

WIRELESS WEEKLY

Broadcast Programmes a Week in Advance

VOLUME 11

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Extract from Letter to
Amalgamated Wireless.

Brisbane,
16th October, 1927.

Since receiving those A.W.A. Super-Audio Transformers I have installed one in a broadcast four-valve receiver, and one in my short wave receiver at my radio station 4&L. There is no doubt that they are the basis, as we amateurs say, for on the four-valve I found an increase in volume, clearer music, especially the high notes of the violin and the cornet, and very quiet operation.

Results on the one that I installed in my short wave receiver are as follows: A much more musical note on Morse stations, telephony much clearer, elimination of noises, thus making a better set all round. It is imbued with pleasure that I have found in this case that an Australian Transformer was better than an American manufacture.

Wishing every success to A.W.A. Australian-made Products.

Yours faithfully,
Oscar E. W. M.

(Name on application.)



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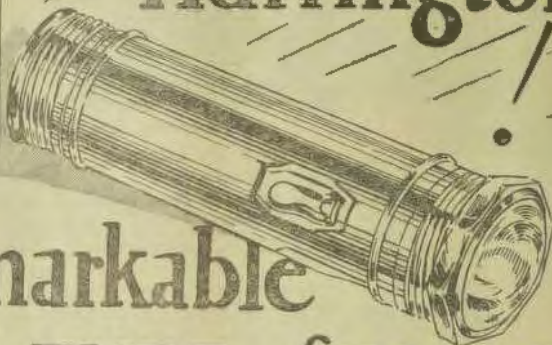
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WIRELESS WEEKLY

VOL. II, No. 1

FRIDAY, 25th NOVEMBER, 1927.

Broadcasting Conditions in the Country

CONSIDERABLE attention is being given of late to the conditions under which broadcast service is obtained in country districts; and to the measures desirable for the improvement of the services. It is only right that special attention should be given to the subject, because the city and suburban listeners are well catered for.

The service in country districts—say, over one hundred miles or more from the city—cannot be considered satisfactory, if we assess a good service as one reliably received, and “reliably received” means that the speech and music, or the “signal” as it is termed technically, is louder than the noises which affect the receivers. Those noises may be our old friend atmospherics or may be the comparatively newer acquaintances—radiation and induction energy from Post Office telephone apparatus used in exchanges, or interfering energy derived from electric power systems.

These noises or noise energy may be sufficiently strong to affect detrimentally the quality of broadcast music received. The noise is as great or greater than the signal. The aim of broadcast engineers is to ensure that a safe ratio between the two will be maintained. This signal to noise ratio should be such that the signal will always be greater than the noise.

The ideal condition is that when the signal is much louder than the noise, as phonograph music is louder than the needle scratch. Such a condition is obtainable only in receivers located near the broadcasting station. In country districts it is impossible with ordinary conditions of atmospherics in summer.

We may assume that the noise “level” or strength throughout the State is uniformly 10 units. The signal strength near the broadcast station may be 100 units; at a distance of 20 miles it may be 50 units; and gradually falling away until at 100 miles it is only 10. At that point it has a moderate

chance only of giving some sort of good service, but further on when, say, it is down to five, then we know it is below the noise level—the noise is twice as strong as the signal with consequent and well-known annoyance to listeners.

No efforts by the owner of the receiver can improve the conditions considerably. There are many methods of attempting to cut out atmospherics, but they all result in cutting down the signal strength as well. The only real remedy is to bring the signal strength up; this can only be done by increasing the power of the transmitting station greatly or by erecting a “local” re-transmitting or re-broadcasting station. As discussed recently the more satisfactory method is the latter one.

These country stations—whether we call them relay stations, re-transmitting stations, re-broadcasting stations, or simultaneous broadcasting stations, doesn't matter—are urgently required. The last-named definition is perhaps the best, because the purpose of the stations is to broadcast on their own respective wave lengths the programme that is broadcast by the main station. The main station is connected by a telephone circuit to the country station and simultaneously the programme is broadcast by the main and the country station. Thus when 3LO is transmitting at Braybrook the programme is also sent from the studio by telephone line to, say, Ballarat, where it is transmitted on another wave length.

3LO, Melbourne, has made commendable efforts to establish relay stations, but for some unaccountable reason the Post Master General's Department is not assisting the worthy project. Whatever the reason for the delay may be it is most regrettable, as the establishment of two or more stations would make a big difference in improving the receiving conditions for country listeners.

Country listeners troubled by atmospheric will be interested in the constructive details for a simple and efficient wave trap published on page 11.

Catching Up with the Wireless World.

By R. E. CORDER.



LORD BIRKENHEAD is reported to have said: "It's all to the good that men should go on talking." This seems to find favor with the broadcasting companies.

THE LONG, LONG TRAIL: It is estimated that just under 80,000 paying visitors passed through the turnstiles at the Wireless Exhibition in London.

A TRUNK CALL: A telephonist at the Hague had a startling experience the other day when, unknown to him, the line was connected via Amsterdam with the famous Eindhoven short-wave station. On his enquiring whether he was speaking to Amsterdam he received the reply: "No, you are speaking to Bandung. (Bandong is in the Dutch East Indies.)"

FRANCE AND GERMANY: Before the end of 1928 France will have new stations at Nice, while the Eiffel Tower proposes to increase its power to 80 kilowatts. The same tale can be told of Germany. The new high-power stations at Ziesau will open next month, at about the same time as the new station at Cologne, and other stations will soon be in operation at Altenbourg and Raderthal.

PORTUGAL will shortly have a finger in the pie with new stations at Lisbon and Oporto, and Spain will assert herself with new stations at Barcelona University, Melilla, and Almera. Greece has prepared a scheme for seven stations at Athens, Gannia, Petra, Syre, Sente, Khios, and Salonica. Then Holland will come forward with two new stations, one of which will be at Amsterdam. A Hungarian 20-kilowatt station will make its debut this month. Add to all these Russia's little estimate of fifty new stations and we see that a different basis of wavelength distribution must be sought.

MR. J. I. BAIRD, the inventor of television and phonovision, is reported as saying that some faces sound like a gargle. Still, perhaps it was only ginger beer.

THIS WEEK'S LIBEL is the story of the Scotsman who bought a warve, used it for three years and then took it back to the shop and said he had just learned that it contained a vacuum, and he would like either a gas-filled valve in exchange or his money back.

A RADIO SALESMAN has had to appear before the court on a charge of stealing wireless components from his firm. We suppose he took advantage of the "stocktaking" season.

JUST AS THE TURKS were apparently becoming happy and at peace with themselves and the world Mustafa Kemal delivered a radio address that took seven days to a given point.

THIS IS BEYOND all question the greatest act of cruelty ever committed against a nation by its ruler. Even Nero in his most barbarous moods knew enough to vary his act with a little jazz on the bull fiddle.

THERE WERE 400,000 words in Mustapha's radio address and at least 200,000 of them were just strange whines and curious noises. If it hadn't been for the static the President's speech would have given the Turkish people their best sleep in history.

MUSTAPHA opened up on a Saturday afternoon with "Fellow citizens" and on the following Tuesday he hadn't reached the point where his address said "And secondly."

WEDNESDAY NOON he had just sprung the line "My purpose in coming before you to-night is," and there was every likelihood that by Thursday night he would be well into the body of his talk.

AFTER THE FIRST hundred hours every Turk in Turkey had stuffed his ears full of prayer rugs, but was putting up a brave front and trying to stay in front of the loud speaker like a dutiful subject until Kemal would sign off and let in the Angora Melody Boys, the Palace Troubadours, the Harem Choristers and whatever jazz orchestra is now boosting ginger ale in Anatolia.

A MODERN MINSTREL

I've sung upon the prairie,
I've sung on every sea,
In desert spaces airy,
To Veldt folk—for a fee.

I've sung upon the mountains,
In valleys and on plains,
On lawns by playing fountains,
I've even sung on trains.

In hospitals have cured men's pain,
In prisons gained their cheers,
Soothed in asylums and insane,
In churches drawn chaste tears.

Through England, Scotland, Ireland,
Wales,
The Theatres and the Halls,
Could of those triumphs tell true tales
Of "Curtains" and "Recalls."

I've jessed to sing in China,
Made music in Malay,
Aye, voted few things queer,
'E'en to Sing-a-pore way.

New Zealand and Australia,
Tasmania, Newfoundland,
Through Canada and Africa,
On India's coral strand.

To audiences of gold-diggers,
To coasters and to kings,
To soldiers and to sail-riggers
(He sees the world who sings!)

On world-tour over four years,
O'er hundred thousand miles,
Few incidents were fraught with fears,
But merr, laughs and smiles.

A train snowed-up for thirty hours,
One, lucerna brought to stand-still,
Saw trees up-torn by great gales
powers;
Had storms at sea to thrill.

For singing set "Upon the air,"
Fine folk I've never seen,
Pon pages of rich praises rare,
'Tis good and glad to glean.

—ALFRED CUNNINGHAM.

"Burgess" spells "Quality; Life; Service."

Hello! So this is 3LO.

An artist's impressions of a broadcasting studio. An inside pen picture of 3LO in action during an evening's programme.

By Nora Cooper.

A WAY in a back lane in the heart of Melbourne there is an innocent-looking building which might be anything from a Jewish Tabernacle to the latest thing in baby clinics. Over the door is a strange device circular in shape, inscribed with mystic signs, apparently the hieroglyphics of some dead and gone religious faith. Screw your head round, and look a little closer, though, and you will be pained to find that they are written in ordinary plain English,—not "Excelsior," as you might have supposed, but 3LO.

Through the dark doorway, and upstairs to No. 1 Studio, and you find yourself in a soft warm-toned stillness, the pregnant stillness of which is always associated with the "inside of things."

For this is truly the "inside." Here are born all the broadcasting programmes with which 3LO delight the heart of Mr. and Mrs. Suburbia and all the little Suburbians, to say nothing of the country folk, and which make the welkin ring, to the probable disgust of the heavenly choirs who have hitherto had the air to themselves.

Here you can see and hear many strange things, and lose perhaps one or two illusions. You may discover that the lady whose touching little ballad moved you to tears the other night when you listened in, is fat and fifty, with a devastating smile. You may see a nervous violinist bowing and smiling futilely to an invisible audience, after his turn; or a plump comedian singing comic songs with an awful fixity of face and gesture, so afraid he is of getting out of the radius of the microphone. You may hear just what a band can do in the way of a recital when there are no tiresome regulations for the restriction of its noise to cramp its enthusiasm. You may see a bed-time story in the flesh.

Perhaps the last is the greatest thrill of all. For it is hard to believe that you stately personage, who looks like John Wesley, Beerbohm Tree and Abraham Lincoln rolled into one, is the genial Billy Bunny, who can put such paths into the adventures of Brer Rabbit, or who has such a large family of nephews and nieces that it takes him twenty minutes every night

just to wish them many happy returns of the day.

Whether you are familiar with the ways of wireless or not, it is fun to watch a programme being made. Here comes a lady vocalist, a little nervous—it is obviously the first time she has sung to the microphone, but the impressive announcement of her name and piece by Maurice Dudley would give courage to a newly wed bridegroom to meet his mother-in-law. Her voice is sweet and true, though halting. Suddenly the peaceful gloom of the studio is stabbed by a flash of light on the indicator. "Louder" is the silent command. The lady gives one terrified glance, treads on the gas and goes for her life, ending in a final triumphant top note which could almost travel out to Braybrook by itself.

That over, we draw a long breath, and wipe our heated brow whilst a well-known Tivoli comedian tries conclusions with the microphone. He does his best to confine the expression of his art to its cramping radius, and the red sign calls him to order several times. At the end, the favored few who compose the studio audience, applaud him heartily, but whether it is his actual jokes, or his dexterity in "putting them over" "au naturel," so to speak, without the comforting support of his usual "business," it is hard to tell. From sheer force of habit our friend comes forward to the footlights to take his cue, beamingly ready with an encore.

But, alas, there are no encores on the air, and his place is taken "instantly" by an earnest person who explains with lurid details, just what is wrong with the dietary of civilisation. He regards the microphone in front of him very much as a Government meat inspector might regard a consignment of condemned mutton. Fortunately the instrument receives his burning words with the same impassivity as it receives everything else—otherwise it might have gone hard with it.

Then there is Joe Avonson's jazz band. What power—what picturesque vigour! Listening to it at one's own fireside is not nearly so thrilling as seeing it in the flesh. Here is an instance when the doubtful privilege of

television—if it can be applied to radio—would be really a blessing. To be able to see Joe and his trusty henchmen tossing their heads and putting their backs into the latest fox-trot—why we would rush the chance of dancing to a neighbour's wireless instead of dodging it as we do now, very often.

One longs to talk in the studio. There are so many interesting things to comment upon, so many questions to ask—for instance, why does Mr. So and So always stand on one leg when he sings, or why Miss Somebody Else regards the microphone with such concentrated scorn as she plays her piece, that one feels it ought to blush for very shame, for eaves-dropping,—caught in the act, so to speak. But the management—wisely—do not allow anyone to talk. There are gentle little red notices all around the walls, enjoining "Silence" which keep you in place, whilst the mosaic pattern of song and story, musical thunder and thunder of eloquence which makes up a 3LO programme is slowly unrolled for the benefit of a waiting world.

And wireless programmes are not at all easy to make. 3LO, Melbourne, have a very efficient system of selection and arrangement, and they have done much and are doing more to lift the wireless concert out of the slough of boredom and harmless insanity, in which it seems to have hitherto unaccountably languished. Artists and their repertoires undergo searching examination before they are finally admitted to the "invisible choir," and should one break his leg, or lose his voice or his nerve at the critical moment, another is ready to take his place at an instant's notice, as not for one instant is the voice of 3LO silent once it has begun to talk.

So it goes on. For twelve hours every day, 3LO flings out gay patters of sound on to the limitless air. One might wonder at the music of the spheres becoming peevish at so much competition. One might imagine celestial performers who have hitherto had it all their own way complaining to their musical directors that some of their best bits were being spoiled owing to interference from a go-ahead station in Melbourne, or, perhaps,—such is the power of progress—they might find themselves obliging inad-

Empire Radio Association Suggested

A Representative of the Wireless Association of Great Britain will shortly visit Australia with the object of forming a branch of a proposed Empire Association

AN interesting letter proposing that an Empire Wireless Association be formed, has been received by Mr. R. F. Gardner, manager of S.A.R., from Mr. H. A. Hankey, secretary of the Wireless Association of Great Britain.

Mr. Hankey writes:

"I have had the matter of Empire broadcasting at heart for a period of nearly two years, and an original article was written in the 'Wireless World' last year pointing out the desirability of establishing Broadcast Communications, which would be of immense psychological importance, and of decided practical value. It should be mentioned at once that my experience of wireless dates back some twenty-one years, and since the War I have been with Messrs. Marconi for four years, and the British Broadcasting Corporation for two years.

(Continued from Previous Page)

vertently with bits out of Glibert and Sullivan, or "To-night's My Night with Baby," which they had "picked up" and taken a fancy to.

It is nothing to sit in the dim blueens of the studio, lalled by the sorous voice of Billy Bunny as he flings his nightly message of innocent cheer his invisible audience—scores and scores of bright little eyes and eager little ears, tense, silent, excited, listening in hard for the magic sound of their own name; or, later, when the music starts, to imagine how in some far away settlement Dada Wayback is pushing back his chair from the tea-table, wiping the crumbs from his whiskers, and reaching out for the earphones.

He will listen to the programme with varying emotions—keen and shrewd over the weather and stock market reports, bored and inattentive when the educational gentleman comes along, frankly bewildered when the band breaks into "Tannhauser," wiping a surreptitious tear over "Annie Laurie," or lost in a maze of chuckles and thigh slapping at the jokes of the funny man. So that in this, apart from its myriad other uses, wireless is a truly great servant of mankind.

"During the recent Colonial Office Conference, held in London, I made it my business to arrange for an item on the agenda dealing with the matter of Empire Broadcasting, and intense interest can be said to have dated from that time. It so happened that the Dutch authorities commenced operations at about the same time, which greatly enhanced the proceedings, and, of course, the recent transmissions from the Commonwealth have definitely shown us what can be done. Incidentally, I received the whole programme on a quarter wave length aerial Mr. Gerald Marcuse has also been most helpful, and I may say that I was instrumental in obtaining his recent transmitting licence for the use of higher power.

"This Association is really a Listeners' League, which, in addition to representation on programme and technical matters before the Wireless Organisations Advisory Committee of the B.B.C., conducts unlimited correspondence with its members on all matters pertaining to transmission and reception, and gives them legal protection, in addition to a comprehensive Insurance Policy. The strong point, however, as regards residents in the British Isles is the Patrol Scheme, which is based upon the working of the Automobile Association. Members receive free visits from our Patrol Engineers stationed in all parts of the country, and unbiased advice is given regarding their troubles. There are also some 350 Registered Dealers who have undergone a qualifying examination, and in consequence we can safely refer our members to these dealers for actual repair work.

"Another listeners' organisation in the British Isles which does not embrace the Patrol scheme, namely, the Wireless League, also exists, and it may interest you to know that our Joint Councils have been in communication for the last two or three months with a view to amalgamation, as it is felt that one representative body would be in a much stronger position. This is borne out by the merging of the Automobile Association and the Motor Union some years ago. It is then proposed that we form an Empire Broadcasting Branch in order that Commonwealth and Dominion listeners may be officially

represented before the Wireless Organisations Committee, and have a direct say in programme and technical matters when the proposed station is erected. Incidentally, they will bring quite a lot of pressure to bear in getting a real move on. You will be aware that the British Broadcasting Corporation has been very slow in taking the matter up. This is, perhaps, not unusual in Government departments! Nevertheless, it is highly desirable to have a representative body to keep things going. Beyond this representation, overseas members will receive a Monthly Bulletin of technical and chatty material concerning short waves and the Empire Station in particular. Alternatively this brochure might take the form of a Magazine issued quarterly, which, naturally, could be of better quality than the more frequent issue. This is a matter which will have to have consideration after tackling the public themselves. Thirdly, individual correspondence with members will be welcomed. This would be particularly useful to those members situated up country, and in the 'hush'.

"One must not forget that Australia, New Zealand, and South Africa would form the nucleus of this branch, and we are assured of support in East Africa and F.M.S. Obviously Canada, the West Indies, Pacific Isles, Hongkong, West Africa, etc., etc., would follow suit. We may say that each member would receive a good class certificate to prove that he is properly registered. The proposed membership fee is the equivalent of £1 sterling per annum.

"It is my intention to give as much publicity as possible to the enterprise at the ports of call, and in addition to find out the definite requirements of those interested in the Empire Station and its working. Incidentally, I shall take a short wave receiver in order to obtain reception data en route.

"The proposed date of leaving is the 17th December by the s.s. 'Demosthenes,' which calls at Durban, Cape Town, Melbourne, Sydney and Brisbane, etc. Incidentally, I might add that the A.B.C. of South Africa has also kindly notified me that I shall have an opportunity of addressing the listening public through their stations during my relatively short sojourn."

It's All in the Air

Coming Features in the Broadcasting Programs

LORD MAYOR TO SPEAK: Sir Stephen Morrell will speak at 3LO on "The Million Shilling Fund" on Wednesday evening, November 23rd.

LITTLE RED RIDING HOOD: Miss Yetty Landau's pupils will produce this charming fantasia from Nursery Rhyme Land for broadcasting by 3LO during the Children's Hour on Thursday, November 24.

TIVOLI THEATRE ORCHESTRA: The first part of the Tivoli Theatre programme, including Ernest Gram and his orchestra, will be broadcast by 3LO, Melbourne, on Friday afternoon, November 25th.

SCOTS WHA HAE: The speeches at the official luncheon at the Highland gathering will be transmitted by 3LO from the Exhibition Building on Saturday, November 25th, at 1.55 p.m.

