.

WIRELESS WEEKLY. The Information Service Department, 14



Colville-Moore A.C. 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.

DEMONSTRATIONS given in your own home Day or Night, without obligation.

RING B2261 and make arrangements to hear this wonderful Receiver:

TWELVE MONTHS' FREE SERVICE—WRITTEN WARRANTY.

TABLE MODEL, £29. Dep. £6, Monthly £2/2/9

CONSOLE, £34. Dep. £7, Monthly £2/10/1

Colville-Moore Wireless Supplies Limited,

10 ROWE STREET (Next Hotel Australia), SYDNEY

PHONE, B2261

PHONE B2261

C.K. (Hurstville): Build it into a Reinartz. The coil in the lid is the loop aerial.

H.B.P. (Deepwater): Kit obtainable from Colville-Moore. Yes, can be adapted to take valves mentioned.

N.V.D. (North Sydney): It is difficult to make any prediction concerning the probable life of the condenser. Providing it is of a reliable type, and assuming that it has never been connected the wrong way round in the circuit, it should be good for a year or two at least. Similar condensers, though of much higher capacities, are used for telephone work in some telephone systems. We understand that it is general practice to overhaul them and renew the electrolyte every couple of years. On the other hand we know of instances where small types of electrolytic condensers (which at one time were used in amateur transmitter plate supply systems) are still working after five or six years of intermittent service.

E.P. (Granville): Leave out the wavetrap and add two screen grid stages, as per S.G. Marco recently published. The eliminator should be kept about two feet away from the set.

W.K. (Victoria): Your request published in a General part below. Try a .002 fixed condenser across transformer secondary.

General: Can any reader please supply Mr. W. Kempster, No. 6 Vallant Street, Abbotsford, N9, Victoria, with copies of WIRELESS WEEKLY containing "Proving Radio" series Nos. 20, 22, 23, 24? He is willing to pay for the copies.

S.M. (Lithgow): Yes, could be used. Instructions on connecting up the unit appeared in the article.

H.C.S. (Newcastle): If you already possess the valves use them, but, if not, it would be advisable to procure those mentioned. The receiver would have to be greatly modified both mechanically and electrically to suit valves mentioned. Messrs. Radlocks, Ltd., can supply the Intermediate Transformers.

R.M.F. (Bourke): The transformers are excellent. By all means replace with this type. You submitted a poor list of speakers, but the cheapest of the lot is a good instrument.

E.S.B. (Kensington): Can be offered for postage only.

W.L. (Enfield): "I am intending building a three-valve set. Would you let me have a design and parts required for the set?"

Answer: We have printed designs of three-valve receivers many times during the past year. Look up some of the back numbers, and you will find many variations of a three-valve receiver, A.C. models, screen grid models, battery-operated models, etc., ad lib.

G.A.P. (no address): "Please tell me how many turns are required on a coil for a four-valve set. I already have three condensers, a grid leak condenser, and a R.F. choke."

Answer: Depends on the circuit you intend to employ. Pick one out of the many that have been published during the past year. Details of coils, etc., will be found here. The items you have won't go far towards a four-valve set.

C.M. (Haberfeld): Place between B positive and B negative of the eliminator. Use one across the detector plate supply, and the other across the total output.

C.K. (Narrabeen): "Hearing that you published a list of the various broadcasting stations in the world, and also that their wavelengths, etc., would it be possible to reprint same?"

Answer: Afraid this cannot be done. The list referred to was given away in a special free supplement issued with WIRELESS WEEKLY dated May 31, 1929. We still have a few copies left. Send postage and cost in stamps if you would like us to forward you one.

B.G. (Summer Hill): Try a .001 fixed condenser across the primary of the first transformer, and increase detector plate voltage. If regeneration is still absent, try reversing tickler connections.

Aerial (Forbes): About 40 feet high, pointing north and south, 60 feet long. Use 7/22 enamelled wire.

R.E.A. (Victoria): Probably the fault of the transformers. No need to change both of them. Change one only. If set whistles, reverse primary connections to one of the transformers. B405 valve.

The method of obtaining C bias from your eliminator is as follows: Insert a 2000 ohm variable resistor in series with the B negative lead before the voltage divider. One side of the resistor will then connect to B negative, and the other side to the filter circuit. Take another from the latter side to C negative. Note that the resistor will have to carry plate current of valves, and a suitable resistor must, therefore, be used. Your letter arrived too late for publication of a diagram, but if you would like one published, please advise. Recommend choke-filter output. Re effect when plugging in extra valve. This is quite in order. Make your letter shorter next time.

D.W.H. (Ride): You will need A.C. valves and a filament transformer. Connect the cathodes of the A.C. valves to grid returns in place of filament connection. Use flex for filament leads. Suggest you study recent descriptions of A.C. receivers in order to get an idea of wiring and methods of obtaining bias.