POPULAR ORCHESTRA: Many listeners will welcome the return on the air of Malcolm Reid's Orchestra. This orchestra has recently been re-organized and augmented, and will be heard from 3LO, every Friday evening between 8 and 9.

THE SYDNEY Madrigal Society's concert will commence the series on 23rd November. The choral items have been well chosen, and solos by Gwen Selva, Frank Hutchens and Jules Van der Klei add considerably to an already attractive programme.

THE NOVEMBER BRIDE: Voting coupons for the most popular November bride have arrived at 3CL in large numbers, and the competitors are all anxiously awaiting to see the result of the voting. The winner of the competition will receive presents totalling in value approximately £100. The marriage of the winner will take place on Saturday, November 26th, the ceremony and reception being broadcast by 3CL.

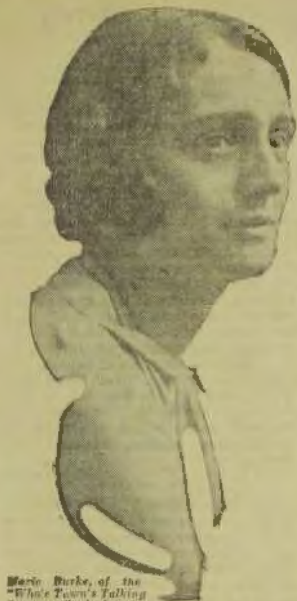
Some of the best artists have been engaged by 3CL to render musical items, and the whole event is sure to be a joyful one.

BENTY CELEBRATIONS: From the Chapter House of St. Paul's Cathedral on Wednesday evening, November 23rd, the Benty celebrations will be broadcast.

THE BIRD MAN: Listeners will be pleased to hear Dr. J. A. Leuch again at 3LO, Melbourne. He will speak on "Syrant" on Saturday evening, November 25th.

BEPPIE DE VRIES: Miss Beppie de Vries, who is appearing as Kathie in "The Student Prince" at His Majesty's Theatre, will be heard in an interesting talk to be transmitted by 3LO from her dressing room on Thursday evening, November 24th.

TALKS ON ROWING: Mr. J. P. Marcus, who is well known through his activities in connection with the S.A. Rowing Association, will deliver a talk at 7.25 p.m. on November 25th. Mr. Marcus is an extremely popular gentleman in South Australian sporting circles, and his talk is sure to be of special interest.



Marie Burke, of the "White Town's Talking Company," who broadcast from 3LO recently. She will shortly reappear on "Wildflower."

A UNIQUE COMPLIMENT has been paid to 3AR, Melbourne, by a number of parents and children of Koondrook and Barham districts (Vic. and N.S.W.). They have forwarded to the manager, Mr. R. F. Gardner, a testimonial bearing more than 100 signatures expressing approval of the appointment of Mr. H. J. Hook, who will talk to the children under the name of "Erer Rabbit."

MAGGIE FOSTER: Listeners will be glad to know that Miss Maggie Foster—with her curls and violin—is once again broadcasting from Studio 3LO, Melbourne, after having had a wonderfully successful tour throughout Australasia. Among her most successful contributions to the programme, is a solo on which she gives a life-like imitation of a canary. This was written for her during a tour through New Zealand some little time ago, and presented at the close of a selection in which Miss Foster had imitated a number of musical instruments—the composer thinking she might care to add another novelty to her already extensive repertoire.



Robert Chambers, the coach of the Australian team in the four-nation games at Paris, who is broadcasting a series of talks at 3LO on "Training."

In the Programmes.

SEVERAL interesting things have been included in the programmes that will usher in December. From Ballarat on Sunday, 4th December, the old story of our baby rebellion, the Eureka Stockade, will be retold in the anniversary services, which 2LO will broadcast. The following day 2LO goes further afield in pursuance of its country decentralisation policy. It will broadcast a fine concert from Echuca.

On the 7th December Miss Mary Campbell, of Mr. Fritz Hart's Conservatorium of Music, will give a programme exclusively English. Choral, vocal and instrumental music will be given by a good company of artists, headed by Mr. Hart himself. This will serve, not only to delight the ear, but to reveal how far and how fast English music is progressing. On Saturday another delightful treat in the shape of the old favorite, "Ma Mie Ronette" will be given by Madame Ashton's pupils, from the Studio.

A new personality in broadcasting makes his first appearance for a week, beginning 5th December. This is Cy Peir, who is called the Ukelele Troubadour, a name sufficiently descriptive in itself to dispense with explanation. His appearance will be watched with interest.

OPERATIC ENTERTAINERS:

Two newcomers to Studio 2LO, Melbourne, are Pollard and White, entertainers, who with the aid of a well-trained baritone and soprano voice—and a piano—contrive a musical turn which is much above the average, and distinctly original. Their repertoire contains a pleasing variety of songs—ranging from Grand and Comic Opera selections to Light Comedy—daintily rendered by Miss Pollard—whilst their artistically arranged duets will form a welcome addition to the programme.

FAMOUS FOOTBALLER ON

CRICKET: Few people are more welcome over the air than Mr. Rod McGregor, who, during the football season, made thousands of friends among listeners, and now is proving himself a brilliant broadcaster of the descriptions of the various cricket matches. Although many listeners were under the impression that Mr. McGregor's activities in the realm of sport were confined to the football field, this is not the case, for, in addition to being a "pennant" cricketer, he is the secretary of the State Schools' Amateur Athletic Association, and, with a selected committee, controls and directs the sports and games in the schools, both boys and girls coming under his jurisdiction.

ONE OF THE DIGGERS: One of the most popular artists broadcasting from Studio 2LO, Melbourne, is "Bobby" Pearce, whose pleasing baritone voice is heard to best advantage in breezy songs of the open road, such as "Stoicracker John." Among his friends, this favourite artist is regarded as something of a "wonder"—for he was badly knocked about during the War—having many operations—and enduring the later part of his time overseas in many hospitals. On returning home, he joined the "Famous Diggers" Concert Party, and with them made many successful tours of Australia and New Zealand—and has now settled in Melbourne—being much in request at various smoke nights and other musical functions. It is interesting to note that two other artists frequently heard from Studio 2LO—Syd Exton, the well-known tenor, and "Johnny" Marks, the versatile comedian—have been his companions "throughout the piece"—for they fought side by side in Flanders—spent several months together in hospital—toured Australia and New Zealand in the same concert party—and have met at the end of the journey in the spacious studio at 2LO, Melbourne.



Enid D'Arcy, soprano, who is regularly heard from 2FC.

Jazz v. Beethoven.

A pianist whose name is well known in musical circles, in London and Sydney, called at 2FC Studio the other day, primarily to congratulate the management on the tremendous progress radio has made, through the world broadcasting activities of that station. The talk turned on the millions of listeners the British Broadcasting Corporation satisfies, and the comparatively meagre, but discontented, Australian listening public. "As far as programmes are concerned, one does not hear 2LO listeners complaining. Perhaps it is they are more easily pleased than Australians," and the visitor smiled. "I don't doubt it," commented Mr. Anderson grimly, in the light of three years of programme building experience. "Well, may I offer a suggestion?" It was Mr. Anderson's turn to smile. "Constructive criticism is the breath of life to a broadcasting station, Madame," he replied.

"YOUR SLOGAN IS 'DIVERSITY,'" his visitor told him, "but you carry it too far. You give lovers of good music twelve minutes of the gems of the masters, and you follow it up with the lowest order of harmony—a ukelele solo. Not unnaturally, I loathe the ukelele solos, but I am quite prepared to bear in mind there are hundreds of listeners who cordially detest the classics. What I would like to suggest is that you devote, say, one hour to good music, and then continue with the popular programme. I, and many more like me, would appreciate longer than an hour, but we are not nearly so selfish as your jazz lover, who calls for jazz all the time, and we would be content to enjoy our hour. There is a good deal to be said for this argument, and 2FC have decided to arrange for one night in the week, probably Wednesday, when the programme will satisfy the most ardent of classic devotees.

TWO DISTINGUISHED MUSICIANS: On Sunday, November 27th, music lovers will have a great treat from Studio 2LO, Melbourne, for a joint recital of piano and flute is to be broadcasted, the two artists being the distinguished Australian pianist, Mr. William G. James, and the well-known flautist, Mr. Stanley Baines. Both these artists are well known to listeners as musicians of exceptional ability, and the very attractive programme that they have arranged for this occasion will be greatly enjoyed and appreciated by everyone.

Burgess Went Over the Pole with Byrd.

Can Man Conquer in War on Static?

The reasons why static cannot be entirely eliminated are discussed in this article by an expert. Various types of static prevention devices are discussed and the reader is invited to turn to page 11, where constructional details for a simple wave trap are given.

THE chief reason that it is so difficult to eliminate static is that it comes from so many different sources of disturbance. It is as though nature were sending from thousands of radio stations of her own, tuned to all possible wave lengths and frequently of great power. So the result is, since static is coming in on all wave lengths, that no matter where we tune our receiving apparatus it is impossible to avoid it.

The only difference between the static waves and the waves from radio stations is that the static is highly damped, that is, very broadly tuned, as compared with the usual ether waves. This enables sharply tuned receivers to discriminate to a certain extent in favor of the radio signals, since the sharper the receiver tuning the narrower the band of static which is being received. But even at best this affords very little help.

Perhaps a word or two as to the cause of static may not be amiss. It is, we believe, in general caused by electrical discharges in the atmosphere; much of it undoubtedly comes from lightning and non-luminous discharges in the thunder clouds. But it may also probably originate where any two bodies of air at different electrical potentials come together.

In regard to non-luminous discharges from thunder clouds, it has been suggested in England that the cloud may discharge quite as readily to the upper conducting atmospheric layers as to the earth. Even though the distance may be so much greater, the diminution of air pressure with the height would render the discharge so easy that it is extremely likely that such discharges may take place even without luminous effects. Watson Watt, in analyzing the records of European radio stations in order to determine the causes of static, has concluded that in only about 35 per cent. of the cases given could thunderstorms be identified as the sources of these disturbances, but that in 75 per cent. the sources were rain areas of some kind.

Static Prevention Devices.

Hundreds, and perhaps thousands,

of devices have been produced by various people which, it was hoped, would overcome static. When these have been thoroughly tested, however, while some have been slightly useful, none have proved cur-all.

The fact is, it is rather easy to imagine that static has been eliminated when experiments are being made with weak static and rather strong signals, for it is only necessary to cut down both equally in order to make static disappear. If a record had been kept of the time of year in these inventions it would usually be found that they were developed during the Autumn and Winter and finally came to grief under the high static of the following Summer. Most of these anti-static devices may be divided into the following classes: Directional reception devices, audio frequency tuning devices, signal limiting devices and balanced circuits.

Directional reception, at least as far as long-wave radio-telegraphy is concerned, is certainly the most effective means of combating static which we have at present. It is particularly useful where the reception is from overseas, since most of the static comes from the land side and roughly from the opposite direction of the signal. This principle is employed in the Beverage antenna, as used by the Radio Corporation of America and others, for long-wave transoceanic reception, and in the unidirectional combination of loop and antenna as used by our navy. Some of these antennae are often many miles long.

Audio frequency tuning is somewhat useful in the reception of code, on account of the difference in tone of the signal and the static, but obviously cannot be used in broadcasting reception, where all the musical tones must be equally received.

In limiting devices, by means of vacuum tubes or by other means, the maximum strength of signal which can pass through the receiver is limited. This is an idea which has formed the basis for a very large number of static-reducing inventions, and it does indeed bring the static

down to the strength of the signal. But the unfortunate fact is that when the strong static is coming in, the receiver is practically dead, so that at that moment no signal is received, and in the case of code, dots drop out and holes are left in the dashes.

A number of years ago a rather complicated form of static and interference eliminator was devised which worked somewhat on the principle of the combination lock, in which only the impulses which came in a definite combination could get through the receiver. But in this case, like the limiting devices, static also destroyed the clearness of the signal.

None of the arrangements thus far mentioned offers any hope for a real cure of static, and unless some brand-new idea is developed we cannot see any definite prospect of getting rid of it entirely.

At present, the best way of avoiding trouble is to make the signal stronger than the static. Strong signals may be obtained either, by using great power or by getting close to the sending station. So the simplest means of avoiding static interference is to make as much use as possible of the local stations. For, except in rare instances, reception over a distance of but a few miles offers the only possibility of perfect enjoyment of a fine musical programme.

The conquering of static by high power at the sending station is evidently limited by economic considerations, for doubling the power of a sending station only increases the amplitude of its waves by about one and one-half times, since the amplitude increases as the square root of the power. Therefore, at a distance of several hundred miles, any probable increase in station power will not be able to drown out static when it is very severe.

It must be concluded, therefore, that static seems to have the best of us, except when we are close to the transmitting station, because with all the powers of nature behind it, it will always at times be able to drown out our human efforts.



The Safety Valve

Readers are urged to express their opinion on matters pertaining to broadcasting. If you have some grievance, if you have some constructive criticism to offer, here is your chance for expression—your safety valve. The editor assumes no responsibility for statements made by readers and published on this page, as opinions of correspondents do not represent our editorial policies or beliefs. Anonymous letters are not considered.

A BURIED AERIAL.

Dear Sir,—Enclosed please find cutting from an English provincial paper, the "Horne Bay Press," of September 3rd. It deals with the subject of buried aeriels and gives a description of how to make one.

I have made an aerial of the sort described and use it with my Murdoch Junior 3 Valve Set, and find it very satisfactory. The signals are very little weaker than when using my ordinary single wire aerial, and although I am using ordinary "lead in" wire in place of the lead covered as recommended, the static trouble is very appreciably diminished. I believe when I am able to obtain the lead-covered wire it will be cut out altogether.

The wire I used in the actual aerial was also No. 16 lead-in wire. The condenser readings on the set are lowered by the buried aerial (i.e., the reading of, say, 2FC now shows a higher wave length than formerly), and finer tuning is necessary, although greater selectivity is obtained. I am using two Mullard P.M. 3 valves and one Radiotron UX199, otherwise the set is as purchased.

Hobart (7ZL) is coming very loudly on two pairs of 'phones, but 2YA, Wellington, had closed down before I began listening-in. Usually, I can get them with ease on two pairs of 'phones and sometimes well on the loud speaker, although that is not quite up to the mark just now.

I have not seen much mention of buried aeriels in "Wireless Weekly," but knowing that a good many people's sole means of enjoyment is wireless and that often that is spoilt by static, I thought I would pass on the idea in the hope that possibly it would be of use to someone.

I have tried also the "double earth" system, but cannot get anything like the results from it that I can from this buried aerial.

As I mentioned, my set is only a Murdoch Junior 3 Valve, bought last June, but I can get easily on 'phones or speaker 2FC, 2BL, 2GB, 3LO, 3AR,

4QG, and 5CL; at excellent 'phone strength 2EY, 2UW, 2BE, 3DB, 7ZL, 3UZ, 5DN, 2YA (N.Z.), and have got, altogether I have never really tried to see how many I could get, a whole host of amateurs in South Australia, Queensland and New South Wales.

Yours, etc.,

Quandialla, N.S.W. J. CARTER.

For the benefit of those interested in buried aeriels we reprint the cutting forwarded to us by Mr. Carter. It reads as follows:—

"A well-known American wireless inventor, Professor J. H. Rogers, has been experimenting for some time past with devices designed to eliminate or at all events to reduce very greatly the effects of atmospheric interference during reception. The best arrangement yet found consists in eliminating altogether the high aerial and using instead a wire buried beneath the surface of the ground. One might think at first sight that such a collector would be very inefficient, reducing signal strength to something very small indeed. Those who have tried a buried aerial, however, report that there is very little diminution in signal strength, but that atmospherics are almost if not entirely silenced even at times when they are so violent that reception with an ordinary aerial is impossible. Professor Rogers states that his own experiments have shown that signal strength remains practically constant no matter how deeply this strange form of aerial is buried, but that atmospherics are so faithfully dealt with by it that reception may take place even during a thunderstorm. As readers may care to test out the efficiency of the buried aerial for themselves I will give particulars of a type which has been found very effective in America, where during the summer atmospherics are often so powerful that reception of even the local station is almost impossible by ordinary methods. Obtain about sixty feet of rubber-covered wire and wind this into a coil a yard in diameter. Dig a

hole four feet deep. Fix one end of the coil of wire to a stick laid across the top of the hole and leave the other free. The coil will thus assume the shape of a spiral spring, with its lower end resting at the bottom of the hole. Now replace the earth and remove the stick. To the end of this wire solder a length of lead-covered cable, such as is used in telephone work, and attach the other end of this to the terminal of your aerial lead-in tube. It is essential to use lead-covered cable for the connection between the buried aerial and the lead-in tube, for otherwise atmospherics will be picked up by the wire itself."

GREEN MARIA WANTED.

Dear Sir,—I would like to draw your attention to a letter from G. W. Smith, of Hamilton ("Wireless Weekly," 18/11/27). He states that he is being interfered with by the local pest, "Rusty Mangle."

He also states that he had conferred with several people in his district and they are all complaining, so I hereby give him some information. I might add that I do not care if he makes use of it or not, but I found it quite useful to me.

Call casually upon some neighbor and ask how the wireless is perking and then most probably he will say, "Great! Come in and hear 'ABC' or 'XYZ' of Sydbourne, New South Victoria," and you will most probably find that he is the "mangling" culprit, although he really does not know it.

Most probably he is blaming someone else for the "aqueals" he himself creates.

The next thing to do is to "just put a little oil in or on the mangle."

Hoping that they will soon have one of those "Green Marias" (such as you had for your cover picture last week) out here to levy heavy and drastic punishment on "howlers" and "pirates."

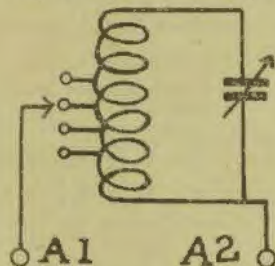
Yours, etc.,

Parramatta. J. T. LANG.

Eliminate that Interfering Local Station

A Wave Trap which Will Trap.

THE problem of interference is a vast one, so much so that many writers approach the subject with diffidence. A high powered local station, or often as not, completely drowns the reception of the distant station so often desired, and to say



the least, it is extremely annoying. The real solution of the problem lies in obtaining a receiver possessing the selective qualities of such an order that the local station is relegated into silence when other stations are received.

Such a set invariably employs radio frequency amplification in some one of its forms. The Neutrodyne, Suldodyne, Marco Four and Super-Heterodyne, for example, all are selective receivers, making use of radio frequency amplification. Yet even with these selective receivers difficulty is sometimes experienced in saying "no" to the local station, particularly when the set is situated within a half mile or less of this local station.

This brings us to the question "What can be done to cut out the undesired station?" There is one solution, and that is, the installation of a wave trap. Some readers will say that wave traps are ineffective, they have tried them without much success. This is partly true, for there are many wave traps which do not seem to "deliver the goods." There are many and contributory reasons for this, the main one being the difference in lengths, heights, etc., of different aeriels. It therefore behoves us to seek some such wave trap which will respond satisfactorily to all aeriels. The one about to be described is just the type, and its use will give many happy hours to its owners. Mind you, it is not put forward as a panacea for all selectivity troubles, for some sets are so broadly

tuned that nothing short of an axe will render this selective, super selective, in fact, for then not even the local or any other station be heard.

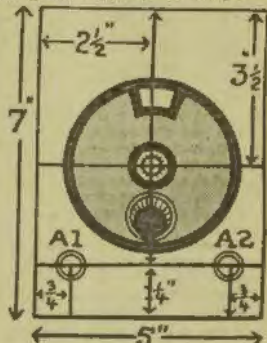
The installation of this unit means the addition of what might be termed special selectivity. It is not intended to take the place of true inherent selectivity, but it goes a long way to improving the average non-selective receiver, and often will make such a receiver equal to the more selective types. Many Reinartz receivers just lack the little bit more of selectiveness desired to bring in 3LO, while 2BL is transmitting. This wave trap will cut out 2BL, and allow 3LO to come through alright. Some people again say that a wave trap cuts down the volume. This is partly true, but is actually of little or no account, for the average person prefers to listen to one station at a time, even if 10 per cent. of the volume is missing.