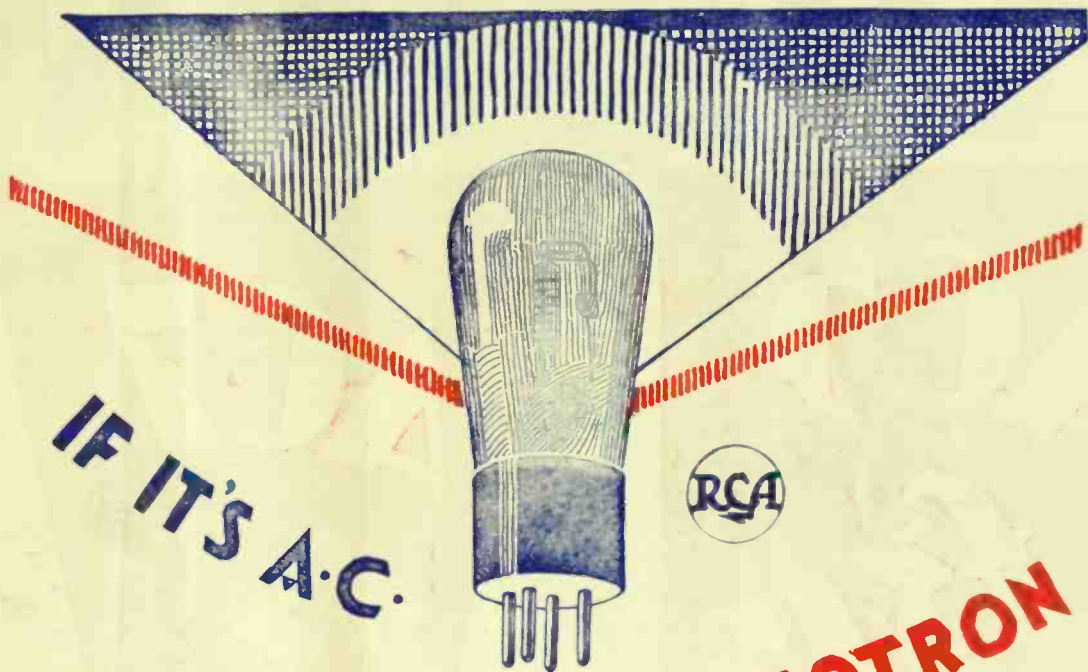
S.N.M. (Gunnedah): Build R.F. Booster Unit, but note correction that appeared in the following issue in connection with the resistor.

Mulholland (Waverley): The filament control Bradleystat is worked on the carbon disc compression principle. Its resistance is from 0-100 ohms.

P.W.S. (Bondi Beach): See reply to E.G. (Duobo). Your new address was noted in our books, 18/9/29.

YU (Manly): Transformer O.K. Yes, the Philips transformer can be used. 3½-1, both stages.

Use R.F. choke in series with plate lead of first transformer.



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
Australian (W.A.) Ltd
 47 YORK STREET, SYDNEY.

J. B. CHANDLER & CO.,
 46 ADELAIDE ST.,
 BRISBANE.

AMPLION



ALL the features you look for when buying a Speaker will be found in these two dignified inexpensive Amplion Cabinet Cones. Both are Loud Speakers of exceptionally good performance, of very pleasing appearance and at a price within the reach of everyone. Amplion has never offered greater value.

INSIST ON AN
AMPLION WITH
YOUR RECEIVER

ADVT. OF AMPLION A/SIA LTD., 53-55 YORK STREET, SYDNEY.

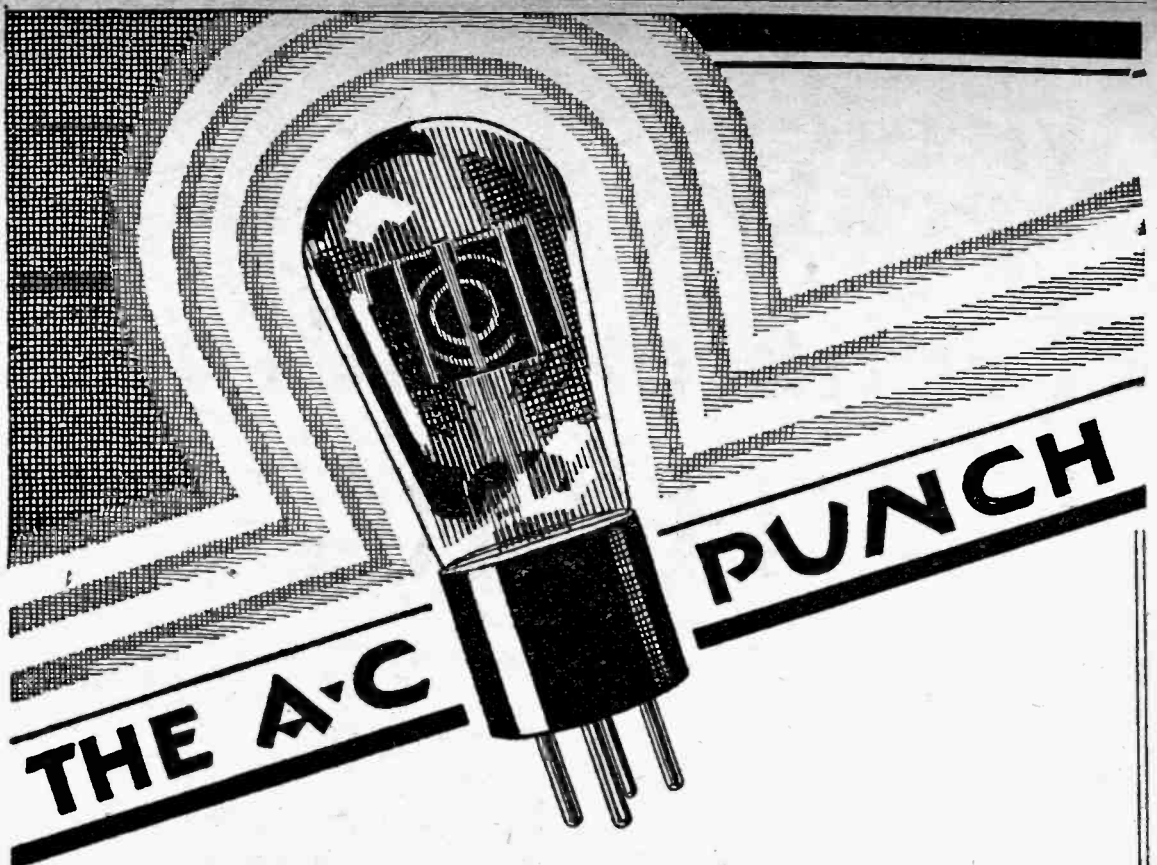
Published by Godfrey Blunden, of "Reigate House," Hughes St., Darlinghurst, for the proprietors, Messrs Wireless Newspapers Ltd., 60-66 Elizabeth St. Sydney, and printed by Sun Newspapers Ltd., Forbes Street, Sydney, and Mortons Ltd., Chalmers Street, Sydney. Wholesale Distributors: Messrs. Gordon and Gotch (Australasia), Ltd., All States.