Now there are two types of wave traps, one acting as an acceptor, and the other as a rejector. This one works effectively when the trap circuit is tuned to the wavelength of the undesired station, and acts as a barrier to the unwanted signals, yet permitting the signals of other stations to pass freely. It is not a complicated arrangement, it is extremely simple, very few parts being required in its construction.

The circuit used is reproduced here, and its simplicity must be noted. The coil L1 is a home-made coil, with tappings to allow for auto-coupling. The whole coil is tuned with a variable condenser of 0005 mfd. capacity. A1 and A2 are the aerial terminals, being the terminal to which the aerial lead in is attached, and A2 is that terminal which is joined to the aerial

terminal of the receiver itself. From A1 there is a flexible lead (denoted by the arrow point) to which is joined an ordinary battery clip, which in turn grips on one of the taps on the coil.

Reference to the drawings shows the general scheme of things. A



wooden baseboard 9 inches long has mounted on it the tapped coil, which is at the back of the board. There is a reason for this, so do it. The upright panel has on it the variable condenser, and the two terminals. Notice that a vernier dial is shown, this being actually a necessity, for the tuning of the wave trap is very sharp.

A secret of success of this wave trap lies in the type of coil, and the gauge of wire used. There are actually forty turns of No. 34 double silk covered wire wound on a three inch diameter Dilacto former, approximately one inch in length. Tapping points are provided in the winding at the eighth, twelfth, sixteenth and twentieth turn. The constructor may please himself on the method adopted by way of tappings. It is always preferable to take the tappings in such a way that a positive connection may be made by means of the clip to the different tappings.

The coil is wound in a very simple manner. Two holes are drilled parallel to one another, each about 1/8 inch from one end. Through these holes are threaded the beginning of the D.S.U. wire, and the winding is commenced and continued until 40 turns are wound, the tappings being provided as previously declared. For the sake of neatness, it will be found advisable to drill a hole through the

LIST OF PARTS FOR WAVE TRAP.

- 1 Dilacto or Hard Rubber Panel, 7 x 6 x 1-8.
- 1 .0005 Advance Little Centralign Condenser.
- 1 Pilot Kilograaf Dial.
- 1 in. length 3in. diam. Dilacto Tubing.
- 40x. No. 34 D.S.C. Wire.
- 2 Terminals.
- 1 Piece of Dilacto, 3 x 1 x 1-8.
- 1 Battery Clip.
- 1 Baseboard, 9 x 3 1/2 x 3/4 in.
- Sundry Screws, etc.

tube and thread the wire through this, making contact with, say, a contact stud or a small terminal. This should happen to each tapping, if preferred, thus ensuring that all four tappings provide an easy yet solid contact. If, of course, it is desired to make simple loops for each tapping, this may be done, but remember that the battery clip must make a good connection to this thin gauge wire. A wise plan is resorted to by giving the winding on this former a coat of shellac, which, besides holding the turns in position, renders them impervious to moisture.

The coil should be mounted on the back of the baseboard, which should also be coated with shellac. A strip of Dilecto 3 inches long by about 1 inch in diameter comes in handy for this. The coil is secured to the baseboard by this strip and two screws. All that now remains to do is to drill the panel to accept the variable condenser and the terminals. The drilling diagram shows how this is done. Remember, at this stage, to provide the catch screw for the vernier dial. Mount the panel apparatus and screw the panel to the baseboard.

The rest is easy. The wiring must be completed. To A1 is joined the flexible lead from A1. To the other end of this flex is connected the battery clip. Approximately 9 inches or so of wire is used for this purpose. Across the whole coil is fixed the variable condenser. The moving plates go to the beginning—that is, the beginning of the eight turns tap. The fixed plates go to the end—that is, the fortieth turn. To the beginning, the first turn joins the terminal known as A2—to the moving plates of the condenser, in fact. Now comes the initial test.

Firstly, without any other connections than those made already test out. Place the wave trap unit in such a way that the coil is close to one of the coils of the receiving set. To this receiving set is at the present joined the aerial and the earth. Tune in to the interfering station—bring it up to the loudest point. Now turn the vernier dial of the wave trap until the interfering station is completely cut out. Try different tappings with the battery clip until this effect is produced. Having reached it, then proceed as follows:—

Join the lead in of the aerial to A1 and connect A2 to the aerial terminal of the receiver—that is to say, insert the wave trap in series with the receiver proper and the aerial. Retune the wave trap circuit. The "silent" point for the local station will be found a few degrees away from where it was found before the aerial was connected. Alter the tapping on

the coil. Retune again. It may be better here. Try it.

Now look for 3LO. Don't worry about the wave trap setting. Have you got them? Good. Now try altering the wave trap setting. This may be better, yet it may not, but still try. It is not? Then come back again to where you were. Next try 4QG. Got them? Good—oh! A good little wave trap, isn't it? Try the other stations now. You'll find them alright. Later on, you will find that the tapping of the wave trap coil will not need to be interfered with after

the best setting is found. This setting depends greatly on the individual characteristics of your own aerial system, which it is hoped never varies.

The actual test proved of great interest. At Marrickville on the Mackness Reflex (2 valves), where a slight interference between 3LO and 2BL was experienced, this was overcome by use of the wave trap, as also was the interference between 2YA, Wellington, N.Z., and 2FC. If it does this there (and it was at this address that the vernier dial proved indispensable), then it will do it most effectively elsewhere. We recommend it.

A MICROPHONE "ON TOUR."

4QG's Outside Transmissions.

"VARIETY is The Spice of Life"
So says an old proverb.

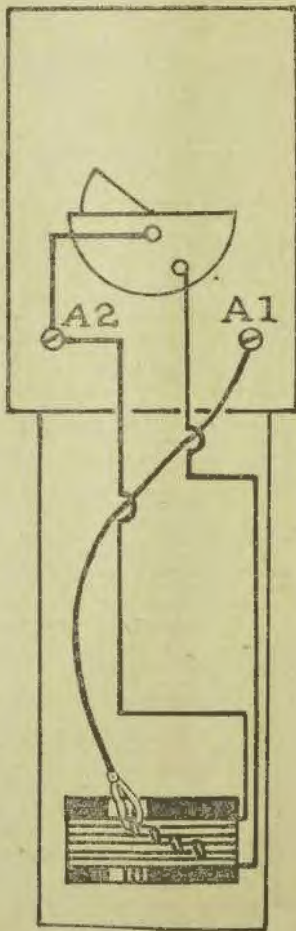
The broadcast station certainly is forced to realise the truth of this. A radio audience is cosmopolitan, and the director of a broadcasting station is therefore always on the lookout for something new, some tit-bit to include in his programme so as to whet the appetite of his invisible audience.

Even in a very large city where theatres and dance halls are numerous the task is no small one. In this respect 4QG is slightly handicapped, for although a few outside shows are available each week, the variety is by no means great. This fact has forced the management of the station to look further afield, and 4QG has done remarkably well.

The station's microphone has been to the bottom of the sea in an attempt to convey to the listeners some idea of the doings of the aquatic world. It has descended to the depths of a coal mine, and has recorded, through the announcer, the description of the bowels of a liner. It has even ascended to the top of one of the station's massive towers, while the chief engineer gave listeners a panoramic description of Brisbane and its environs.

Almost every eisteddfod in Southern Queensland during the past eighteen months has been broadcast. And last, but by no means least, the welcomes extended to almost every notable personage visiting the city during the past eighteen months have been transmitted by radio. These have included the Visit of Their Royal Highnesses, the Duke and Duchess of York, during whose visit the microphone attended no less than ten receptions in their honour; one being the Camp Draft at Beaudesert, a distance of 47 miles.

The "mike" has been as far north as Bundaberg, and as far south as Lismore, and has travelled in all about 7,500 miles, or nearly three times across Australia on the mission of Variety.



There are no rivals to the Philco.

Big Move by 3LO: Radio Education

REMARKABLE to relate in a world where the first impulse of humankind is to covil against every thing, not a single publicly expressed objection has been uttered against the application of 3LO, Melbourne, to be granted licences to broadcast in Tasmania, Western Australia and South Australia.

On the contrary, as soon as the announcement of its intention was made in those other States, letters began to pour into 3LO, Melbourne, expressing gratification at the possibility. No tribute more sincere could have been paid to the station, for inter-State jealousy might have been roused by a fancied slight to stations already existing. No such slight was intended of course.

It is a moot point how far the Government will be prepared to go in admitting the principle of what may be termed "overlapping." As against this point of view, wireless is a Federal matter, under Federal control. State boundaries are artificial, arbitrary. It is a matter of accident that the stations on the air are classified according to the State in whose territory they operate. The principle of continent-wide scope has been admitted in the very suggestion that the funds of one or two successful stations should be partly allocated to boosting up the weaker stations in less populated states.

If it is right to make a forced levy on these successful and efficient stations, it is difficult to see on what grounds the allocation to allow an efficient station to manage the business by following up the forced levy could be refused. One thing is abundantly evident. Listeners all over the States are enthusiastic at the possibility that they may have operating in their midst such a station as 3LO, Melbourne.

Education by Wireless.

THERE are differing opinions on the advisability of including an educational curriculum in the programmes of the Class "A" station. Mr. Tate, the Director of Education in Victoria, has returned from abroad absolutely convinced of the great untapped possibilities of the radio for such purposes. He is late in coming to this view. Three separate times 3LO, Melbourne, has offered to co-operate with the Victorian Education Department, but nothing has been done.

"JOE."

From the wild West Coast of Tasmania the following appreciative message has just been received by Joe Aronson:

"We held an examination in our 'oven' was, with the result that 'you and your Spoon boys are Dux of 3LO. We are pleased with all 'the stumblers and the novices are 'great."

"The little letters 'Joe'
"To rest on when we part,
"Three little simple letters
"Graved on my waiting heart
"Joe."

"We know you and like you
"And while we parted be
"We'll sing your praises
"O'er land and sky and sea
"Joe."

Objections have been made by listeners on the score of dullness. In effect they say "Radio is primarily an entertainment. Certainly you may not please all tastes with the entertainment you provide, but entertainment must be your main, if not your sole, function. If you put educational talks into your programmes to a greater extent than at present you will bore us and we will drop our licences."

That is a serious consideration for the manager of a public utility who has to amuse thousands of people, and who can bore them only in a very limited way.

The solution for this and other difficulties will one day, no doubt, be a double wave-length, on one of which instructional matter can be broadcast, and the other will carry entertainment. Till that happy, and expensive, day dawns, education of children over the air is bound to cause grumbling. Already there is an educational hour in the programmes of 3LO, Melbourne, and this is likely to be extended. There is much need for a campaign to educate the listening public to bear with education.

ONE IRATE old gentleman complains that the broadcast programmes nowadays are not fit for pigs. Now is the time for the broadcasting programmes to supply some that are.

Brother Bill.

WHEN 3LO, Melbourne, substituted talks by "Brother Bill" for those of "Billy Bunny," there were grumbles from many admirers that the glory of 3LO had departed. Brother Bill took his place, but the Bunny "fans" shut their ears to him, charmed he never so wisely. Feeling ran high among a certain section of listeners, who conceived the idea that Billy Bunny was their own peculiar property. One of these, a clergyman, actually sent a petition extensively signed, praying 3LO to reinstate the Bunny. None other could adequately take his place.

Brother Bill thus began his work handicapped by some force of public opinion directed against him. His success has been the more remarkable since it had to make its way against such a force. From far and near come countless tributes to his way with children and grown-ups alike.

Last week came the final, ultimate triumph. This came in the form of a letter from the pro-Bunny petitioning clergyman, solemnly recanting his former opinion and unreservedly placing Brother Bill on a pinnacle. He withdrew the former petition, and in its place sent a numerously-signed document ringing with the praises of Brother Bill, collected near by pen throughout the whole countryside.

I have already related in these notes how the little talks of this contributor to 3LO's programmes have been published in response to many requests. Further surprises have been ordered and are in their turn exhausted. This is popularity with a vengeance. It is a compliment, not to the man alone, but to the perspicacity of the managers of the station keen enough to read Brother Bill's value.

IT IS GENERALLY conceded that a young country is unlikely to produce a really great composer, and America needed three hundred years of history to produce the nearest to a great composer in the person of McDowell. The works of this greatest of American-born musical figures contain many charming examples of the romantic or suggestive school, and his "Polonaise" for pianoforte to be broadcast by station 4QG from the Tivoli Theatre, Ipswich, on November 29th, should be of interest to listeners. Miss V. Driver will be the soloist.

BROADCASTING from OVERSEAS

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1	Polished Hard Rubber panel, 18 x 7 x 3/16	6	6	1	Sangamo Grid Condenser and a. Leak	4	3	
1	Karas Orthometric S.L.F. Condenser, .00014	32	9	1	Radiokes R.F. Choke	8	6	
1	Karas Orthometric S.L.F. Condenser, .00025	32	9	1	Kelford Antivibration UX Socket	3	0	
1	PCJJ. 3-coil Plug-in Tuner and Stand	25	0	1	Philmore 30 ohms. Super Rheostat	2	6	
2	Karas Micrometric Vernier Dials, 66 to 1 (at 17/6)	35	0	2	Engraved Terminals (at 4d.)	0	8	
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SUITABLE DETECTOR VALVES for use in the Short Wave Adaptor.

2 Volt, Mullard PM 1, 13/6; Econotron WD 12, 6/9.

4 Volt, Philips A 415, 20/-; Philips A 409, 13/6.

6 Volt, Econotron Super Detector Valve, 200A, 15/9.

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as described in this issue of Wireless Weekly

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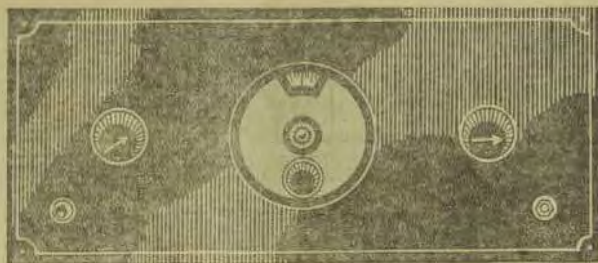
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THE NIGHTHAWK

A Receiver of four valves, one control, stability of operation, and employing neutralised radio frequency. Brings in the interstate stations with remarkable clarity and volume. Inexpensive to build.

THE trend of modern receivers today is towards simplicity of control. The ideal or perhaps the ultimate is the one dial control, but this brings with it many problems, even grave problems, that must be solved. Simplicity is the key-note always, it is something to be strived for, yet it is hard to do this satisfactorily without loss of some description. This loss may be one of selectivity, it may also be one of sensitivity, it may even be both, and it is an accepted fact to-day that a wireless receiver to be efficient cannot sacrifice these qualifications in order that simplicity of control exists.

Here we have some difficulties which must be overcome, or that must be reconciled. If one dial control is to be selected, not only must the physical factors be taken into consideration, but also the electrical factors are necessarily involved. But altogether, the whole is not insurmountable.

One Dial Control.

This week's article deals with a receiver which is essentially one of one dial control. It comprises four valves, one of which functions as a radio frequency valve for bringing in the weak distant stations, a detector valve, necessarily followed by two stages of audio frequency amplification. The constructor at this juncture may look aghast at the front panel view of this excellent receiver, and no doubt may be inclined to ask just why, if this is a one dial control receiver—just why there are other two knobs seen on the front of the panel.

The writer will state emphatically here, that apart from this seeming oversight this receiver is essentially one which is controlled by one dial. The other two knobs naturally serve

their purposes, one as a reaction control, and the other as a balancing arrangement. This balancing arrangement is brought about by virtue of the fact that there is required a two gang condenser for tuning two different circuits, and as it is difficult to arrange two inductances of a given constants over all wavelengths, some form of balancing is necessary.

Reaction.

The other knob, as has been mentioned, controls the reaction. This reaction control is a very necessary feature, as it is required so that maximum gain and power is available. It is of the capacity control type—similar to the Reimartz form of reaction—and is particularly effective. It is well-known that this form of reaction does not interfere with the tuning of the set for any given wavelength, but, the decided increase in volume and in range that it produces, renders its incorporation a worthy feature. This is decidedly what seems to be another control, but in practice it really is not, as like the knob controlling the balancing, this so-called control once set in position, need never be looked at again, nor need be touched, for stations receivable on the usual broadcast band.

The Two Gang Condenser.

Now the two gang condenser is extremely interesting and it will be learned that later on, that although two condensers are ganged together, in such a position, that only one dial is necessary to control them, yet each condenser is a separate unit, one from the other. In other words, these

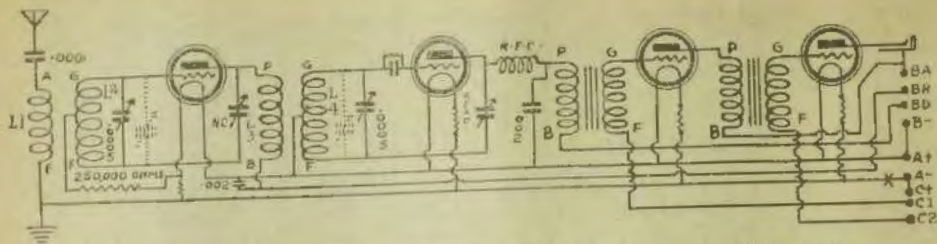
PARTS REQUIRED.

Although the parts listed below and mentioned throughout the article were those actually used by us in the receiver described, it must be pointed out that it is not absolutely essential that they be rigidly adhered to.

Other parts of similar quality and technical values should function quite satisfactorily.

- 1 Diecto or Hard Rubber Panel, 16 x 7 x 3-16.
 - 1 Ormond Double Gang Condenser.
 - 1 Eummo Verrier Dial.
 - 2 3/16" lengths of 3/16" diameter Diecto tubing.
 - 8-w. No. 24 D.S.C. Wire.
 - 2 Advance Midget Condensers.
 - 1 Advance Neutralising Condenser.
 - 1 Battery Switch.
 - 1 S.C. Jack.
 - 1 Radiolux E.F. Choke.
 - 4 Amperitas or Brachstata.
 - 4 Valve Sockets.
 - 2 Peerless A.F. Transformers.
 - 1 Durham 250,000 ohms Leak and Clips.
 - 2 .002 Wetless Condensers.
 - 1 .0025 Wetless Condenser, and Clips.
 - 1 .001 Wetless Condenser, and Clips.
 - 11 Terminals.
 - 1 Terminal Strip.
- Baseboard, Busbar, Screws, etc.

Perfect Reception Every Day Possible with Philco.



condensers are totally insulated from each other. From this it will be understood that in this receiver there are two tuned circuits. The average person will know from this what has already been specified, that there is one stage of radio frequency amplification prior to the detector.

Now, if it is possible, to produce evenly matched tuned circuits in the radio frequency, and in the detector circuit, then a two-gang-condenser renders tuning quite even on all wavelengths. This is brought about by having two coils of a matched inductance value, and these two coils with a ganged condenser, will tune evenly over the wavelengths to which the receiver will respond. But there are certain "safety first" rules to be observed. Probably, in spite of the fact that the condensers are supposed to be evenly matched, there may be one setting which is slightly out, and therefore, in being out, will render uneven tuning. This is not a desirable feature, hence the incorporation of the small balancing condenser on the panel.

Neutralised Radio Frequency.

Now, we come to the question of just what form the radio frequency amplification is advisable. Unquestionably, that type known as the neutralised system of radio frequency is best. It is not a hard matter to devise a means of neutralising the average receiver, in which the radio frequency is employed. The standard system of employing a neutralising condenser is incorporated in this receiver, and produces most interesting results.