Trouble-Finding CHART



IN the preparation of the list of possible radio receiver faults and remedies which constitutes this supplementary booklet an attempt was made to treat as many of the common troubles as possible. It is fully realised, however, that a considerable number of radio set disorders are still unmentioned. Many obvious ones were omitted simply because it was considered that their discovery and correction would require an intimate knowledge of the subject not possessed by the average radio enthusiast or experimenter. Even as it is, the list of possible troubles is surely formidable. We can quite see the possibility that the non-technical radio listener, glancing through the pages to follow, will gain the impression that the radio set is likely to be a most troublesome affair. This, of course, is not necessarily the case, since the majority of good receivers can be depended upon to serve with complete satisfaction year after year just so long as the valves and batteries are kept in good condition. In this connection we might mention that the listener with little or no technical knowledge is well advised to depend, for the rectification of any possible troubles, upon some radio service man who has made a specialised study of the matter, since any tinkering with the wiring, particularly if the set is professionally built, is likely to do more harm than good.

To use chart, diagnose your set trouble under one of the following headings, and turn to the page indicated for its probable cause and remedy. No signals (page 3), weak signals (page 5), scraping, scratching, or knocking sounds (page 7), whistles, squeaks, or hisses (page 11), humming or buzzing sounds (page 13), wavering or fading signals (page 15).



The extra punch that means louder and clearer reception from distant stations—that makes all the difference in loud speaker reproduction, is supplied by A.C. Radiotrons, the valves specified by leading manufacturers for All-Electric Receivers.



Look for
this Seal.

The precision assembly of Radiotrons in the world's largest radio valve laboratory enables them to handle volume without distortion. Their sturdy construction gives them long life.

**RADIOTRON A.C. VALVES
ARE OBTAINABLE AT ALL
RADIO DEALERS**

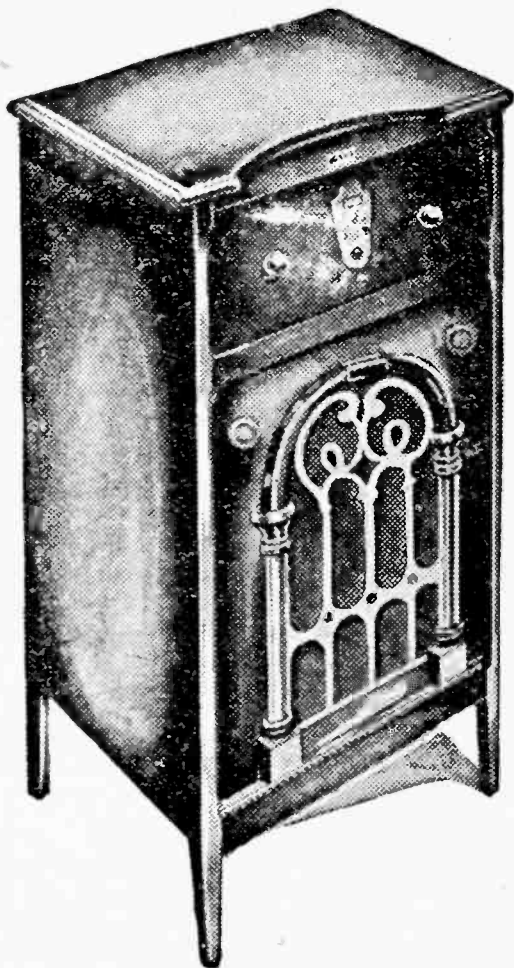
Amalgamated  **Wireless**
Australasia) Ltd.
47 York St., Sydney.