Any receiver employing neutralised radio frequency does not create any interference in near-by receivers even although the detector valve is oscillating. This is of extreme importance when seeking the distant station, as it is possible to have the detector valve oscillating, and thereby producing the carrier waves, yet it does not cause any trouble in the aerial circuit itself. It is a distinct advantage over the average form of radio frequency amplification, and as this receiver is one which is modernly efficient, this system of radio fre-

quency amplification has naturally been chosen.

The Circuit.

The circuit diagram shows just the form of circuit used. L1 is the periodic aerial coupling coil, coupled to the secondary or grid coil L2, which is centre tapped for neutralisation purposes. L3, L4, is the radio frequency transformer, and it will be seen that L4, being the tuned circuit of the detector valve employs the Hartley system of reaction. The reaction condenser is a small advance midget condenser, this being ample for the purposes of reaction.

In order to keep the radio frequency energy altogether apart from the audio stages, a radio frequency choke is inserted between the plate of the detector valve and the primary of the first audio transformer. Further, as a means of stabilisation, a 250,000 ohms resistor is inserted between the centre tap of L2 and the A battery negative. This is a distinct advantage, and it is hardly necessary to go into reasons for this in this article. As a further means of by-passing, a .002 fixed condenser is connected between the A positive wire, one side of the R.F. choke. Here, again, is where safety first has been thought of.

No Rheostats.

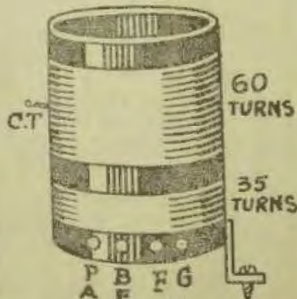
As it is our object to keep as many controls off the front of the panel as is possible, instead of rheostats, Amperites or Brachstatts are used. These little units are useful here, inasmuch as not any one valve in particular is subject of adjustment so that the resistors used satisfy the purposes of filament control, and as they are not variable, and off the panel, damaged by meddling fingers will not occur. Each particular valve has an Amperite or Brachstat suitable, and it is only a matter of consulting your dealer in order to obtain the correct types.

Contrary to what may seem so at first sight, this receiver is not expensive to build. The coils themselves may be wound at home very cheaply, and the constructor may choose just what apparatus he so desires to build this set. The list appended shows the actual parts used in the receiver, and while it is not strictly necessary to adhere to these brands, it is naturally advisable to stick to the values specified in order that best results will accrue.

The construction calls for very little skill, and only the average commonsense. A few household tools are all that is required, and a little patience and perseverance will produce a really wonderful receiver. The coils should be wound first.

Coil Specifications.

Both coils are wound exactly similar to one another. Each comprises primary and secondary, the primary in each instance being 35 turns of No. 24 gauge, D.S.C. wire, and the secondary, 60 turns of the same gauge wire tapped at the thirtieth turn in each instance. To secure the beginnings and the ends of these windings two small holes should be drilled through which the wire is threaded and fixed securely. A distance of 3/8 of an inch separates the primary from the secondary in each instance. In order to keep all the wiring low and neat all five connections in each coil should be taken to a contact stud fixed at the bottom, of the former,



there being five for each former, two for the primary and three for the secondary.

Panel Layout.

The next thing to do is to prepare the panel, by marking out and drilling the required holes to accept the different parts, which are mounted thereon. Don't forget to allow for the fixing screws for the variable condenser, which is ganged, and also for the catch screw which is required to keep the vernier dial in position. The battery switch and the jack, each require only one hole for fixing, the position of all the holes being clearly seen in the drawing depicting the panel layout. Mount the necessary components and fix the panel in position to the baseboard.

Baseboard Layout.

Now, attention should be paid to the dressing of the baseboard. This is somewhat deeper than is usual with the average receiver, but has been chosen of such dimensions for a particular reason. The plan view reveals that the radio frequency components are kept on one side of the baseboard, and the audio frequency parts on the other side of the baseboard. Thus, interaction is overcome. This baseboard should be given a coat of shellac varnish and the various components laid out as suggested by the drawings. It is noted that each coil former is fitted with a small bracket so that it may be secured to the baseboard. Short wood screws are necessary for this purpose, so don't forget to lay in a supply of different sizes of wood screws before attempting to assemble the receiver.

Wiring.

Follow out the layout as shown, then commence the wiring. The wiring diagram is sufficiently explicit for the average person to follow, and when taken in conjunction with the circuit diagram no difficulty should be met with in the wiring. Right angled busbar wiring or soft spaghetti covered point to point wiring may be chosen as well, this depending on the taste of the constructor himself. Leave till the very last moment the connecting up of the midget balancing condenser on the panel, as this may have to be attached to the condenser, which tunes the first grid coil, or perhaps to the second grid coil, this depending on the particular circumstance of the aerial load. When everything is checked off and found to be correct, even with the small compensating condenser unconnected, the receiver may be tested out under actual conditions of reception. It is therefore necessary to select the most suitable valves for the purpose.

Valves.

Almost any good valve will give good results, but attention should be drawn to the special purpose valves at present available. For the high frequency stage a valve having a high impedance around the regions of 20,000 to 30,000 ohms is to be preferred. A Cosor 6 volt red band H.F. valve functioned particularly well in this radio frequency stage, and a Mullard PM5, for a detector, and for the first audio seemed best followed by a Mullard PM256 for the last stage. This combination gave a most wonderful volume, combined with a very high degree of selectivity, and, therefore, one is pardoned for specifying these valves in particular. It is quite possible that there are other equally suitable valves, but the constructor can determine this for himself.

Battery Voltage.

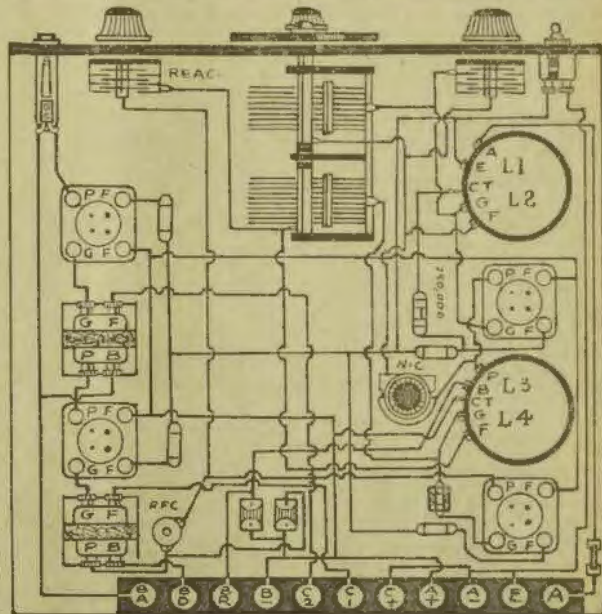
The matter of battery voltage is one which must be considered in conjunction with the particular valves proposed to be used. With each valve the maker provides a slip showing the recommended voltages for different

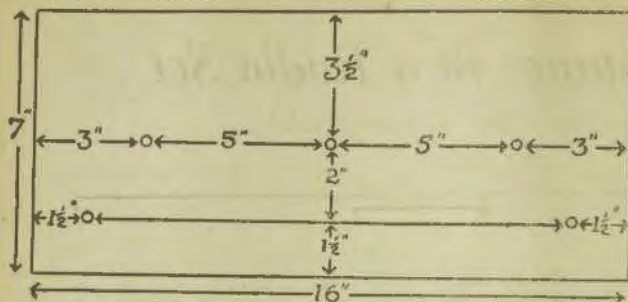
purposes, and these instructions should be followed within reasonable limits. However, with the valves above mentioned, it was found that with 60 volts and the radio frequency valve 45 volts in the detector and 90 on the audio stages, excellent results were the order of the day.

With Radiolux valves, and those were tried—it is difficult to determine which combination suits best—the voltages of the radio frequency stage was built up to 90 just the same as with the audio stages, but here general purpose Radiolux UX201A valves were used instead of the special purpose type above mentioned. Still determine for yourself by experiment which voltages give the best results, and don't treat this matter lightly, as it plays a most important part, not only in this receiver, but in every other receiver so far designed.

Testing.

Hook on the aerial and earth, plug in the loud speaker, do this after having inserted your valves in their respective sockets, and connect up the batteries correctly. Now tune into the local station by turning the





condenser will be needed across the R.F. portion of the gang condenser.

Test Report.

Little more need be said about this excellent receiver, beyond sincerely recommending it to everyone who is seeking a really high-grade interstate receiver, which will repay the reasonably small outlay. At Murrumbidgee on a short aerial, approximately 50 feet long, all the Interstate A class stations were nicely received at loud-speaker strength. 3AR was received at a far greater strength than was 5CL, but later on in the evening there was little to choose between these two stations. Needless to say, 3LO and 4QC made their presence known, the latter station, in fact, proving much superior in volume in the earlier part of the evening than did 3LO, but for some reason or other there was a slight amount of distortion from Brisbane. That this was no fault of the receiver just described was proved by trying out on the Marco Four, and the good old Solydne. Perhaps, it was just a passing phase with 4QC itself.

Just a last word to presuppose a question which may be asked by many. The Ormond condenser mentioned is one in which each separate portion is electrically separated so that this means that if the constructor desires to gang two Emmeo or Advance condensers of the right capacity or two of any other type of gangable condensers, then attention should be paid to the necessity of using a short piece of Dilector rod and not the usual brass spindle or rod often used for this purpose. This is of extreme importance, and should not be overlooked under any circumstances.

Since the previous portion of this article was written, this receiver was subjected to further tests, with a Mayolian B battery eliminator as the power supply. Results were truly wonderful, and when the different voltages were measured, it was found that the R.F. valve had 80 volts, the detector 40 volts, and both audio valves 120 volts, with the C battery undisturbed. This may be of passing interest, hence its inclusion here. Go ahead and build your receiver now.

tuning dial until it is heard. Leave the midjet reaction condenser with the moving plates right out of the fixed plates. Bring this local station up to its loudest point, and then attend to the balancing.

Balancing.

Loosen the set screw in the ebonite tube, which couples the two variable condensers together, and adjust the two halves separately by means of the rod provided for the purpose, and with the dial controlling the condenser nearest to the panel until the local station is heard at its greatest strength. Leave this now, and neutralise the radio frequency valve.

Neutralising.

Remove the Amperite governing the filament current of this valve, noting that the reaction condenser is set at zero. It will now be found that although the local station is still receivable, the detector valve will oscillate. If this is extremely violent, then reduce the B battery voltage of the detector valve until this oscillation ceases. Now carefully rotate the neutralising condenser mounted on the baseboard until the local station either disappears altogether or becomes particularly weak. This should occur at one setting only of the neutralising condenser. The exact setting can only be determined by experiment, which is only a matter of a few moments really.

Grid Bias.

Next pay attention to the grid bias battery. Re-insert the Amperite governing the radio frequency valve, and make different adjustment on the C battery until the purest signals are obtained. Take each audio valve one after the other, for this grid biasing adjustment, which is another thing to be determined after a few moments' trial. The amount of grid bias required depends on the actual valves used in the audio stages, but as an

indication it is worth noting that with the Radlokes valves using 50 volts on the plates, only 44 volts grid bias or C battery was required. Even with the Mullard PM256, in the last stage, and mark you, this is a power valve, only 74 volts grid bias was found necessary. These indications are just by the way of a slight assistance, so determine for yourself just what is really required.

Final Balancing.

At this stage comes the final stage of balancing the double gang condenser. This is done by means of the small midjet condenser on the panel. Tune in to one of the B class stations on the lower wave band, such as 2UW or 2UE, or perhaps, do as the writer actually found to be the best, tune in to 3AR Melbourne on the higher wave band. This, at this stage, may entail the use of reaction to such an extent that the detector valve oscillates. Don't be afraid of this, as there will be no interference produced to upset your neighbours, on account of the fact that neutralising should have been effected beforehand. Having picked up the carrier wave, that portion of the gang condenser which tunes the R.F. circuit should be adjusted till the carrier is heard at its loudest. It should then be removed by reducing reaction and the gang condenser readjusted again, so that the transmission is tuned in as strongly as possible.

Next, turn the gang condenser until one of the lower wave band stations, such as the two aforementioned N.S.W. low wave stations. Try if the R.F. portion of the gang condenser needs readjustment more than a few degrees. If it is found that it needs its capacity decreasing, then connect the compensating condenser across the detector portion of the condenser. If the contrary is true, then shunt the midjet panel condenser across the R.F. section of the gang condenser. Still, in nine cases out of ten, it will be found that the midjet balancing

Use of Resistance in a Radio Set

Properly Applied, the Effect is Indispensable.

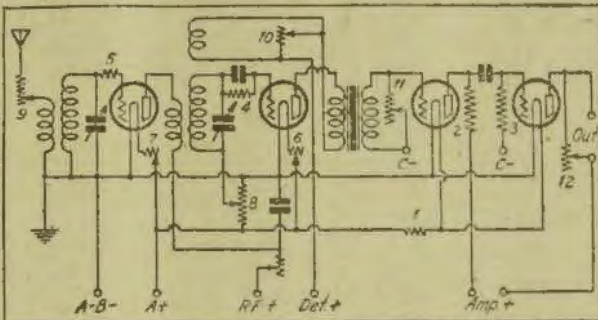
By K. B. HUMPHREY

THERE are several different kinds of resistance in the radio receiver, but in this particular article we are concerned only with the ohmic resistance in the circuit and not with the resistance offered in an electric circuit in which inductance and capacity are acted upon by alternating currents. The resistances in a radio receiver may be divided into two general classes, the fixed and the variable. The fixed resistance units may be divided into groups; there is the fixed ballast resistance used for controlling the filament current, the resistors used both in the plate and grid circuits of certain types of audio coupling, the extremely high resistances used as grid leaks, the many fixed resistances used in eliminator work, the grid circuit resistance used for damping out oscillation in tuned radio frequency circuits and many others.

In order to illustrate the various uses of resistance units in the radio circuit a diagram of a circuit is given showing the different positions of the resistances in an ordinary hookup of the tuned radio frequency type with a regenerative detector. Of course, it must be understood that there are other applications where a fixed or variable resistance can be used, but it is thought that the idea will be expressed in the ones illustrated even if the exact connection is not given as used in some specific instance.

No. 1 of the fixed resistances illustrates the position of a resistance unit when used to control the filament current of the two audio tubes shown. This idea can be applied to any or all of the tubes and by using the proper value they work effectively with from one up to any number of valves. This resistance may be of ordinary wire and need not provide for regulation over widely varying supply voltages. The ordinary ballast resistance, which does apply a certain amount of regulatory action, that is, when the supply voltage is increased the extra current flowing heats up the wire and increases the resistance, thus decreasing the current, is in reality a variable resistance. The variation is automatic, however, and the position in the circuit is the same as indicated at No. 1.

No. 2 and No. 3 are fixed resistors used in resistance coupling units. No. 2 is a resistance introduced directly in the plate lead of the tube and has



Circuit diagram showing where various resistances are employed.

a value of from 80,000 to 100,000 ohms. Its function is to provide a variation in the current due to fluctuations in the tube plate circuit and impressing them directly on the fixed condenser and thence to the grid of the next tube. No. 3 is a grid leak, but is of lower value than those used in the detector circuit. When three stages are used the values run 1 megohm in the first stage, $\frac{1}{2}$ megohm in the second and $\frac{1}{4}$ megohm in the last stage. These values are by no means critical and many experimenters have ideas of their own as to what these values should be. The higher the value the more volume, but there is a limit, due to the fact that the tube will block if too high a value is used. It is necessary to provide a path from the grid to the filament in order that a charge will not accumulate on the grid and stop the amplifying action of the valve. There are other combinations where a choke coil is used in place of the No. 2 resistor and a grid leak as shown at No. 3.

The ordinary grid leak is shown at 4 in the diagram and is from 1 megohm up to 8 megohms. In some cases this is made variable, but for ordinary work this is not at all necessary and when once adjusted to the valve used may be left alone. The function is much the same in the detector as in the position mentioned in the preceding paragraph. That is, it prevents the pling up of a negative charge on the grid and blocking of the tube. The small condenser would

isolate the grid from the rest of the circuit if it were not for the leak. In some cases the grid leak is connected directly from grid to the positive filament. There is no particular difference in the action.

No. 5 shows a fixed resistance placed in the grid circuit for the purpose of damping out oscillation. When a tube is in oscillation, there is a certain amount of current flowing in the grid and this resistance acts against it, while in the course of ordinary operation there is merely a voltage variation in the circuit and little current. Therefore, when the tube starts to oscillate the resistance absorbs the current and the tube stops oscillating. The action is entirely automatic.

There are a number of positions for the use of fixed resistors in eliminator circuits, which will not be gone into, as this is an accessory and not part of the receiver itself. Also when using the alternating current for filament supply there are numerous small fixed resistances used for balancing up the different circuits.

Variable Resistances.

The field of the variable resistance is somewhat larger than the fixed resistance and in practically every case where a fixed resistance is used one of the variable type may replace it. For instance, in the case of the ballast resistance. Rheostats are

Data on the Proper Thickness for Shields in Radio Circuits.

AMONG the radio novelties exhibited at the last New York Radio show were individual aluminium shields designed by L. M. Cockaday and the engineers of the Aluminium Company of America to prevent feed-back and interference between the parts of a radio receiver. Metallic shielding of receivers is the order of the day, but it is not always necessary to surround the set, or parts of it, with continuous metal boxes. In some circuits mere walls of metal, inserted at the proper places, may serve well enough to prevent undesirable interaction.

The shields under discussion in this article are of this type. They are made of virgin sheet aluminium, six inches long and four inches high. The metal is eighty-one mils thick, this thickness having been found by tests to be sufficient for adequate shielding, while using a minimum amount of metal. Each shield carries a bent-over flange, drilled for screws,

which permits easy attachment of the shield to the baseboard. The shields are strong enough to stand upright without difficulty. Slots permit the passage of wires which must traverse the shields. The shields may be used in any type of circuit or any radio apparatus where partial shielding is necessary.

It is frequently imagined that adequate shielding can be obtained by surrounding the parts of a radio receiver with tinfoil or other thin metal, often glued to the inside of the cabinet. To demonstrate that this is not the case a special oscillator with which the effectiveness of any type and thickness of radio shield may be tested has been developed by the Aluminium Company. So vividly does the oscillator show the behavior of the radio waves that they can almost be seen to pass across between two coils when no shield is interposed and to be stopped when a shield of thick aluminium is inserted.

This matter of the acoustics of rooms, necessary to get the best quality from radio reproduction, is very little known, even to experts. Rules are difficult to formulate, but, in a very general way, it may be said that absorbing material, like a heavy curtain, placed behind the loud speaker, is usually a good thing, the other side of the room being left relatively bare, so that the sound waves will be well reflected from it. The exact best arrangement can be determined only by trial.

What I am urging, then, as the ideal city receiver, is one which concentrates on quality, including its own accessories, so that all will be matched in impedance and using a circuit such that there is real quality there to be let through. This must be combined, somehow, with high selectivity, so that the many local stations which crowd on each other's heels can be brought in or kept out, one by one, as desired. Third, there must be no need of a large or fine antenna. No antenna at all is better still, for then the static and electrical interference will be at a minimum.

Can such a receiver be built? Certainly. I have one myself. The only difficulty is in making it cheaply. That is the problem for the radio designer; to make a receiver which

has these necessary city qualities and which can be sold at a low price. That, like the famous "good five-cent cigar," is undoubtedly something that the country needs.

Two small coils a few inches apart are connected, one to an oscillating circuit, the other to a sensitive meter. When no shielding is used the radio impulses pass unimpeded from one of these coils to the other one. The meter shows a large deflection. There is a holder, however, into which metal shields can be inserted, one after the other, between the two coils. When a shield of thick metal is inserted the reading of the meter drops almost to zero. The thick metal entirely prevents the passage of the radio field through it.

With this metal, on the other hand, the meter deflection is maintained at almost the same value as when no shield is there, thus showing that a large fraction of the radio impulses will pass through metal which is too thin or too low in electrical conductivity. The great advantage of aluminium for radio shielding is that it is highly conductive, having the highest electrical conductivity, weight for weight, of any known metal or alloy. Its extremely light weight is a great advantage also for radio use. An adequate set of aluminium shields weighs only a fraction of the weight of a similarly effective set made of other metals.

With the oscillator it is possible to demonstrate that the necessary thing in a good radio shield is an electrical conductivity high enough to permit eddy currents created by the radio field to flow in the metal of the shield with little resistance and with small formation of heat. When the shielding metal is too thin, for example, with sheets of tinfoil or of other metal foils, a shield may actually become hot when placed in the field of the oscillator. This heating still further decreases the electrical conductivity of the metal and makes the shield even less effective than it was before.

(Continued from previous page)

more commonly used for providing filament control. No. 6 controls the detector tube and No. 7 the radio frequency amplifier tube. If a soft detector tube is used the proper filament current is essential for the best operation and usually the ballast does not give as good results. Then, too, in the radio frequency tube the Rheostat acts as a volume control, and is used as such in many receivers.

The rheostat is of the low resistance type, while there has come on the market lately many types of variable resistors of high resistance running up as high as 700,000 ohms. It may be seen that they may be substituted for almost any type except for the detector grid leak. Others run even higher than this and may be used in the detector circuit. No. 8 is not of the extremely high resistance type and not as low as the rheostat. This is known as a potentiometer and has a resistance of from 200 to 800 ohms. Provision is made for tapping in at any point on the resistance by means of a movable arm. It is connected as shown, and regulates the grid bias of the tube. It is also used in some cases to control the bias on the radio frequency tubes.

You can Recharge a Philco for a few pence.

Resistors Simplify Filament's Control

Removable Cartridges take Place of Several Rheostats.

By Arthur H. Lynch.

ONE of the most noticeable trends in the development of the radio art has been the determined efforts that have been made to reduce the number of controls to operate a receiver. This trend has also brought in its wake a growing tendency to standardize equipment so that new developments can be incorporated in a receiver without much effort or expense.

The standardization of valve bases which permitted easy interchangeability of valves and the appearance of the standard UX type sockets were great steps in this direction. With a set equipped with such sockets, new valves could easily be inserted in a receiver to bring it up to date provided the rheostats were changed to suit the characteristics of the valves.

Changing of rheostats is seldom easy or practical.

When filament regulation is obtained through the use of filament controls it is an easy matter to substitute new resistance elements to take the place of the old ones, and the use of any valve or combination of valves is possible by the use of equalizers of the proper sizes.

It is easy to understand the need for hand rheostat control in the old days when the 200 type of "soft" detector valves was popular. These valves required critical adjustment of the voltage applied across the filament terminals of the valve. The new valves of the 200-A and 201-A types, however, do not require such critical control.

It can easily be seen that a slight change of filament voltage in the old 200 type valve causes a considerable difference in relative audibility or sensitivity. Even as slight a change as two-tenths of a volt, from 4.7 down to 4.5 volts, causes a drop in relative audibility of from 70 points down to 22½ points.

With the new valves of the 201-A type all this has been changed. Here critical adjustment of the filament voltage is not required, as can be seen from the fact that the relative audibility or sensitivity remains practically the same for filament voltages from 3.75 to 5 volts.

A fixed resistance that will cut down the voltage of a fully charged

"A" battery to 5 volts for a 5 volt valve is all that is necessary to act as a safety valve to prevent excess voltage from being applied to the filament terminals.

As the battery discharges the voltage decreases, but the slightly decreased voltage across the filament terminals has practically no effect on the operation of the tube, because, regardless of the drop in voltage in the battery and the additional drop through the resistance, the voltage is still more than the minimum of 3.75 volts required for operation of the valve filament at full efficiency.

The best resistance element to use is made of a special resistance alloy encased in a glass case with metal end pieces. This cartridge can be installed in a suitable mounting so that the resistance elements can be interchanged as required for different types and combinations of tubes.

Volume control can be obtained by using a 5 to 10 ohm rheostat in series with the equalizer which controls the radio frequency valves or by any of the other now common methods of volume control using variable high resistances.

A Tasmanian Holiday.

TASMANIA has figured largely in 3LO, Melbourne's, arrangements. It will be remembered that it was the honeymoon locale of the September Bride. Now it has been chosen as the place for a two weeks' holiday for some lucky 3LO, Melbourne, listener.

A competition that calls for the use of no gray matter is being arranged. The sole qualification is that the successful aspirant is a licence-holder, either by himself or his family (and "his" includes "her" in this case). Contestants do nothing but wait. Chance does all the work.

All you do, if you wish to enter, is to send your name and address and licence number of your wireless set, or that on which you habitually listen in to 3LO, Melbourne.

Thousands of licensees will prove themselves to this intellectual task. Then, on a certain date early in De-

ember, all the applications are heaped together, and one is drawn at random. The applicant whose name is on the letter will be packed off to Appaliland. Simple, isn't it? It doesn't matter whether it is man, woman, or child. Competitors, however, must endorse their envelopes, "Spend Christmas in Tasmania."

More Competitions

AT least two new and very novel competitions are under consideration by 3LO, Melbourne. One is meant to bring out into the open the shy, long-haired woman. It is believed that somewhere hidden away, whether in the wilds of Fitzroy, or the secret places of Gippsland, may be found still long-haired women hiding their tresses from the stare of the barber. The time has come when long hair is regaining its value owing to its rarity. Before long hair actually becomes a museum piece, 3LO, Melbourne, wants to locate it. To find and women lucky enough to possess it are to be offered an inducement to permit it to be photographed, classified, and documented. I have no loss of the conditions that will govern this contest. I simply tell that the project is in the hair, so to speak.

Another contest also has to do with the head, but with its contents, rather than with its adornment.

Has the study of poetry declined? Do modern women know anything of Elizabeth Barrett Browning, or do they think it is a new preparation for making gray? Does Byron mean anything to them? Is Wordsworth significant?

Many people who despise this generation have said that they read nothing but Michael Arlen and Elmer Glyn. 3LO, Melbourne, wants to find out. Some of the finest English poets, who used to be household words, will be dredged for their best-known quotations.

These will be read by skilled elocutionists over the air, and the person who, over a series of readings, comes closest to the correct placing of the quotations, will get a valuable prize.

You can Recharge a Philco for a few pence.

Radio Books Reviewed

The Admiralty Handbook of Wireless Telegraphy.

The Thermionic Valve.

The Four Electrode Valve.

By Fred Goddard.

By Fred Goddard.

MESSRS. Turner and Henderson, Ltd., of 10-13 Hunter-Street, Sydney, have sent along to us a copy of the Admiralty Handbook of Wireless Telegraphy. This excellent publication is issued by the Lord Commissioners of the Admiralty, London, and has been prepared by Captain W. G. H. Miles, R.N., under the supervision of the Director of the Signal Department. It does not appear as an annual, but is published at irregular intervals, each new publication superseding the previous one. Primarily intended for the information and guidance of officers and men of His Majesty's Fleet, this handbook is one which no genuine experimenter should really be without.

Containing as it does 19 chapters, crammed full of information, it deals with every section of wireless and is written in such a manner that it can be clearly understood. There are approximately 370 line drawings, illustrated various points referred to in the book, which is printed on excellent paper, and well bound in cloth.

Among the subjects dealt with, there is electricity and magnetism, the Electron Theory, Ionization, and so on. There is a long chapter on Inductance and Capacity, another one on alternating currents, still more on continuous waves, receiving circuits—in which the subject of selectivity is discussed at a great length—Thermionic valves and their action, amplifiers, transmitting valves and transmitting circuits, radio telephony, wave meters and so on.

All the subjects are dealt with in a most comprehensive manner, and in addition there are many tables of which the average enthusiast will find an everyday use. The person who wishes to make a study of this vast subject of wireless cannot do better than obtain a copy of this excellent publication, which is the first of its type that has come into our hands. If the reader is intending to become a transmitter, then there is more than ample material in it more than ample material in it for a handbook to give him a vast knowledge for the A.O.P.' examination. From Messrs. Turner and Henderson, Ltd., we understand that the price is 7/6, and excellent value is given.

We have just received this excellent little publication for review. The author is a man who is fully conversant with this subject, and he deals with it from a very simple point of view. The book is free from involved technicalities and is copiously illustrated, a large number of circuit diagrams, ranging from simple valves to super-heterodynes, being included, with constructive details.

The construction, action and control of valves is dealt with at length; the first chapter, in fact, deals with what a valve is, and is treated in such a manner that even the wisest school-boy reading this first chapter only would quickly get splendid working knowledge of valves. The other chapters in the book are written in an exactly similar strain, the whole from cover to cover being so simply explained, that it is a book for every wireless enthusiast, irrespective of just how little or how much he knows. One very interesting part is really worth the price of the book in itself and this portion deals with how to read a valve curve. This usually involved subject is so simply explained and illustrated that it is simply a matter of five or six minutes' reading to grasp the essentials. Considering the great number of valves there are in use to-day, it is unquestionably a fact that the general standard of reception would be much higher than it is, if operators knew more of their valves, and the author of this book has succeeded in dealing with this subject in such a manner that he will appeal to everyone who owns a valve receiver. Further than this, there is furnished a fund of information hitherto available only to advance wireless experimenters.

Our copy has been received direct from the publishers, Messrs. Mills and Boon, Ltd., 49 Rupert-street, London. We understand that the price will be round about 5/6.

AN OSCILLATING WAVE-METER

I have Father's "So, coming to Helen and I the new radio was only a blip. Here I find my daughter in your arms with her hand on your shoulder."

Confused Sator: "Er—no, sir. You see I was simply getting her wave-length" and he fondly pressed her new permanent wave.

This is another splendidly written book by the same author as the one referred to above. These little known Four Electrode Valves are dealt with in a manner not before seen anywhere. The inside possibilities of the wireless valve which has four electrodes, instead of the three incorporated in the ordinary type are intriguing, the minds of wireless experimenters and constructors more than ever. The remarkable efficiency of this valve, its capacity for liberal amplification effects with very low high-tension voltage, and its adaptability to circuits identical to its predecessor, are features combining to make it unique for wireless reception purposes.

This book, written by Mr. Fred Goddard—a British engineer, who has had a long and intimate experience of all types of valves—is the first dealing exclusively with the four electrode valves, and those who desire to know more of these valves and how to get the best out of them, will find the facts set out in non-technical language of inestimable value.

The volume contains, with explanatory notes over fifty circuit diagrams, ranging from single to three-valve circuits, including a number of circuits dispensing with a separate high-tension battery.

Like "The Thermionic Valve," this excellent publication is printed on very good paper, and is cloth bound. There are over 64 diagrams, and circuits, from the simplest to the more complicated. Almost every known receiver has been discussed and described with relation to the four electrode valve, all circuits are particularly well drawn, and the most minute detail is entered into.

Certainly, this is the best book of its class which has so far been published, and great credit is due to Mr. Goddard, for dealing with it in such a comprehensive manner as he has done in this book. Messrs. Mills and Boon, Ltd., of London, forwarded us our copy, which will sell at a similar price to "The Thermionic Valve."

There is no "Just-as-good" as Burgess.

Summer-time is Portable-time.

Build the simple three valve portable radio receiver described in the November issue of "Radio" to take with you when you go holidaying this Xmas. Complete in case with loud-speaker, frame aerial, and battery compartment, it can be built at little expense.

Other Features include:

Short-Wave Research Work. By A. S. McDonald, A.I.M.E., in Collaboration with F. W. Larkins.

What I Would Do if I Had My Studio. By Jack Win.

What Chance Has Broadcasting of Influencing Language? By Joan Mackness.

Prominent Personalities at 2FC and 3LO in Caricature.

Digest of World-Wide Radio News.

An 8-Valve Super-Heterodyne.

The Browning-Drake Four-Valve Receiver. By H. Lewis.

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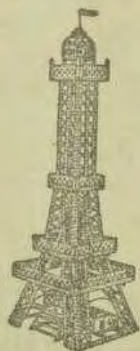


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BROADCASTING PROGRAMMES

For the COMING WEEK

Friday, Nov. 25

2FC, SYDNEY.

Farmer's Broadcasting Service.

Wave Length, 442 Metres.

EARLY MORNING SESSION.

- 7 a.m.—"Big Ben" and announcements.
 7.5 a.m.—Studio music.
 7.15 a.m.—Country session. Official weather forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, mail services.
 7.25 a.m.—Investment market, mining share market, metal quotations.
 7.35 a.m.—Wool sales, breadstuffs markets, inter-Island markets, produce markets.
 7.45 a.m.—"Sydney Morning Herald" summary.
 7.50 a.m.—Studio music.
 8 a.m.—"Big Ben." Close down.

MORNING SESSION.

- 10 a.m.—"Big Ben" and announcements.
 10.5 a.m.—Studio music.
 10.15 a.m.—"Sydney Morning Herald" news service.
 10.30 a.m.—Studio music.
 10.35 a.m.—A reading.
 10.45 a.m.—Studio music.
 11 a.m.—"Big Ben." Studio music.
 11.5 a.m.—A.P.A. and Reuter's cable services.
 11.10 a.m.—Studio music.
 11.15 a.m.—A talk on home cooking and recipes by Miss Ruth Forst.
 11.30 a.m.—Close down.

MIDDAY SESSION.

- 12 noon—"Big Ben" and announcements.
 12.5 p.m.—Stock Exchange first call.
 1.25 p.m.—Official weather forecast, rainfall.
 1.25 p.m.—Studio music.
 1.16 p.m.—Summary of "Sydney Morning Herald" news service. Rapid wireless news.
 1.25 p.m.—Studio music.
 1.40 p.m.—CLARE FOTHERGILL, dramatic soprano:
 "Little Orphan Coon" (Wood).
 1.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 1.45 p.m.—Studio music.
 1.50 p.m.—"Big Ben" and weather intelligence.
 1.55 p.m.—"Evening News" midday news service.
 Producers' Distributing Society's report.
 1.55 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 1.58 p.m.—Stock Exchange, second call.
 1.59 p.m.—Studio music.
 1.40 p.m.—CLARE FOTHERGILL, dramatic soprano:
 "I heard you singing" (Eric Coates).
 1.45 p.m.—Studio music.
 1.50 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 3.0 p.m.—"Big Ben" and Announcements.
 3.1 p.m.—Genevieve Spigel, Soprano:
 "My Mother Hides My Hair My Hair."
 3.7 p.m.—A Pacific Radio Reproduction.
 3.12 p.m.—Erid King, Contralto:
 "Violet" (Malinow).
 3.16 p.m.—A Reading.
 3.30 p.m.—Eileen Judkins, Soprano:
 "My Gentle Child" (Ode Opera).
 3.33 p.m.—Studio Music.
 3.40 p.m.—From Farmer's Tea Rooms: New Ballet, Music:
 "Love's Whimper" (Willsie).
 3.45 p.m.—The Oak Hall Instrumental Trio.
 3.55 p.m.—Studio Music.
 4.0 p.m.—From Farmer's Tea Rooms: Florence Grant, Soprano:
 "Sweet Fruits Maiden" (Gosse).
 4.4 p.m.—The Oak Hall Instrumental Trio.
 4.10 p.m.—From the Studio: Genevieve Spigel, Soprano:
 "Chanson de Florian" (Goward).
 4.20 p.m.—From Farmer's Tea Rooms: New Ballet, Music:
 "Love is Just a Little Bit of Heaven" (Naer).
 4.25 p.m.—The Oak Hall Instrumental Trio.
 4.35 p.m.—From the Studio: Eileen Judkins, Soprano:
 "Awake, Awake" (Clarke).
 4.40 p.m.—From Farmer's Tea Rooms: Florence Grant, Soprano:
 "Over the Dromedary Sea" (Phillips).
 4.45 p.m.—From the Studio: Stock Exchange, third call.
 4.47 p.m.—Studio Music.
 4.50 p.m.—Erid King, Contralto:
 "O, Lovely Night" (Ronald).
 4.54 p.m.—Studio Music.
 4.59 p.m.—"Big Ben." Close Down.

EARLY EVENING SESSION.

- 5.40 p.m.—The Chimes of 2FC.
 5.45 p.m.—The "Hello Man" Talks to the

NEW SOUTH WALES "A" and "E" CLASS BROADCASTING STATIONS.

- 2FC—Farmer's Broadcasting Station, 1.16, Sydney, wave-length 442 metres, power 500 watts.
 2BL—Broadcasters' Ltd., Sydney, wave-length 243 metres, power 4000 watts.
 2GB—Theosophical Broadcasting Station, 1.16, Sydney, wave-length 314 metres, power 3000 watts.
 2KY—Traders and Labor Council, Sydney, wave-length 290 metres, power 500 watts.
 2UW—Ode Sander, Sydney, wave-length 267 metres, power 500 watts.
 2MK—Mackler Bros., Bathurst, wave-length 275 metres, power 100 watts.
 2UE—Electrical Utilities Supply Co., Sydney, wave-length 293 metres, power 250 watts.
 2BE—Bergin Electric Co., Sydney, wave-length 316 metres, 100 watts.
 2UD—E. A. Donohoe, Newcastle, wave-length 254 metres, 100 watts.

Evening Session.

- 6.30 a.m.—Story Time for the Young Folk.
 6.40 p.m.—Studio Music.
 7 a.m.—"Big Ben." The 2FC Racing Commentator will give the latest racing information.
 7.10 p.m.—Dalrymple's Market Reports (Wool, Wheat and Stock).
 7.15 p.m.—Fruit and Vegetable Markets.
 7.20 a.m.—Weather and Shipping News.
 7.25 p.m.—"Evening News" Late News for the

NIGHT SESSION.

- 7.40 p.m.—Programme Appearances.
 7.45 p.m.—Celebrating Reminiscences prepared by Mr. Frederick Harper.
 8.0 p.m.—"Big Ben" (From the Lyric Theatre, London Theatre: Jimmy Blair's Jazz Band).
 8.15 p.m.—From the Studio: Cyril Monk, Violinist:
 (a) "Vision" (Drift).
 (b) "Bibulous Dance" (Noyak).
 8.24 p.m.—Muriel O'Malley, Contralto:
 (a) "My Mountain" (Gardiner).
 (b) "Juno" (Grove Guller).
 8.30 p.m.—"How is John's Play" by Mr. S. H. Bowden.
 8.40 p.m.—Norman McLennan, Bassist:
 (a) "The Bandage" (Dr. Quinlan).
 (b) "A Song of Berdine" (Willsie).
 8.48 p.m.—Win and Windie, English Entertainers.
 8.55 p.m.—Cyril Monk, violinist:
 "Fantasia" upon two Irish Airs (Monk).
 9.0 p.m.—Late weather forecast.
 9.4 a.m.—From the Lyric Theatre, London: rough lyrics, Sydney:
 Hilda King, male impersonator.
 9.16 p.m.—From the Studio: Muriel O'Malley, contralto:
 "The Road of Looking Forward" (Lohr).
 "A Song remembered" (Quinn).
 9.22 p.m.—Mr. F. H. Munkley, Australian performer.
 9.34 a.m.—Lion Smith, female pianist.
 9.35 p.m.—Norman McLennan, bassist:
 "Tom Brown" (Quinn).
 "Trotter to the East" (Sydney Standard).
 9.45 a.m.—From the Lyric Theatre, London Theatre, Sydney: Sydney:
 Jimmy Blair's Jazz Band.
 9.57 p.m.—From the Studio: Win and Windie, English entertainers.
 10.4 p.m.—Lion Smith, female pianist.
 10.12 p.m.—From the Lyric Theatre, London Theatre, Sydney:
 Items by Jimmy Blair's Jazz Band.
 10.25 p.m.—From the Studio: Dr. Morrison and his Glooscheners, interspersed with studio items.
 10.57 p.m.—Late news and announcements.
 11 a.m.—"Big Ben." See Morrison and his Glooscheners, in popular numbers, until 11.30 p.m.
 11.50 p.m.—National Anthem.
 Close down.