J. B. Chandler & Co.,
45 Adelaide Street,
BRISBANE.

WHEN THERE ARE NO SIGNALS

Possible Trouble.	Cause and Remedy
Discharged "A" Battery.	Storage batteries or dry cells used for filament supply have a habit of becoming exhausted when particularly required. Filaments lighting dimly or failing to light are symptoms. Recharging of accumulator or replacement of dry cells necessary. "A" battery should be tested with voltmeter since failure of filaments to light may be due to open filament circuit.
Disconnected Battery Leads.	Wires connecting set to "A" or "B" supply may be making imperfect contact at terminals. Wires sometimes break inside insulating covering or ends become corroded. Careful search for doubtful spots in wiring necessary.
Faulty Switch.	Blades of switch sometimes fail to close. Short wire connected across switch leads will permit check.
Aerial or earth.	Aerial or earth lead may be disconnected. Often caused by terminals working loose. Unclean connections to earth or lead in. Clean with sandpaper. Solder connections.
Lightning arrester.	Lightning arrester may be short-circuited, thus earthing the aerial. Remove arrester and test receiver without it. If signals O.K. replace with new arrester. Do not attempt to repair it.
Faulty tuning coils.	Open circuit in the windings. This usually occurs where taps are taken from the coils; also where connections are made to the ends of the coil windings. Solder connections. Coils may also be shorting. Usually caused by soldering flux getting on to the windings; also due to broken or defective insulation—re-wind coils.
Valve socket contacts imperfect.	Valve prongs not making contact with the arms of the socket. Clean bottom of valve prongs, also contact springs, and bend up the latter slightly with a button-hook in order that good contact is made.
Grid condenser.	Sometimes the heat of the soldering iron will cause an open circuit in the condenser by melting off the internal connections. Replace with new condenser. Also the heat of soldering may remove the insulation wax, causing a short-circuit between the plates. Same remedy.
Exhausted "B" battery.	Check the "B" batteries with a voltmeter, and if they have dropped to two-thirds of their rated voltage they should be discarded. Never connect half-dead "B" batteries to others, new or old.
Grid coil disconnected.	Test for open circuit between grid-condenser and filament leads.
Fixed condenser across 'phones or transformers.	This condenser may be shorted. If amplifiers are used it may be the condenser across the primary of the first transformer. Replace condenser.
Fault in speaker or 'phones.	May be burned out or short-circuited. Take to manufacturer to be re-wound or repaired. Adjusting screw may require turning in order to get correct distance between diaphragm and magnets
'Phone plug.	Defective or short-circuited. Replace.

You get trouble-free RADIO—when you get PILOT parts!



The IMPERIA 3

This famous set, acknowledged to be Australia's fastest seller, is constructed exclusively of Pilot Parts. Model illustrated—all electric is priced at £32/10/- complete. Easy Terms

Pilot parts are the products of the World's greatest Radio parts plant. A set that is built with Pilot is a set of unusual efficiency and power.

Every part, no matter how insignificant, is tested before it leaves the factory. This is your guarantee of value, for they cost no more than others.

Follow the lead of most big radio set manufacturers—use Pilot parts EXCLUSIVELY in the receivers you build.

Harringtons LTD

Est. 40 Years.

PHONE, MAG001.
BRANCHES IN ALL STATES AND
NEW ZEALAND.

RADIO, PHOTO, AND CINE
MERCHANTS,

386 George Street, Sydney

WHEN SIGNALS ARE WEAK

Possible Trouble.**Cause and Remedy.**

Valves nearing end of life.

Modern valves rarely burn out. After prolonged service or after operation at excessive filament voltages they lose their emission. Simplest check is to replace each valve in turn by a spare valve of known quality, during operation of the receiver.

Batteries almost discharged.

Both the "A" and "B" batteries must be renewed at intervals. Low voltages cause weak signals. Frequent checking with a voltmeter is desirable to avoid this trouble and to ensure that the accumulator will never be completely discharged between the periods of charging. Such discharging is harmful to battery.

Telephone or speaker terminals reversed.

The majority of 'phones and speakers using magnets acting directly upon the diaphragm have one of the cords marked with a red thread in the insulation covering. This marked cord should be connected to the "B" battery plus terminals, whilst the other will go to the plate of the valve. A reversed connection will cause the "B" current to demagnetise the 'phone magnets.

Primary circuit not tuned.

When tuning is broad it is due usually to the coupling between the primary and secondary windings of the tuning coils being too close together, or it may be due to too many turns on the primary. Space primary and secondary coils farther apart, and remove some of the wire from the primary winding.

Reaction coil reversed.

If the receiver uses regeneration the reaction of tickler coil may be reversed. In some makes of three-coil tuners it is hard to tell which terminal should be connected to the plate of the valve. Reverse tickler leads for best results.

Condensers.

Condensers may be wrongly connected. Moving plates should be connected to the earth part of the circuit. Fibre ends on condensers are subject to leakage, and are hard to locate. The pigtail connection may have become broken. Condensers may be poorly insulated. Use only condensers with good insulation. Try a .001 fixed condenser across the primary of the first transformer—i.e., between the plate of the detector valve and "B" plus, in order to assist oscillation.

Valve socket.

Valve prongs not making good contact in socket. Clean valve prongs and socket contact springs, and bend up the latter slightly to ensure good contact.

Grid-condenser.

Short-circuited. This is often caused when soldering leads to the mica grid condenser, the flux flowing between the metal lugs and over the edges. Discard condenser and use small bolts or contact studs for connecting up the new one, inserting the bolt through the small holes in the condenser, and connecting the leads under the nuts of the bolts.

Grid-leak.

Resistance too low. If this is the case it allows the charges on the grid to leak off too fast, and full volume of signal is not obtained. Try different values of resistance, and test for best results.

BLUE SPOT SPEAKERS, UNITS, PICK-UPS

Give that natural clarity of voice—Exquisitely delicate rendering of music. Hence Blue Spot reproduces Speech and Music with a Fidelity unknown in any other Types.

The importance of RELIABILITY in Fixed Condensers is obvious. Hence use the "CHANEX" Fixed Condensers, Double Tested to 500, 700, 1000, 2000, 4000, up to 10,000 volts.

For reception free from noises your resistances should be equal to our

STANDARD "CHANEX" VARIABLE RESISTANCES

To be on the safe side ask for "CHANEX."

Manufacturers' Representatives :—

H. HECHT & CO.

181 Clarence Street, Sydney

Also at Melbourne

Excessive filament voltage.	Keep filament voltage as low as possible. Burning valves too brightly causes loss of emission.
Grid-condenser open-circuited.	Sometimes in soldering to the grid condenser the heat melts the internal connections. A new grid condenser must be used.
Batteries in general.	Discard dry batteries that show a reading less than two-thirds of normal voltage. Test "A" battery (if wet) with a hydrometer. If low have accumulator recharged. "C" battery sometimes the cause of poor and distorted reproduction. Replace.
'Phone plug.	Defective or shorted. Replace.
'Phone terminals reversed.	Cord with red thread woven through it should go to the "B" plus terminal.

**IF SCRAPING, SCRATCHING, OR KNOCKING
SOUNDS INTERFERE WITH RECEPTION.**

Possible Trouble.	Cause and Remedy.
Aerial.	Aerial swaying against conducting objects partially or wholly grounded. Keep aerial away from trees and corners of the house.
Tuning coils.	Coils loose or vibrating. With honeycomb coils open out the legs with a small screwdriver or pocket knife. Flimsy construction of apparatus allows relationship of coils to change with the least vibration. Use thicker baseboard and panel.
Poor contacts.	Poor connections at switch points or switch levers. Use a switch with panel bushing, having snug fitting shaft with spring tension. Clean switch occasionally.
Variable condensers.	Dust gets between the plates of the variable condensers. Remove with a piece of silk. Plates sometimes touch, causing loud clicks and sometimes sparks. If bending or buckling is bad replace condensers with new ones.
Faulty grid-leak.	Resistance may be too high. Try a grid leak with a lower resistance. Usually about two megohms will be correct for a broadcast receiver, and five megohms for a short-wave receiver. Sometimes the contact in the leak becomes intermittent. Check with new one.
Rheostat.	A loose connection in the rheostat gives an unsteady current. Can be detected by change of brilliancy of valve filament or by change in signals when rheostat knob is jarred.
Plate or grid leads.	Plate lead touching grid leak, or the two running close to each other. This results in a feed-back either by actual contact or by capacity effect. Separate the leads. Run at right angles to each other if possible.
Plate lead touching aerial lead.	In a loose-coupled receiver this results in a capacity feed-back, and where the filament is earthed it short-circuits the "B" battery. Separate the leads. Insulate well.



LET THESE NEW STATIC

—that is if you are not already satisfied—no matter how many stations you receive with Philips Valves. A.C. or D.C. socket of your radio—a type for each purpose. To-day, to-morrow, it soon—fit your set with Philips radio than you have ever had.

THE 4-VOLT SERIES

DC

Type.	Purpose.	Fila-ment. Current	Grid Bias at				Pr
			80.	100.	120.	150.	
A409	Gen. Pur.....	0.06	4.5	6.0	7.5	9.0	13
A415	Det., 1st. Audio..	0.08	1.5	3.0	3.0	4.5	11
A425	Res. Cap., R.F....	0.06	1.5	*2.0	*2.5	3.0	11
A435	R.F.....	0.06	—	—	—	—	13
A442	R.F. Screen Grid.	0.06	—	—	—	—	30

*To be obtained by means of potentiometer.

THE 6-VOLT SERIES

Type.	Purpose.	Fila-ment. Current	Grid Bias at				Pr
			80.	100.	120.	150.	
A699	Gen. Pur.....	.06	4.5	6.0	7.5	9.0	M
A615	Det. 1st. Audio..	.08	1.5	3.0	3.0	4.5	11
A630	Res. Cap. R.F....	.06	—	—	1.5	1.5	11
A635	R.F.....	.06	—	—	—	—	11

POV

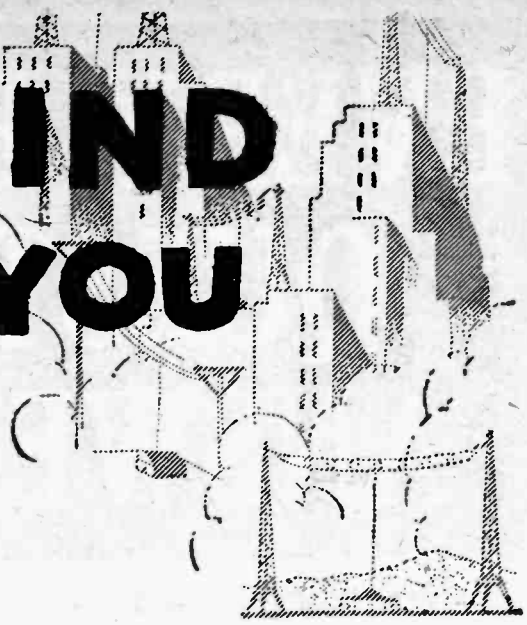
Type.	Purpose.	Fila-ment. Current
B403	Power.....	
B405	Power.....	
B406	Audio.....	
B409	High Gain Power..	
B443	Penthode.....	
B605	Audio.....	
C603	Super Power.....	
C443	Penthode.....	
TB01/10	Power Amplifier...	
F704	Power Amplifier...	