2BL, SYDNEY.

Broadcaster's Ltd.

Wave Length, 358 Metres.

Friday

EARLY MORNING SESSION:

7 a.m. to 8 a.m.

MORNING SESSION.

- 10.30 a.m.—G.P.O. Clock and Chimes.
Musical programme from the Studio.
- 10.40 a.m.—News from the "Daily Telegraph" Pictorial.
- 10.45 a.m.—Musical programme from the Studio.
- 11 a.m.—G.P.O. Clock and Chimes.
- 11.5 a.m.—Musical programme from the Studio.
- 11.15 a.m.—Women's Session. Miss Gwen Varley will talk "Gripes," Social Notes and Replies to correspondents by Mrs. Jordan. Talk on "Sweet Making," by Priscilla.
- 11.30 a.m.—G.P.O. Clock and Chimes.
- Special Ocean Forecast and Weather report.
- 11.35 a.m.—Musical programme from the Studio.
- 11.45 p.m.—Information; mails, shipping, and port directory.
- 12.11 p.m.—Boats in call by wireless.
- 12.15 p.m.—Fruit Market report.
- 12.25 p.m.—Vegetable Market report.
- 12.37 p.m.—London Meat Market report.
- 12.49 p.m.—Dairy and Farm Produce Market report.
- 12.52 p.m.—Forage Market report.
- 12.54 p.m.—Fish Market report.
- 12.55 p.m.—Rabbit Market report.
- 12.56 p.m.—Stock Exchange report.
- 12.59 p.m.—H.M.V. Gramophone Recital.
- 1.27 p.m.—Stock Exchange report.
- 1.30 p.m.—G.P.O. Clock and Chimes. Talk to Children and Special Entertainment for Children in Hospital.
- 1 p.m.—G.P.O. Clock and Chimes.

AFTERNOON SESSION.

- During the afternoon racing information will be broadcast immediately after each race, by courtesy of the "Sun" Newspaper.
- 3 p.m.—G.P.O. Clock and Chimes.
- News from the "Sun."
- 3.16 p.m.—The Civil Service Stores Trio, under the direction of Miss de Courcy Bremer.
- 3.20 p.m.—G.P.O. Clock and Chimes.
- News from the "Sun."
- 3.40 p.m.—Talk on "Homecrafts," by Priscilla.
- 4 p.m.—G.P.O. Clock and Chimes.
- Civil Service Stores Trio.
- 4.15 p.m.—Serial Story, entitled, "Made of Money" (P. E. Kynol).
- 4.45 p.m.—Musical programme from the Studio.
- 4.50 p.m.—News from the "Sun."
- 4.55 p.m.—Resume of tonight's programme.
- 4.57 p.m.—Racing resume.
- 4.58 p.m.—Special Ocean Forecast.
- 5 p.m.—G.P.O. Clock and Chimes.
- Close down.

EARLY EVENING SESSION.

- 5.15 p.m.—G.P.O. Clock and Chimes.
- Children's Session.
- 5.30 p.m.—Musical programme from the Studio.

SPECIAL COUNTRY SESSION.

- 7 p.m.—G.P.O. Clock and Chimes.
- A.M.L. & F. Co.'s report.
- Weather report and forecast by courtesy of Govt. Meteorologist.
- Producers' Distributing Society's Fruit and Vegetable report.
- Stock Exchange report.
- Grain and Fodder Report ("Sun").
- Dairy Produce report ("Sun").
- 7.15 p.m.—Country News from the "Sun."

- 7.20 p.m.—Talk by Mr. Gregory, of the N.R.M.A.
- 7.30 p.m.—Talk by Mr. Cooper, Superintendent City Council.
- 8 p.m.—G.P.O. Clock and Chimes.
- Broadcaster's Topical Chorus.
- 8.5 p.m.—Broadcaster's Light Orchestra, under the direction of Mr. J. Knight Barnett.
- 9.11 p.m.—Miss J. E. Goodman (soprano).
- 9.18 p.m.—Broadcaster's All Sports Expert will talk on "Cricket."
- 9.30 p.m.—Mr. Claude Holland (light comedian).
- 9.40 p.m.—Broadcaster's Light Orchestra.
- 9.50 p.m.—Weather report and forecast, by courtesy of Mr. C. J. Mares, Govt. Meteorologist.
- 9.51 p.m.—Description by Mr. Basil Kizic, of the Boxing Quarter at the Stadium, Russettoria Bay, Sydney.
- 9.50 p.m.—Broadcaster's Light Orchestra.
- 9.40 p.m.—The Sporting Editor of the "Sun" will talk on the prospects of Saturday's racing.
- 10 p.m.—G.P.O. Clock and Chimes.
- 10.11 p.m.—Broadcaster's Light Orchestra.
- 10.11 p.m.—Miss J. E. Goodman.
- 10.15 p.m.—Mr. Claude Holland.
- 10.25 p.m.—Resume of the following day's programme.
- 10.35 p.m.—Dance Music by Danny Hogan's Prince Six, transmitting from the ballroom of the Hotel Castro. During intervals between dances, news items by courtesy of the "Sun" Newspapers will be read from the Studio.
- 11 p.m.—G.P.O. Clock and Chimes.
- National Anthem.

AFTERNOON SESSION.

- 3.30 p.m.—Music.
- 3.37 p.m.—Address.
- 3.52 p.m.—Music.
- 4 p.m.—Address.
- 4.25 p.m.—Music.
- 4.50 p.m.—Close down.

EVENING SESSION.

- 7 p.m.—Music.
- 7.10 p.m.—Benediction Service.
- 7.40 p.m.—Address by Mr. A. E. Bennett.
- 7.55 p.m.—Instrumental Solo: DAN SCULLY, MURELLE LANG, ADA BROOK.
- 8.3 p.m.—Address by Dr. P. K. Roost.
- 8.20 p.m.—Songs by Miss Elsie Brown.
- 8.30 p.m.—"No one ever married me" (Lohmann).
8. "Happy Song" (del Rio).
- 8.25 p.m.—Talk; illustrated by his music (arranged by Miss Campbell).
- 9 p.m.—Address by Mr. J. K. Powell.
- 9.15 p.m.—Songs by Elsie Brown:
- "The Sweetest Flower that Blooms" (Hawley).
 - "Carissima" (Penn).
 - 2.28 p.m.—Violin solo.
 - 9.20 p.m.—Instrumental Quartet: DAN SCULLY, L. BRUNER, MURELLE LANG, ADA BROOK.
 - 9.40 p.m.—Talk.
 - 9.50 p.m.—Close down.

2 UW, SYDNEY

Sandel Radio, Ltd.

Wave Length, 267 Metres.

Friday.

MORNING SESSION.

- 9 a.m.—News, shipping, mails, studio items.
- 9.45 a.m.—Women's session.
- 9.55 a.m.—Resume of forward programme.
- 10 a.m.—Close down.
- 12.15 p.m.—Special employees' luncheon session.
- 12.45 p.m.—Close down.

AFTERNOON SESSION.

- 3 p.m.—Studio items.
- 3.59 p.m.—Resume of forward programme.
- 3 p.m.—Close down.

EVENING SESSION.

- 6 p.m.—Studio items.
- 5.59 p.m.—Resume of forward programme.
- 6 p.m.—Close down.

NIGHT SESSION.

- 7 p.m.—"Seneca" selection.
- 7.4 p.m.—Where to go.
- 7.15 p.m.—Studio selection.
- 7.20 p.m.—Matron McMillan, director Australian Motherscraft Society: "Natural Feeding of Babies."
- 7.35 p.m.—Cecily Ellis, mezzo soprano: "Selected."
- 7.59 p.m.—Harry Affick: "Jazz Interlude."
- 7.45 p.m.—Miss Evline Davison, elocutionist: "The Lady Who Oblives."
- 7.55 p.m.—Mr. Rex Ellis, pianoforte solo: "Selected."
- 8 p.m.—G. F. Munnell, tenor: "At Dawning."
- 8.4 p.m.—Aileen O'Connor: "Songs at the piano."
- 8.8 p.m.—Harry Affick: "Jazz Interlude."
- 8.17 p.m.—Miss Cecily Ellis, mezzo soprano: "Selected."
- 8.22 p.m.—Miss Jeanet Patterson, pianoforte solo: "L'Elestrain" (Liszt).

2GB, SYDNEY

Theosophical Broadcasting Service.

Wave Length, 318 Metres.

Friday.

MORNING SESSION.

- 9 a.m.—Music.
- 9.5 a.m.—"Cheerio" Talk.
- 9.15 a.m.—Psychological Class.
- 9.40 a.m.—Music.
- 9.45 a.m.—Health and Diet.
- 10 a.m.—Close down.

**INTERSTATE "A" AND "B" CLAS
BROADCASTING STATIONS.**

- 2LD.—Broadcasting Company of Australia, Ltd., Melbourne, wavelength 311 metres, power 4000 watts.
- 2AR.—Associated Radio Co., Ltd., Melbourne, wavelength 481 metres, power 5500 watts.
- 4AG.—Queensland Radio Service, Brisbane, wavelength 358 metres, power 8000 watts.
- 4CL.—Central Broadcasters' Ltd., Adelaide, wavelength 298 metres, power 1000 watts.
- 4WF.—Western Farmers, Ltd., Perth, wavelength 1250 metres, power 9000 watts.
- 7EL.—Tasmanian Broadcasters, Ltd., Hobart, wavelength 618 metres, 3000 watts.
- 3PB.—The 3PB Broadcasting Co., Pty., Ltd., Capital House, Melbourne, wavelength 255 metres, power 600 watts.
- 4UZ.—O. J. Nilson & Co., Melbourne, wavelength 218 metres, power 180 watts.
- 4GR.—Cold Radio Electric Service, Townsville, Queensland, wavelength 294 metres, power 100 watts.
- 5KA.—Sport Radio Broadcasting Station, Adelaide, wavelength 250 metres, power 1000 watts.
- 4DN.—DN Pty., Ltd., Adelaide, wavelength 212 metres, 500 watts.

Square Glass Cells with each Philca.

8.27 p.m.—George F. Mannel, tenor
"Rosa."
8.31 p.m.—Miss Eveline Davison, elocutionist:
"Her First Pudding."
8.34 p.m.—Miss Janet Paterson, pianoforte
solo:
"Friede in C Minor" (Hatschekshoff).
8.44 p.m.—Miss Ailene O'Connor:
Songs at the piano.
8.45 p.m.—Studio selections.
8.53 p.m.—Miss Cecily Ellis, mezzo soprano:
Selected.
9.2 p.m.—Weather forecast and news bulletin.
9.5 p.m.—G. F. Mannel, tenor:
"When Song is Sweet."
9.15 p.m.—Studio selections.
9.24 p.m.—Recapitulation of forward programme.
9.40 p.m.—God Save the King.

4QG, BRISBANE

Queensland Radio Service
Wave Length, 385 Metres.

Friday.

MIDDAY SESSION.

1.0 p.m.—Market Reports; Weather Information; "The Daily Mail" and "The Daily Standard" News.
1.20 p.m.—Lunch Hour Music.
1.30 p.m.—Standard Time Signal.
2.9 p.m.—Close Down.

AFTERNOON SESSION.

3.30 p.m.—A Programme of Music From the Studio.
4.12 p.m.—"The Telegraph" News.
4.30 p.m.—Close Down.

EARLY EVENING SESSION.

6.0 p.m.—"Daily Standard" News; Weather Information; Announcements.
6.15 p.m.—Lectures: A Law Talk, "The Purpose of Parliament as an End of Criminal Justice," Mr. C. E. Stewart (Barrister-at-Law).
8.30 p.m.—Bedtime Stories by "The Sandman."
9.0 p.m.—Market Reports; Stock Reports.
9.20 p.m.—Weather News; Announcements: "Daily Standard" News.
9.24 p.m.—Standard Time Signal.
9.40 p.m.—"A Queenslanders Impressions of Rural Europe" Mr. J. E. F. Reid (Editor "Queensland Agricultural Journal").

NIGHT SESSION.

The first portion of to-night's programme will be provided by the Silkatone Apollo Club (conductor, Mr. T. Westwood).
8.0 p.m.—From the Studio:
Chorus, "Selling" Chorus" (Goinco).
Silkatone Apollo Club.
A Thought for To-night, "Thinking"
Will H. Little.
Baritone Solo, Selected.
Mr. J. K. Thompson.
Chorus, "Serenade" (Rehebert).
The Apollo Club.
Monologue, Selected.
Mr. D. Owen.
Chorus, "An Canaillid Idyl" (Kreyer).
The Apollo Club.
Tenor Solo, "Dentil."
Mr. T. Westwood.
Chorus, "The Virgin Boatman Song" (Granville Bantock).
The Apollo Club.
Baritone Solo, "Away in Athlone" (Lehr).
Mr. A. E. Little.
Chorus:
(A) "Kentucky Home" (John Bell)
(B) "Old Folks at Home" (John Kerr)
The Apollo Club.
Solo and Chorus, "The Image of a Rose" (Rehebert).
The Apollo Club.
Duet, Selected.
Messrs. Westwood and Merris.
Solo and Chorus, "Sweet Genevieve" (Henry Thielert).
Mr. D. Griffith and Club.

Bass Solo, Selected.
Mr. V. Morris.
Chorus, "Aberfoyle" (Kettaly).
The Apollo Club.
Monologue, Selected.
Mr. D. Owen.
Chorus, "Comrade" in Arms" (Adolphe Adam).
The Apollo Club.
DANCE MUSIC.
8.30 p.m.—From the Congregational Hall; Dance Music.
10.0 p.m.—From the Studio:
"The Daily Mail" News; Weather News;
Close Down.

5CL, ADELAIDE

Central Broadcasters, Ltd.

Wave Length, 395 Metres.

Friday.

MORNING SESSION.

12 noon to 2.0 p.m.

AFTERNOON SESSION.

3.0 p.m.—Chimes.
3.1 p.m.—Orchestral Selection from the Maple Leaf Cafe.
3.45 p.m.—From the Studio; Musical Numbers.
3.8 p.m.—Chimes.
4.1 p.m.—Orchestral Selections from the Arcadia Cafe.
4.58 p.m.—Market Report.
5.0 p.m.—Chimes and Close Down.

EVENING SESSION.

6.0 p.m.—Chimes.
6.1 p.m.—Dinner Music from the Covent Garden Orchestra.
6.55 p.m.—Amos's Half Hour with Uncle Mike and the Kiddies.
7.15 p.m.—Market Report.
7.25 p.m.—Review Talk by Mr. J. P. Morris, of the R.A. Bowling Association.
7.35 p.m.—Windbag's Sporting Service.
7.50 p.m.—"Willow" will Talk on Cricket.
8.0 p.m.—Chimes.
8.1 p.m.—Orchestral Selections by Malcolm Reid's Orchestra, relayed from Warehouse.
8.15 p.m.—Tenor Solo: Mr. Gill Evans.
8.20 p.m.—Orchestral Selections by Malcolm

Reid's Orchestra.
8.30 p.m.—Soprano Solo: Doris McInnes.
8.35 p.m.—Orchestral Selections by Malcolm Reid's Orchestra.
8.45 p.m.—Tenor Solo: Mr. Gill Evans.
8.50 p.m.—Orchestral Selections by Malcolm Reid's Orchestra.
8.8 p.m.—Chimes.
9.1 p.m.—Weather Report.
9.2 p.m.—Daglow's "Wheat Report."
9.5 p.m.—Songs at the Piano: Van Groden.
9.10 p.m.—Soprano Solo: Doris McInnes.
9.15 p.m.—Violin Solo: Eric McLoughlin.
9.20 p.m.—Tenor Solo: Mr. Gill Evans.
9.25 p.m.—Soprano Solo: Doris McInnes.
9.30 p.m.—Mr. B. Baker (Lecturer on Daylight and Sunb. Rays) Reopens Weather; Agricul. Bureau.
9.47 p.m.—Violin Solo: Eric McLoughlin.
9.51 p.m.—Bass Solo: May Piery.
9.55 p.m.—Basso Solo: Seth Smith.
10.0 p.m.—Chimes.
10.1 p.m.—Advertiser News Service.
10.15 p.m.—Banjo Solo: Seth Smith.
10.38 p.m.—Relay from the Matson De Dance Orchestra, Glenelg.
11.10 p.m.—Saturday's Programme and Weather Report.
11.15 p.m.—National Anthem and Close Down.

6WF, PERTH

Westralian Farmer's.
Wave Length, 1350 Metres.

Friday.

12.30 p.m.—Time 11.
12.55 p.m.—Market, News, and Cable.
1 p.m.—Time signal from Perth Observers.
1.1 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.
1.2 p.m.—Studio Quintette, conducted by Mr. Val Smith.
1.30 p.m.—Close down.
2.0 p.m.—Time 11.
2.30 p.m.—Drama Music, relayed from the Grand Theatre, Murray Street.
Vocal Interlude from the Studio.
4.30 p.m.—Close down.
6.45 p.m.—Time 11.
The Evening Transmissions a broadcast on 104.5 length, as well as the usual wave length.
8.00 p.m.—Musical evening for the kiddies, by Uncle Henry and Duffy.
7.20 p.m.—Kicker, Markets, News.
7.45 p.m.—Racing talk by the Sporting Editor of "Truth" Newspaper Co.
8 p.m.—Time signal from Perth Observers.
8.1 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

POPULAR NIGHT

8.7 p.m.—Musical programme, including vocal and instrumental articles.
9 p.m.—Gardening Talk.
9.20 p.m.—Description of the Bowling Match given by the Sporting Editor of "Truth" Newspaper Co., relayed from the Italy Station, Banerfer Street, Fremantle, Messrs. Keys and Lewis.
10 p.m.—Lala News Items, by courtesy of "The Daily News" Newspaper Co.
10.15 p.m.—Ship with race announcement.
Weather Report and Forecast.
10.35 p.m.—Close down.

7ZL, HOBART

Tasmanian Broadcasters, Ltd.
Wave Length, 515 Metres.

Friday

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

3 p.m.—O.P.O. Clock strikes the hour.
3.1 p.m.—Time in selection.
3.5 p.m.—Hobart Stock Exchange Quotations.
Weather Information.
Items of Interest—Announcements.

NEW ZEALAND STATIONS:

(Corrected List.)

1YA, Auckland, The 'Radio Broadcasting Co. of New Zealand, Ltd.

Power 500 Watts; Wave-length, 333 Metres; Silent Night, Monday.

2YA, Wellington, The Radio Broadcasting Co. of New Zealand, Ltd.

Power 8000 Watts; Wave-length, 420 Metres.

3YA, Christchurch, The Radio Broadcasting Co. of New Zealand, Ltd.

Power 500 Watts; Wave-length, 806 Metres; Silent Night, Thursday.

4YA, Dunedin, The Radio Broadcasting Co. of New Zealand, Ltd.

Power 750 Watts; Wave-length, 463 Metres.

America's Submarines all use Burgess.

8.15 p.m.—Selecting by 2FL Studio Trio:
 "Unit Napolitaine" (Dukante).
 "La Vie d'un Roi" (Rude).
 "Clemenza Suite" (Ochler).
 Cello Solo: Selected (Miss Jessie Landa).
 "Dear O'Mine" (Pletcher).
 Violin Solo, Selected (Mr. E. J. McCann).
 Selections from "The Merry Widow" (Lehar).
 "Red J'm'n" (Bridge).
 4.15 p.m.—Educational Talk.
 4.30 p.m.—Close down.

EARLY EVENING SESSION.

6.30 p.m.—Children's Corner with the "Radio Lady".
 6.45 p.m.—Yuzor speaks concerning chat. by Mr. George Naton.