VALVES,

There is only one Valve that ca

VALVES FIND IS FOR YOU



ing Philips Miniwatts. No
ur now you will hear more
. there is a type for every
n is designed especially for
or the next day—but make
Valves and enjoy BETTER
fore.

THE 4-VOLT SERIES

Type	Purpose.	Amp. Factor.	M/cond. (Slope)	Price.
E409	Audio.....	9	3	35/-
E415	Gen. Pur.	15	2	27/6
E424	Spec. Det. 1st Audio.	24	3	35/-
E430	Res. Cap., R.F.....	30	2	30/-
E435	R.F.....	35	.8	30/-
E442	Screen Grid.....	—	1.2	40/-



AMERICAN REPLACEMENT SERIES

Type	Purpose.	Amp. Factor.	M/cond. (Slope).	Price.
F109	R.F., 1st Audio.....	9.0	1.2	15/-
F209	Det.....	9.0	1.0	27/6
C603	Super Power.....	3.0	2.0	15/-
15G0	Full Wave Rectifier.	—	—	30/-

RIES

Grid Bias at			Price.
100.	120.	150.	
15.0	24.0	30.0	15/-
12.0	15.0	18.0	15/-
9.0	12.0	15.0	13/6
6.0	7.5	9.0	15/-
9.0	12.0	15.0	32/6
9.0	15.0	18.0	13/6
15.0	24.0	30.0	15/-
20 at 300 volts.			40/-
30 at 400 Volts.			45/-
80 at 450 volts.			70/-



AND D.C.

EVERY RADIO QUESTION ANSWERED!

Latest Discoveries and Improvements Included

- 1672 Alphabetical headings — from "A-battery" to "Zero Beat." 240 Combinations for Receiver Layouts
- 871 Pages 6 by 9 inches each. 985 Illustrations, Diagrams, Layouts, and Graphs.

WHEN you cannot hear an inter-State station, when several locals come in at once, when the set makes weird noises—what shall you do? Turn to Drake's Radio Cyclopeda.

Ownership of radio takes on new interest when you have Drake's Radio Cyclopeda. If you like to experiment, Drake's Radio Cyclopeda will open new fields. If you are interested in radio problems, you will find the solutions. If you build or rebuild radio sets, you can make them still better. If you sell receivers, you will gain sales ammunition.

All subjects from "A-battery" to "Zero Beat" are alphabetically arranged, with hundreds of cross references. Everything is in plain English, with each word and term applying to radio reception and radio-electricity clearly explained. Drake's Radio Cyclopeda is not a technical book, yet it contains a world of technical information translated into usable form. The bulk of the material treats of the operation, construction, testing, and design of receivers and allied units, with enough of the fundamentals to make clear the reasons for all operations. Every illustration is especially drawn to show practical details, otherwise impossible to emphasise properly.

There is more text matter than in any other book dealing with radio, and there are more illustrations than in any other book on radio. Drake's Radio Cyclopeda brings more satisfaction to radio men than any other investment of like amount or of many times the amount.

Angus and Robertson, Ltd.,
89 Castlereagh Street,
SYDNEY.

Please send me, for free examination and without obligation, a copy of Drake's Radio Cyclopeda. If I decide to keep it I will send you 30/- (post, 1/- extra) within seven days of receipt—otherwise I will return the book to you immediately, when my obligation ends. NAME

Wireless. 11/10/29. ADDRESS

FREE EXAMINATION

'Phone or speaker cords defective.	The tinsel cords used often become broken by continual bending, and eventually make a very poor contact that is noticeable every time the 'phone cord is moved. Use a new cord.
Valve elements vibrating.	When rigidly attached to the baseboard slight vibrations will cause the valve elements to vibrate. This is particularly noticeable with the small valves using dry batteries on the filament. The cure is to use shock-absorber socket or mount the sockets on sponge rubber. Rubber feet on cabinet will usually also aid.
Valve sockets.	Moulded sockets sometimes have poor insulating properties. Metal sockets with a fibre base are just as bad. Use bakelite or porcelain sockets.
Rheostat.	Loose connection on the rheostat usually gives an unsteady current. Can be detected by change in brilliancy of valve filaments, or by change in signals when rheostat knob is jarred.
Transformer trouble.	Audio frequency transformers burned out or partially short-circuited should be taken out and replaced with new. If moisture gets to the transformer windings a short circuit would occur. A heated electric light bulb hung inside the cabinet for several hours will usually dry out the moisture.
Phone plug.	Defective or short-circuited. Disconnect plug, and test to see if current will flow from one terminal to the other when connected to the 'phones. Replace if faulty.