NIGHT SESSION.

7.40 p.m.—Fruit Poultry and produce reports through the courtesy of Roberts and Co. Ltd., Hobart.
 7.50 p.m.—Gardening talk by Mr. George Naton—Glen Nurseries, Cascades.
 7.50 p.m.—"Mercury" special Tasmanian news service. Railway station produce sales. Weather forecasts. Hobart Stock Exchange quotations.
 8 p.m.—G.P.O. Clock chimes the hour.
 8.1 p.m.—Studio concert:
 Miss Mena McFadden (soprano), Miss Duffie Tate (alto), Miss Ruby Plesse (pianist), Miss Enid Knight (soprano), Miss Norah Hayes (soprano), M.C. Tegan (baritone), Mr. George Hoek (conductor), Mr. Harry Bates (tenor), Mr. Victor Pharoah (bass solo).
 8.30 p.m.—Chat on Saturday Football match by "Goosey" Marsh.
 9.00 p.m.—British Official Wireless news.
 9.00 p.m.—"Mercury" special interstate news service; Station weekly wireless range. Tasmanian District Weather reports. p.m. Weather forecasts. Travellers week-end information. Station announcement.
 To-morrow's programme, National Anthem.

Saturday, Nov. 26 2FC, SYDNEY.

EARLY MORNING SESSION.

7 a.m.—"Big Ben" and announcements.
 7.5 a.m.—Studio music.
 7.55 a.m.—Dessert Session: Official weather forecast, rainfall, temperature, astronomical memoranda, shipping intelligence, mail services.
 7.55 a.m.—Investment market, mining share market, metal quotations.
 7.55 a.m.—Wool sales, breadstuffs markets, International markets, produce markets.
 7.45 a.m.—"Sydney Morning Herald" summary.
 7.50 a.m.—Studio music.
 8.00 a.m.—"Big Ben." Close down.

MORNING SESSION.

10 a.m.—"Big Ben" and announcements.
 10.5 a.m.—Studio music.
 11.15 a.m.—"Sydney Morning Herald" news service.
 10.40 a.m.—Studio music.
 10.35 a.m.—A talk by the 2FC Racing Commission.
 10.45 a.m.—Studio music.
 11 a.m.—"Big Ben." Studio music.
 11.5 a.m.—A.P.A. and Reuter's Cable Services.
 11.10 a.m.—Studio music.
 11.25 a.m.—A talk on Gardening by Mr. G. L. Lockley ("Redgum").
 11.30 a.m.—Close down.

MIDDAY AND AFTERNOON SESSION.

12 noon—"Big Ben" and announcements.
 12.2 p.m.—Stock Exchange, first call.
 12.3 p.m.—Studio music.
 12.28 p.m.—"Sydney Morning Herald" news service.

12.35 p.m.—Rugby wireless news.
 12.50 p.m.—Studio music.
 Note: Events of the A.J.C. Meeting at Randwick will be devoted to the running by the 2FC Racing Commissioner.
 1 p.m.—"Big Ben." Weather intelligence.
 1.2 p.m.—"Evening News" midday news service.

1.20 p.m.—Studio music.
 Note: During trading intervals the following musical items will be given:—
 Song Quartet, Melopie numbers.
 The Crystal Palace Theatre Orchestra, and Music from the Studio.
 4.20 p.m.—Complete resume of the day's sporting events.

5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

6.40 p.m.—The rhimes of 2FC.
 6.45 p.m.—The "Hello Man" talks to the children.
 6.50 p.m.—Story time for the young folk.
 6.55 p.m.—Studio music.
 7 p.m.—"Big Ben." Weather intelligence.
 7.15 p.m.—Latest sporting information.
 7.3 p.m.—"Evening News" late news service.
 7.45 p.m.—Studio music.

NIGHT SESSION.

7.40 p.m.—Programme announcements.
 7.45 p.m.—Mr. M. H. Ellis:
 A Talk on a Trip from England to India by Motor Car.
 8 p.m.—"Big Ben."
 The Leoni Instrumental Quartet:
 (a) Selection from "William Tell" (Rossini).
 (b) Fugue solo, "Boguetelle" (Jong).
 8.10 p.m.—Results from the Speedway Royal.
 8.15 p.m.—From the Studio:
 Gladys Finistey, soprano.
 8.20 p.m.—Shirley Cooke, contralto, and Harry Bates, tenor, vocalists.
 8.25 p.m.—Charles Lawrence, entertainer:
 "Safety First" (Hayes).
 8.32 p.m.—Wally Baynes, comedian.
 8.40 p.m.—From the Speedway Royal:
 Progress results.
 8.42 p.m.—From the Studio:
 The Leoni Quartet, instrumentalists:
 (a) Australian and American Society" (arr. Goyl).
 (b) Violin solo, "Caprice Viennese" (Kreisler).
 8.50 p.m.—Progress results from the Speedway Royal.

FOREIGN BROADCASTERS.

JOCK—Nagoya Radio Broadcasting Co., Nagoya, JAPAN: 340 watts, 1600 watts. (Announcement in English and Japanese).
 JOKK—Osaka Central Broadcasting Co., Osaka, JAPAN: 485 metres, 1600 watts. (Announcement in English and Japanese).
 JOAK—Tokyo Broadcasting Co., Tokyo, JAPAN: 375 metres, 1600 watts. (Announcement in English and Japanese).
 JFC—Batavia'sche Radio Vereeniging, BATAVIA, 220 metres, 10 watts.
 KZRM—Manila, PHILIPPINE ISLANDS: 413 metres, 1000 watts. (Announcement in English and Philippine).
 KGU—"Henshela Advertiser," Henshela, HAWAII, 270 metres, 500 watts.
 NGO—Oakland, CALIFORNIA: 261.2 metres, 5000 watts.
 KFL—Los Angeles, CALIFORNIA, 447 metres, 5000 watts.
 KOA—Denver, COLORADO: 322.4 metres, 5000 watts.

8.55 p.m.—From the Studio:
 The Leoni Quartet, instrumentalists:
 (a) "Birth of the Blues" (Henderson).
 (b) "Duke's Dream Girl."
 9.5 p.m.—Late weather forecast.
 9.50 p.m.—The "Radio Revelers," under the leadership of Mr. Laurence Halbert:
 (a) Jests.
 Opening chorus by the Company, including Gladys Finistey, soprano; Wally Baynes, comedian; Shirley Cooke, contralto; Harry Bates, tenor; pianist; Charles Lawrence, entertainer; Len Maurice, popular baritone.
 Note: Progress results from the Speedway Royal will be given at intervals.
 10.15 p.m.—From the Ambassadors:
 The Ambassadors Orchestra, under the baton of Mr. A. Hammett.

10.35 p.m.—From the Studio:
 Vocal numbers by Len Maurice.
 10.35 p.m.—From the Ambassadors:
 The Ambassadors' Orchestra.
 10.37 p.m.—Late news and announcements, from the Studio.
 11 p.m.—"Big Ben."
 The Ambassadors Orchestra, in popular numbers, from 10.45 p.m.
 11.40 p.m.—National Anthem.
 Close down.

2FL, SYDNEY

Saturday.

EARLY MORNING SESSION.

7.0 a.m. to 8.0 a.m.

MORNING SESSION.

11.0 a.m.—G.P.O. Clock and Chimes: Musical Programme from the Studio.
 11.15 a.m.—Women's Section: Social Notes and Replies to Correspondents, by Mrs. Jordan. Talk on "Simple Cooking for Children," by Mrs. Jordan.

AFTERNOON SESSION.

Race Results Broadcast by Courtesy of the "Sun" Newspapers.
 12 noon—G.P.O. Clock and Chimes; Special Noon Forecast and Weather Report.
 12.3 p.m.—Musical Programme from the Studio.
 12.30 p.m.—News from the "Sun."
 12.35 p.m.—Sporting and Athletic Fixtures.
 12.37 p.m.—What's on at the Pictures and Theatres.
 12.40 p.m.—Musical Programme from the Studio.
 12.40 p.m.—News from the "Sun."
 12.49 p.m.—Racing Resume.
 12.55 p.m.—Musical Programme from the Studio.
 1.0 p.m.—G.P.O. Clock and Chimes: Musical Programme from the Studio.
 1.10 p.m.—Sporting Talk and Athletic Fixtures from the "Sun."
 1.20 p.m.—Musical Programme from the Studio.
 1.30 p.m.—G.P.O. Clock and Chimes: Talk to Children and Special Entertainment for Children in Hospital.
 1.40 p.m.—G.P.O. Clock and Chimes: Racing Resume.
 2.4 p.m.—Serial Story entitled, "Made of Money" (P. B. Byrne).
 2.00 p.m.—Musical Programme from the Studio.
 2.30 p.m.—G.P.O. Clock and Chimes: News from the "Sun."
 2.40 p.m.—Musical Programme from the Studio.
 2.55 p.m.—News from the "Sun."
 3.0 p.m.—G.P.O. Clock and Chimes: Racing Resume.
 3.5 p.m.—Musical Programme from the Studio.
 3.20 p.m.—News from the "Sun."
 3.25 p.m.—Musical Programme from the Studio.
 3.40 p.m.—News from the "Sun."
 3.45 p.m.—Musical Programme from the Studio.

- 5.55 p.m.—News from the "Sun."
 6.0 p.m.—G.P.O. Clock and Chimes; Racing Results.
 6.5 p.m.—Musical Programme from the Studio.
 4.30 p.m.—News from the "Sun."
 4.30 p.m.—G.P.O. Clock and Chimes; Musical Programme from the Studio.
 4.40 p.m.—News from the "Sun."
 4.45 p.m.—Musical Programme from the Studio.
 5.0 p.m.—G.P.O. Clock and Chimes; Racing Results.
 5.10 p.m.—Close Down.

EARLY EVENING SESSION.

- 5.45 p.m.—G.P.O. Clock and Chimes; Children's Session.
 6.30 p.m.—Musical Programme from the Studio.
 7.15 p.m.—Results of all Sporting held during the day.
 7.30 p.m.—Country News from the "Sun."
 8.0 p.m.—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.
 8.5 p.m.—Broadcasters' Instrumental Trio: Dulcie Blair, Violin; Joyce Carter, Cello; G. Vera Barnett, Piano.
 8.13 p.m.—Humorous Sketch by Miss May Nancarrow.
 8.20 p.m.—Dance Music by Cyril Kaye and The Wentworth Cafe Orchestra, Broadcast from the Wentworth.
 8.30 p.m.—Broadcasters' Musical Comedy Show under the Direction of Mr. Harley Court.
 9.00 p.m.—Resume of the Racing Events, Greyhound Coursing, Epping.
 9.35 p.m.—Dance Music by Cyril Kaye and The Wentworth Cafe Orchestra.
 9.45 p.m.—Humorous Sketch by Miss May Nancarrow.
 9.52 p.m.—Dance Music by Cyril Kaye and The Wentworth Cafe Orchestra.
 10.0 p.m.—G.P.O. Clock and Chimes.
 10.15 p.m.—Resume of Following Day's Programme.
 10.30 p.m.—Broadcasters' Instrumental Trio.
 10.35 p.m.—Dance Music by Cyril Kaye and The Wentworth Cafe Orchestra, transmitting from the Ballroom of the Wentworth.
 Darling Intervals between Dance, News Items by Courtesy of the "Sun" Newspapers will be read from the Studio.
 12.0 midnight—G.P.O. Clock and Chimes; National Anthem.

2 UW, SYDNEY

Saturday.

NIGHT SESSION.

- 7 p.m.—Sonnors selection.
 7.4 p.m.—Where to Go.
 7.15 p.m.—Dance selections from the Studio.
 8 p.m.—Weather forecast and news items.
 9.10 p.m.—Studio selections.
 9.25 p.m.—Resume of forward programme.
 9.30 p.m.—God Save the King.

4QG, BRISBANE.

Saturday.

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

- 3.30 p.m.—A instance for little listeners by "Miss Weraiah."
 4.30 p.m.—Close down.

EARLY EVENING SESSION.

- 6.30 p.m.—Bedtime stories by "Uncle Ben."
 7.15 p.m.—Racing results.
 7.30 p.m.—Today's sporting news described.
 7.40 p.m.—Sailing notes by Mr. Fred Smith.
 7.45 p.m.—Lecturette: Garden Talk, "The Rose in Summer"—by "Teroma."

NIGHT SESSION.

To-night's programme will comprise the relaying of a concert arranged by St. David's Society, Blackstock, in conjunction with the unveiling of the "Barrie Chair," to be unveiled in the National Hall, Blackstock, at 8 p.m. from the United Welsh Church, Blackstock.

Welsh National Anthem—"Hen Wlad Fy Nhadau."

Solo by Mr. Stanley Edmonds.
 Part Song—"Galm in the Lake,"

Welsh Choir (Conductor, Mr. W. D. Jones; accompanist, Mrs. C. Edmonds).
 Solo—"The Mines,"

Mr. Vic Morris.
 Welsh Folk Songs—

Welsh children.
 Address by Councillor H. L. Jones,
 Solo—"Codiad yr Ffedydd."

Miss Elmer Davies.
 Chorus—"Avalon, Avalon Lane,"

Bilkton Apollo Club.
 Address by Mr. L. D. Edwards, M.A. (Chief Inspector of Schools),
 Community Singing—"Crug-y-Bar,"

Solo—"Uddi,"

Mr. T. S. Westwood.
 Part-song—"The Singers" (Mackenzies),
 Welsh Choir.

Unveiling Barrie Chair.
 Address by Mr. E. H. Lewis (Pres. of St. David's Society).
 Quartette—"Myfanwy" (Dr. Parry).
 Messrs. A.M. Wainwright, K. Winkler, Taliesin Jones, Ivor Jones.

Solo—"Dress a Gance,"
 Mr. Gordon Stafford.
 Address by Hon. J. W. Blair (Chief Justice and Chancellor of the University of Queensland).
 Solo—"Spring Time is Returning,"

Miss Dilly F. Lewis.
 Chorus—"Men of Harlech" (A.D. 1488).
 The Siltkaton Apollo Club.
 Address by Hon. D. A. Gleason (Minister for Labor and Industry).
 Communal singing.

Address by Mr. A. T. Stephenson, Mayor of Ipswich.
 Solo—Selected.

Mrs. Edwin Edwards.
 Duo—"Blue Clothy Dress" (Parry).
 Messrs. T. S. Westwood and Vic Morris.
 Address by the Rev. James Davison (Minister of Welsh Church).
 Anthem—"To the End of the Sabbath (Victory)."
 Welsh Choir.

10 p.m.—FROM THE STUDIO.
 "The Sunday Mail" news.
 Weather news.
 Close down.

5CL, ADELAIDE.

Saturday.

MORNING SESSION.

- 11 a.m.—Chimes.
 11.1 a.m.—"Advertiser" news service.
 11.30 a.m.—RUBBER numbers and the results.
 Repetitor.
 12 noon.—Close down.

AFTERNOON SESSION.

- 12.45 p.m.—Running description of the Amateur Golf Club Meeting by Mr. Arnold Treason, interspersed with musical numbers and Adelaide sporting results.
 5.15 p.m.—(Approx.)—Close down.

EVENING SESSION.

- 4 p.m.—Chimes.
 8.1 p.m.—Dinner Music from the Covent Garden's Orchestra.
 Selection, "Gibraltar" (Jopon).
 Serenade "Mousetime" (Fletcher).
 Fox trot, "It made you Happy" (Donaldson).
 Regret, (Zawonski).
 Finale, "Dear Old Boston" (Frenzel).
 1.15 p.m.—Market reports by S. C. Ward and Co.
 7.20 p.m.—Sporting results.
 7.30 p.m.—The event of the Year. The Marriage of the RCL November Bride.
 Owing to lack of information at this juncture to mention who the successful lady will be, and where the Ceremony will take place, listeners are asked to watch for further announcements.
 The reception and wedding breakfast will be interspersed with vocal and instrumental selections.
 Owing to the following artists:
 Miss Margaret Walsh soprano.
 Fred Williamson, tenor.
 Gen. Whittier, electrician.
 Elsie Anselme, pianist.
 Gwen Gilbert, contralto.
 10 p.m.—G.P.O. chimes.
 10.1 p.m.—"Advertiser" news service.
 10.15 p.m.—Relay from the Melton De Dance, Glenelg.
 11.10 p.m.—Sunday's programme.
 11.15 p.m.—National Anthem and close down.

6WF, PERTH.

Saturday.

- 12 noon.—Tune in.
 12.45 p.m.—Special programme including "Musical selection by Miss Evelyn Willis, A.R.C.M."
 12.47 p.m.—Market, News, and Calles.
 1 p.m.—Time signal from Perth Observatory.
 1.1 p.m.—Weather notice, supplied by the Meteorological Bureau of Western Australia.
 1.3 p.m.—Close down.
 3.30 p.m.—Tune in.

SPORTING SESSION.

- 3.35 p.m.—Racing results.
 Progressive Cricket notes.
 Vocal and instrumental interludes, from the Studio.
 5.30 p.m.—Close down.
 6.45 p.m.—Tune in.
 The Evening Transmittals is broadcast on 104.5 metres, as well as the usual wave-length.
 6.45 p.m.—Birthday greetings for the Klubbis, by Uncle Reg.
 7.10 p.m.—Sporting results.
 7.20 p.m.—Market, News, and Calles.
 7.45 p.m.—Talk.

Short Wave Broadcasters

Schedule and Wavelengths Subject to Change.

- 2NM, Gerald Marcus, Catterham, England, 23 and 36 metres (B.I.G. Programme).
 P.C.J., Philips' Experimental Station, Eindhoven, Holland, 30.3 metres (B.B.C. Programme).
 2XAF, General Electric Co., Schenectady, New York State, U.S.A., 32.77 metres (W.G.Y. Programme).
 2XAG, General Electric Co., Schenectady, New York State, 34, 36 and 32 metres (W.G.Y. Programme).
 KDKA, Westinghouse Electric Co., Pittsburgh, Penn., U.S.A., 69.3, 14 and 49 metres.
 WLV, Crosley Radio Corporation, Cincinnati, Ohio, 41.5 A., 32 metres.
 2XAL, "Radio News," New York City, U.S.A., 39.91 metres (WKNY Programme).
 J.B. Johannesburg Broadcasting Company, South Africa, 20 and 25 metres.
 SSW, Maseoni Company, Chelmsford, England, 24 metres.
 RPN, Moscow, U.S.S.R., 30 metres.

Buy a Burgess and Cat Battery Cool.

5 p.m.—Time signal from Perth Observatory.

8 1/2 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

DANCE NIGHT.

11 1/2 p.m.—Old-time Dance Music, relayed from the Unity Dance Theatre, Boncroft Street.

FROM THE STUDIO.

Medical programme, including vocal and instrumental artists.

19 p.m.—Late news items, by courtesy of "The Daily News" Newspaper Coy. Ships within range announcement. Weather Report and Forecast.

10.30 p.m.—Close down.

7ZL, HOBART

Saturday

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

2 p.m.—G.P.O. Clock chimes the hour. Broadcast by direct wire from the North Hobart Oval description of Cricket match. Sandy Bay v North Hobart, by "Midi off." Close down.

EARLY EVENING SESSION.

6.40 p.m.—"Uncle Hector" talks to the children.

7 p.m.—"Uncle Peter's" half hour.

NIGHT SESSION.

7.30 p.m.—Musical selection.

7.45 p.m.—Talk by Mr. G. R. Davis Secretary of the Hobart Development League.

7.50 p.m.—"Mercury" special Tasmania news service. Railway auction produce sales. Hobart Stock Exchange quotations. Weather information.

8 p.m.—G.P.O. Clock chimes the hour.

8.15 p.m.—Dance numbers by Pavilion Dance Band City Hall, Hobart.

8.30 p.m.—Nature Lesson Book opened by Mr. F. G. Roberts, Tasmania's Naturaph.