**SHOULD WHISTLES, SQUEALS, OR HISSES
MAR RECEPTION.**

Possible Trouble.	Cause and Remedy.
Static.	Can possibly be reduced by using loop or indoor aerial. Cannot as yet be entirely eliminated.
Tickler coil.	Too much wire on tickler or reaction coil. The large number of turns in use gives such a strong field that energy is fed back into the grids regardless of how the rotor is turned. Remove some of the wire from the reaction coil, and keep turning the rotor until set goes smoothly into oscillation. This is indicated by a dull thud instead of a harsh squeal.
Grid condenser.	Grid condenser short-circuited. Replace with new condenser.
Grid-leak.	Resistance too high. Reduce resistance until best value is found.
Flat "B" batteries.	Test "B" batteries with a voltmeter. Discard if they have dropped below two-thirds of rated power. If a storage "B" is used re-charge it. If storage "A" battery is used test with a hydrometer; if it registers below 1.170 re-charge it. If dry batteries are used discard them, and replace with new ones.
"B" voltage too high.	Too high "B" voltage on plate of detector valve has a tendency to make the valve oscillate. Re-



CLIMAX

—The trouble-free Battery!
 Install "CLIMAX" Batteries and
 Forget Them

Read this Letter Sent us Unsolicited!

"Wycare," Hillard Street, Lakemba,
 20th July, 1929.

To Messrs. FOX & MacGILLYCUDDY.

Dear Sirs,—On seeing your Advt. in "Wireless Weekly" of Friday, July 12th, I thought it might interest you to know that I installed two 45 volts light duty Climax Batteries the first week of September last year, and they are still going strong, having been in use constantly ever since. A couple of weeks ago I had them tested, and they still register 30 volts each. My sets is a 3-valve set.

I think this is sufficient to show that your Batteries are all you claim them to be.—Yours in good faith, G. NIELSEN.

"CLIMAX" BATTERIES

30 volts 8/-, 45 volts
 12/-, 60 volts 16/-,
 90 volts 24/-.

HEAVY DUTY SERIES NOW HERE 25/-.

"CLIMAX" C BATTERIES—9 volts 4/-, 15 VOLTS 6/-.

EQUIP YOUR SET TO-DAY WITH CLIMAX—THE SUPER-SERVICE BATTERY.

FOX & MacGILLYCUDDY Limited

WHOLESALE RADIO DISTRIBUTORS.

Merino House, 57 York Street, Sydney

"A" voltage too high.	Filaments should be heated to the lowest degree consistent with good signals. To use excessive filament voltage only shortens the life of the valve.
Plate and grid leads.	Plate and grid leads should not run parallel or touch. This causes a feed-back effect resulting in howls.
Aerial lead.	Aerial lead should not touch plate lead. In loose coupled sets this results in a capacity feed-back, and if the filament is earthed it short-circuits the "B" battery.
Transformers (radio frequency).	If the set employs radio frequency amplifications before the detector the transformers may be too close. The transformers feed back from the plate to the grid and cause oscillations. Space R.F. transformers farther apart, and mount at right angles to each other.
Radio frequency valve filaments too bright.	Radio frequency valve filaments are rather critical and need close adjustment to prevent them going into oscillation.
Plate and grid leads.	Plate and grid leads should not touch or run parallel. This causes valves to oscillate. Separate leads.
Batteries run down.	Test "B" batteries with voltmeter, and if they have dropped to two-thirds of their rated voltage discard them. If storage "B" is used recharge it. If dry cell "A" is used discard old batteries and replace with new ones. If wet "A" battery is used re-charge if hydrometer gives a reading below 1.170.
Transformer leads reversed.	Howling and squealing can sometimes be prevented by changing leads on the transformer. If different makes of transformers are used it is often found that the windings are reversed. All that is necessary in this case is to reverse the primary of one of the transformers.
Transformers too close.	Audio frequency transformers should not be mounted too close together. Four and a half inches should be the minimum separating distance. Keep well apart, and mount at right angles to prevent inter-action.
Feed-back from speaker.	When speaker is mounted on set or very near it howling may be caused. Remove speaker from set or cover detector valve with cotton wool.

WHEN HUMMING OR BUZZING SOUNDS PREVAIL

Possible Trouble.	Cause and Remedy.
Tuning coils.	Open circuit in tuner windings. Usually occurs where taps are taken from windings and where connections are made to the ends of the coil. Re-wind coils and securely re-solder connections.
Valve elements vibrating.	When rigidly attached to the base of the set, slight vibrations will cause the valve elements to vibrate. The remedy is to use shock absorber sockets, or place the sockets on sponge rubber. Rubber feet underneath the cabinet often help.

PENTODE VALVES NOW
AVAILABLE FOR COSSOR
MELODY MAKER.

**Avoid
Trouble!
ALWAYS
USE**



COSSOR

BRITAIN'S FINEST VALVE

Get better Radio—use Cossor Valves. Cossor Valves improve any Radio Set. They'll give you greater volume and sweeter tone. Cossor Valves are made in twenty-four different types for 2, 4, 6 volt or Mains operation.

There is one combination of Cossor Valves that will exactly suit your receiver—improving its range, volume and tone—your Radio Dealer will tell you which types you need—he sells Cossor Valves.

Your Dealer Sells Cossor Valves

Agents for Australia and New Zealand:
Lyall, Willis and Co., Ltd., Billiter House,
London (Eng.).

Wholesale Agents for N.S.W.
Jones and Joseph Ltd.,
235 Clarence Street, Sydney.

DISTRIBUTORS :

HARRINGTONS, LTD.,
386 George Street.
STROMBERG, CARLSON (A/SIA),
LTD.,
72-76 William Street.
HUMPHREYS, LTD.,
York Street.
MARTIN DE LAUNAY, LTD.,
287 Clarence Street.

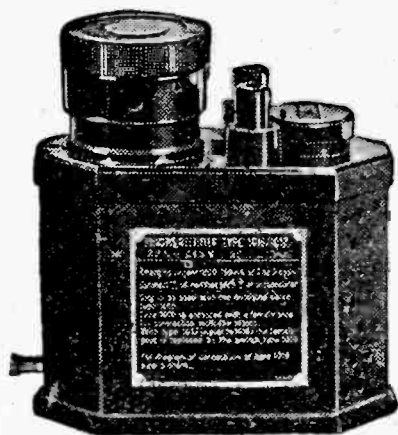
BLOCH AND GERBER,
York Street.
W. G. WATSON,
279 Clarence Street.
FOX & MACGILLYCUDDY, LTD.,
57 York Street.
MANUFACTURERS' PRODUCTS,
Clarence Street.

Aerial.	Aerial too close to alternating current electric wires. Sometimes reduced by running aerial at right angles to such lines. Sometimes caused by leaky transformer on nearby electric pole, in which case notify the power station.
Aerial lead.	Aerial lead running too near electric light wires in home. Electrical gadgets, such as bells, coffee pots, etc., will cause hum. Keep lead well away from such fixtures.
Temporarily shorted transformer.	If moisture gets into the transformer, it will be partially shorted, until the moisture has been driven off. Place a heated lamp globe into the cabinet for a few hours.
Transformers open circuited.	Often in soldering on the terminals the internal connections of the transformer are loosened. Can be repaired by opening the case and carefully resoldering the fine lead.
Transformer leads.	May be reversed. See that you have not connected filament leads from transformer to positive, instead of negative, side of the "A" battery.
Speaker or 'Phones.	Burned out or shorted windings. Take to a reliable firm.
Phone plug.	Defective or short-circuited. Remove plug, and see if current will flow from one terminal to the other when disconnected from the 'phones or speaker. If so, replace with new plug.
Batteries flat.	Discard or charge, respectively, if dry cells or accumulators are used.
Phone condenser shorted.	The 'phone condenser may be shorted, causing distortion. Replace. It may be also that the condenser across the primary of the first transformer is shorted. Replace.

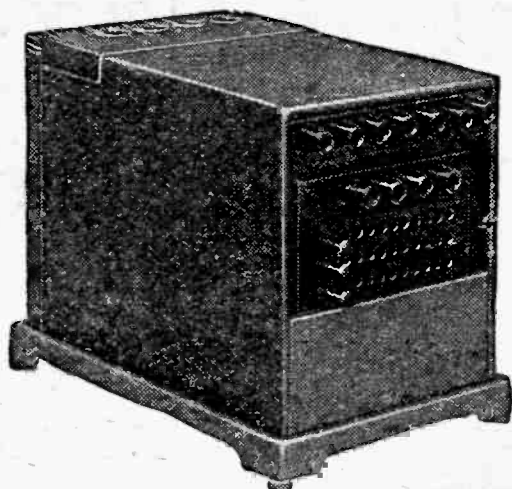
WAVERING OR FADING SIGNALS

Possible Trouble.	Cause and Remedy.
Aerial insulators.	Leaky, due to rain, spot, or dirt. Lead-in touching side of house, aerial touching tree, etc. Use glazed insulators and clean periodically. Keep aerial well away from earthed objects.
Variable condenser leads reversed.	If the variable condenser is improperly connected, the signal will fade when the hand is removed from the dial, due to "hand capacity." The fixed plates of the condenser should be connected to the grid circuit.
Rheostat.	A loose connection in the rheostat gives an unsteady current, and, accordingly, signals are caused to vary in intensity. Replace or repair rheostat.
Natural phenomena.	Signals fade under certain conditions, due to some condition existing between the transmitter and the receiver. To date there is no known remedy.
"A" battery.	Weak "A" battery causes unsteady flow of current, resulting in change of intensity in the signals. Replace or re-charge batteries.

—make your present set an
ALL ELECTRIC
 with these accessories



**PHILIPS 1017
 TRICKLE CHARGER,
 £3/10/-**

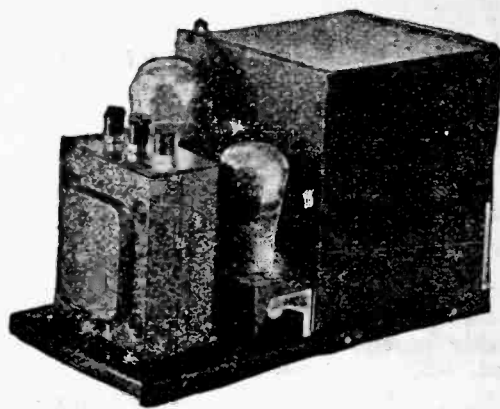


**PHILIPS 3003 B & C
 ELIMINATOR,
 £10/15/-**

or Convert it to an Alternating Current Set, with a

**PHILIPS
 POWER
 PACK
 £12/-/-**

**ALL OBTAINABLE ON
 EASY TERMS.**



All Types of A.C. Valves now available.

OPEN TILL 9 FRIDAY NIGHTS.

HOME RECREATIONS
 (Australia) LTD.,

388 GEORGE ST. (opp. Beard Watson's), SYDNEY.