8.40 p.m.—British Official Wireless news.

8.50 p.m.—Ships within range. Weather information. Italian announcements. Co-terminus programme.

10.30 p.m.—Close down.

Sunday, Nov. 27

2FC, SYDNEY

MORNING SESSION.

10.30 a.m.—Programme announcements.

11 a.m.—"Big Ben" from St. Stephen's Church, Phillip Street, Sydney.

MORNING SERVICE.

Preacher, Rev. Hugh Paton. Organist, Mr. Harry Chandler, M.A.

Doxology.

Invocation.

Hymn 379.

Lesson: Psalm 57.

Prayer.

Psalm 121.

Lesson: Acts 13.

Young People's Portion.

Hymn 591.

Prayer.

Antiphon, "Oh for a Closer Walk with God."

Sermon, "A Very Famous City" (Acts 13, 14).

Prayer.

Hymn 296.

Benediction.

12.15 p.m.—From the Studio: News session.

12.30 p.m.—Close down.

AFTERNOON SESSION.

2.35 p.m.—Programme announcements.

3 p.m.—From the Congregational Church, Petersham.

SUNDAY SCHOOL ANNIVERSARY SERVICE.

Hymn, "There's a Road."

Hymn, "Little Hands may serve Thee."

Prayer, followed by Lord's Prayer, sung by

the children.

Hymn, "Bells," by primary scholars.

Reading.

Announcements.

Collection and Hymn, "Shine Light of the

Southern."

Address, Rev. B. Bentley.

Hymn, "Just as I am."

Benediction.

Diminial Hymn, "Lift up Thy Voice."

4.15 p.m.—From the Studio.

A Talk by Mr. W. F. Jackson:

"A Comparison of the World's Great

Cities."

4.30 p.m.—Studio music.

4.45 p.m.—Close down.

EVENING SESSION.

6 p.m.—"Big Ben" and announcements.

6.15 p.m.—Mr. W. F. Kay tells of Australian-

born actors.

6.20 p.m.—From the Congregational Church

Petersham:

An Organ Recital by Mr. A. F. Gibbs.

L.C.M. Organ, "March upon Handel's 'Lift up your

Reeds'" (Guilmant).

4.30 p.m.—Andante, from "Violin Concerto"

Mendelssohn.

6.40 p.m.—"Hymns" (Dovrak).

6.45 p.m.—(a) "Der Erlkoning."

(b) "Kronung"—March (Kretschmer).

6.45 p.m.—Violin, "Ave Maria" (Gairdner).

"O Holy One" (Hartmann).

Mr. Donald McDonald.

6.45 p.m.—Organ, "Serenade" (Widow).

6.45 p.m.—Vocal solo, soprano.

7.15 p.m.—Organ, "Russian March" (Graham

Clark).

Chimes.

7.15 p.m.—EVENING SERVICE from the

Congregational Church, Petersham.

55th Anniversary.

Hymn, "God Bless Us."

Hymn, "The Sun's Splendor"

Prayer, followed by Lord's Prayer, sung by

the children.

Reading.

Hymn.

Deut and Chorus, "Just Beyond."

Announcements.

Collection and Hymn, "Lift up Thy Voice."

Address, Rev. A. P. Doran.

Hymn, "Fight the Good Fight."

Benediction.

Diminial Hymn, "There's a road that

wreathes white."

8.30 p.m.—From the Studio:

Fraser Cox, baritone:

(a) "Beyond the Dawn" (Sanderson).

(b) "There is a Green Hill" (Gounod).

8.35 p.m.—Mitscha Dobrinski, violinist:

(a) "Slavonic Dance," G. Minor, No. 1

(Dovrak-Kretzler).

(b) Ballet Music from "Rokomunde" (Schu-

bert-Kretzler).

8.40 p.m.—Madame Lilian Gibson, contralto:

(a) "Through Love to Light" (Wynne).

(b) "The Praise of God" (Beethoven).

(c) "O Rest in the Lord" (Mendelssohn).

8.45 p.m.—Paul Vinogradoff, pianist:

(a) "Gavotte" (Gloré-Brasme).

(b) "Rondo Capriccioso" (Mendelssohn).

(c) "The Birds in the Garden" (Scriabine).

(d) "Black Key" (Chopin).

(e) "Butterfly" (Chopin).

9.5 p.m.—Margaret James, soprano:

(a) "Come unto Him," from "The Messiah"

(Handel).

(b) "Thy my carriage be but curulean"

(Haydn).

9.12 p.m.—Mr. Arnold Metz will talk about

Westminster Cathedral.

9.25 p.m.—Fraser Cox, baritone:

(a) "Serenade" (Schubert).

(b) "A Song Remembered" (Cunha).

9.32 p.m.—Mitscha Dobrinski, violinist:

(a) "Wiener Volkstanz" (Kretzler).

(b) "Turkish-March" (Beethoven).

9.38 p.m.—Margaret James, soprano:

(a) "Happy Up, April" (Travers).

(b) "The Sweets" (Squire).

9.45 p.m.—Paul Vinogradoff, pianist:

(a) "Fantasia Impromptu" (Chopin).

(b) "Hungarian Rhapsody" (Liszt).

9.50 p.m.—Madame Lilian Gibson, contralto:

"Ave Maria," from "Cavalleria Rusticana"

(Mascagni).

10.4 p.m.—National Anthem.

Close down.

2BL, SYDNEY

Sunday.

MORNING SESSION.

10.45 a.m.—Special News Service.

11.0 a.m.—G.P.O. Clock and Chimes.

12.1 a.m.—Service Broadcast from Chalmers'

Presbyterian Church. Address by Rev. D.

Brandt.

12.50 p.m.—Close Down.

AFTERNOON SESSION.

2.0 p.m.—G.P.O. Clock and Chimes.

2.2 p.m.—From the Studio: Special Service

for Children.

2.35 p.m.—A Recital by Courtesy of H.M.V.

Gramophone Company.

2.40 p.m.—Organ Recital from Balmoral Pres-

byterian Church.

2.50 p.m.—Anniversary Service from Balmoral

Presbyterian Church.

3.20 p.m.—From the Studio: Bible Class con-

ducted by Mr. W. Cairns.

3.4 p.m.—G.P.O. Clock and Chimes: Close

Down.

EVENING SESSION.

5.15 p.m.—G.P.O. Clock and Chimes: Child-

ren's Service.

7.0 p.m.—Service Broadcast from St. Jude's

Church of England, Randwick. Address by

Rev. Dr. Cranwell, Bishop of Gippsland.

7.50 p.m.—Band Recital by the North Sydney

Tramway Band, transmitting from the

Manresa Hall, North Sydney. Conductor,

Mr. W. T. Barnes.

9.15 p.m.—From the Studio: Weather Report

and Forecast by courtesy of Mr. E. J. Mares,

Government Meteorologist.

9.15 p.m.—Miss Phyllis Atkinson (Mezzo

Soprano).

9.23 p.m.—Broadcasters' Instrumental Trio.

9.33 p.m.—Mr. Herbert C. Minchella (Bari-

tone).

9.40 p.m.—Broadcasters' Instrumental Trio.

9.50 p.m.—Miss Phyllis Atkinson.

9.57 p.m.—Resumé of Following Day's Pro-

gramme.

10.0 p.m.—G.P.O. Clock and Chimes.

10.1 p.m.—Mr. Herbert C. Minchella.

10.8 p.m.—Broadcasters' Instrumental Trio.

10.16 p.m.—G.P.O. Clock and Chimes: National

Anthem.

2GB, SYDNEY

Sunday.

MORNING SESSION.

10.30 a.m.—Service from St. Alban's Liberal

Catholic Church, Redfern.

12 p.m.—Close down.

EVENING SESSION.

6.45 p.m.—Music from Studio.

7 p.m.—Lecture from Adyar Hall.

8 p.m.—Vocal Recital by the Students from

the Clement Hooley Studio.

8.40 p.m.—Address.

9 p.m.—Close down.

America's Submarines all use Burgess.

2 UW, SYDNEY

Sunday

MORNING SESSION.

- 10.30 a.m.—Organ solo:
"An Autumn Serenade" (De Wolte).
10.34 a.m.—Tenor solo:
"O, Lovely Night" (Rouald).
10.38 a.m.—Pianoforte solo:
"Our Miss Gibbs" (selections).
10.43 a.m.—Flute solo with orchestral accompaniment:
"Concert Piece, Op. 38—Finale" (Hofman).
10.48 a.m.—Baritone solo:
"O, Star of Eve" (Tannhauser) (Wagner).
10.54 a.m.—Studio selections.
11.9 a.m.—Orchestral selection:
"Morning" (See Lynt Suite) (Grieg).
11.14 a.m.—Flute solo:
"Concertino, Op. 107" (Chaminade).
11.18 a.m.—Soprano solo:
"Cello Lindo" (Mexican Folk Song (Brazil)).
11.22 a.m.—Cello solo:
"Melody in F" (Bubstein).
11.26 a.m.—Tenor solo:
"Phyllida" (Fubler).
11.30 a.m.—Pianoforte solo:
"Kissing Time" (selection).
11.37 a.m.—Cello solo:
"Tranquero" (Reverie) (Schumann).
11.41 a.m.—Soprano solo:
"Carmelia" (Spanish-Californian Folk Song (Hanson) (Rosa).
11.45 a.m.—Pianoforte solo:
Selection from the "Mikado."
11.47 a.m.—Orchestral selection:
"Death of Ase" (See Lynt Suite).
11.51 a.m.—Studio selection.
12.1 a.m.—Organ solo:
"Teum" (Fahrt).
12.7 a.m.—Baritone solo:
"An enemy of the country" (Guedat).
12.10 a.m.—Studio selection.
12.20 a.m.—Pianoforte solo:
"Lilas Time" (selections).
12.27 a.m.—Resume of forward programme.
12.30 p.m.—Close down.

NIGHT SESSION.

- 7 p.m.—Studio selections.
8 p.m.—Colden Duo:
Steel guitar selections.
8.4 p.m.—Studio selections.
8.16 p.m.—Pianoforte solo:
"Narriaba" (selections).
8.24 p.m.—Colden Duo:
Steel guitar selections.
8.30 p.m.—Studio items.
8.35 p.m.—Colden Duo:
Steel guitar selections.
8.41 p.m.—Studio items.
8.48 p.m.—Resume of forward programme.
9.30 p.m.—God Save the King.

3LO, MELBOURNE

Broadcasting Co. of Aust.

Wave Length, 371 Metres.

Sunday.

MORNING SESSION.

- 10.30 a.m.—Evening Train Information.
Bells from St. Paul's Cathedral.
MORNING SERVICE FROM ST. PAUL'S CATHEDRAL, MELBOURNE:
First Sunday in Advent.

- 10.45 a.m.—Matins (Choral) and Intercessions. Psalm VII.
Te Deum and Benediction (Stainer in B flat).
Antiphons—The Great Day of the Lord is near. It is near, and hasteth greatly, even the voice of the Lord's anger. The Great Day of the Lord is near. (Martin).
Hymn 48, "O Heavenly Word: Regal Light".
Prayer: The Archbishops.
Hymn 49, "The Advent of Our King".
Blessing.
12.15 p.m.—British Official Wireless News from Rugby.
News from yesterday's papers.
12.29 p.m.—Close down.

AFTERNOON SESSION.

- PLEASANT SUNDAY AFTERNOON SERVICE FROM WESLEY CENTRAL HALL, MELBOURNE:
Chairman: REV. S. J. BOHAN.
Conductors: Mr. G. M. WILLIAMS.
3 p.m.—Hymn No. 20, "Hail, Thou Once Despised Jesus".
Prayer: Rev. J. R. Cuth.
Orchestral Selection.
Hymn No. 116, "O King of Kings".
Solo, Mr. W. J. Cadzow.
Organists.
Solo, Mr. W. J. Cadzow.
Notices.
Offering.
Orchestra.
ADDRESS: MR. FRANK TATE, C.M.E., I.S.O.
"AN EDUCATIONALIST'S IMPRESSIONS"
National Anthem.
Benediction.
4.30 p.m.—Close down.

EVENING SESSION.

- 5.30 p.m.—Answers to Letters and Birthday Greetings by "BILLY BONNY."
8 p.m.—"THE IRISH PIPERS":
Hymn "Far Across the Western Sea";
Organ and Violin, "All on Gilling" (March).
Chorus, "Whether Good, Then an Quick" (Old French Song).
Solo, "Billy"
Chorus, "The Sad Shepherd."
Violin Solo, "Andantino".
Duet, "Spring Song."
Goodnight Song.
Edithma Fairfax.
6.25 p.m.—"BROTHER BILL":
"Hot, Cold or Lukewarm".
6.45 p.m.—Bells from St. Paul's Cathedral.

NIGHT SESSION.

- EVENING SERVICE FROM ST. PAUL'S CATHEDRAL, MELBOURNE:
7 p.m.—EVENING CHORUS:
Hymn 51, "Lo! He comes with clouds descending."
Psalm 45, 46.
Hymn.
"Day of Awe, day of Mourning,
See fulfilled the prophet's warning,
Heaven and earth in ashes burning."
(Mozart).
Hymn 217, "The Kingdom Come, O God".
Prayer, CANON ENDICOTT.
Hymn 219, "Hail to the Lord's Anointed".
Blessing.
Organ Music after Evening.
Chorus, Prelude, "Showers, Waka" (March).
FROM THE STUDIO:
6.30 p.m.—VICTORIAN PUBLIC SERVICE MILITARY BAND:
Selection, "Burry".
8.40 p.m.—STANLEY BAISES, Flute:
"Carnetio" (Chaminade).
8.47 p.m.—VICTORIA WILSON, Soprano:
"The Lark" (Liszt).
"The Burbling" (Schumann).
8.54 p.m.—VICTORIAN PUBLIC SERVICE MILITARY BAND:
"Value Lent" (Trotz Fasser) (Berger).

- 9 p.m.—WILLIAM G. JAMES, Flute Recital:
"La Chasse" (Soviet).
"Minnetta" (Arvo).
"Frenche e Tontala" (Mangiapali).
"Concert National" (Poulain).
"Robbery March" (by request) (Liszt).
9.30 p.m.—VICTORIAN PUBLIC SERVICE MILITARY BAND:
Conductor: Bert Thomas:
Current Solo, "When you come Home" (Squire).
Soloist, H. W. Board.
8.37 p.m.—VICTORIA WILSON, Soprano:
"Max" (M. Brahms).
"Fairy Song" (R. Bruch).
9.34 p.m.—STANLEY BAISES, Flute:
"Serenade" (Mozzkowski).
"Whitehead" (Kraus).
9.41 p.m.—VICTORIAN PUBLIC SERVICE MILITARY BAND:
March, "Good" (Raninick).
"Columbia" (Yacht Club).
9.42 p.m.—The Royal Automobile Club of Victoria's Safety Message for today is for PIEDDESTRIANS, "Don't forget your responsibilities whenever other people may be. Always keep your eyes open and your wits alert."
Under the auspices of the Health Association of Australasia:
HEALTH MESSAGE: "There should be no child who is not born under proper conditions. Does not live in hygienic surroundings. Ever suffers from malnutrition. Does not have enough and efficient medical inspection and attention. Does not receive primary instruction in the elements of hygiene and health."
—(Hosker).
"Arise" (New Service, Anonymous).
OUR GREAT THOUGHT: "It has been said that the orchestra is to the musician what his palette is to the painter."
—(Wesley).
Make Victoria More Musical. Subscribe to the Millie Shilling Fund.
10 p.m.—GOD SAVE THE KING.

4QG, BRISBANE.

Sunday.

MORNING SESSION.

- ST. ANDREW'S CHURCH OF ENGLAND.
The complete morning service will be retransmitted from St. Andrew's Church of England, South Brisbane.
10.50 a.m.—From St. Andrew's:
Organ Music by Mr. E. W. Taylor.
11.0 a.m.—Hunting Prayer: Psalms I and VII.
Te Deum (Russell).
Benedictus (Goss).
Amen and Mission Hymns: No. 50, "On Jordan's Bank" and 246, "Fight the Good Fight" (The Commers), 214.
"Through the Night."
Sermon by the Rector.
Organ Voluntary.
12.15 p.m.—Close Down.

AFTERNOON SESSION.

CHURCH SERVICE.

- The complete afternoon service will be retransmitted from the Church of Denmark, George Street, Brisbane.
2.15 p.m.—From the Church of Denmark:
Apostles' Service.
3.15 p.m.—Dissolution.
BAND CONCERT.
The band concert will be retransmitted from the Brisbane Botanic Gardens.
4.15 p.m.—From the Botanic Gardens:
Band Concert.
4.30 p.m.—Close Down.

NIGHT SESSION.

- The evening service will be retransmitted from St. Andrew's Church of England, South Brisbane.

7.0 p.m.—From St. Andrew's:

Children's Session.
Children's Hymns and Talk by the Rector.

7.20 p.m.—Organ Music.

7.40 p.m.—Evening: Psalms 46 and 47.
Magnificat and Nunc Dimittis; Tones in F. Anthem, "Hymnus in the Highest"; (Stainer) Hymns 291, "Onward Christian Soldiers"; 262, "For Art Saking"; 237, "Peace, Perfect Peace."
Vesper, "For Del."
Sermon by the Rector; Organ Voluntary.

BAND CONCERT

At the conclusion of the church service the concert by the Brisbane Municipal Concert Band will be relayed from Wickham Park.

8.00 p.m.—Band Concert.

9.00 p.m.—Close Down.

6WF, PERTH.

Sunday.

10.45 a.m.—Tune in.

11 a.m.—Morning Service, relayed from St. Andrew's Presbyterian Church, St. George's Terrace, Perth.

12.15 p.m.—Close down.

2.30 p.m.—Tune in.

FROM THE STUDIO.

4.35 p.m.—Radiologic and Music by International Bible Students' Association.
Topic: "What is Beyond the Grave?"
Characters: Mr. Faithful and Mr. Meek.

4 p.m.—Musical programme, including vocal and instrumental artists.

4.30 p.m.—Close down.

8 p.m.—Tune in.

The Evening Transmission is broadcast on 204.5 metres, as well as the usual wavelength.

7.0 p.m.—Children's bedtime stories.

7.30 p.m.—Evening Service, relayed from the Congregational Trinity Church, St. George's Terrace, Perth.

A RELAY.

9.45 p.m.—Concert by the Perth City Band, conducted by Mr. L. M. Price, and vocal assisting members, relayed from the Government Gardens.

10.2 p.m.—Close down.

7ZL, HOBART

Sunday.

MORNING SESSION.

11 a.m.—Church service from Memorial Congregational Church, Hobart, Prescher Rev. Arthur G. Nelson.
Close down.

AFTERNOON SESSION.

4.30 p.m.—Children's Corner with the "Sunday Lady."

NIGHT SESSION.

7 p.m.—Church Service from St. David's Cathedral, Hobart.
At conclusion of Church service Band concert from St. David's Park or studio concert.

8.10 p.m.—"Mercury" special interstate news service, British Official Wireless News, Weather Forecast, Station announcement, microgram programme.
National Anthem.

Monday, Nov. 28 2FC, SYDNEY.

DAILY MORNING SESSION—7.30 to 8 a.m.

MORNING SESSION.

10.0 a.m.—"Big Ben" and announcements.
10.5 a.m.—Studio music.
10.55 a.m.—"Sydney Morning Herald" news service.
10.50 a.m.—Studio music.
10.55 a.m.—Last minute Racing Information by the 2FC Commissioner.
10.45 a.m.—Studio music.
11 a.m.—"Big Ben," Studio music.
11.05 a.m.—Marching music for school children.
11.5 a.m.—A.P.A. and Buzell's Cable Service.
11.45 a.m.—A reading.
11.55 a.m.—Close down.

MIDDAY SESSION.

12 noon—"Big Ben" and announcements.
12.5 p.m.—Stock Exchange, first call.
12.1 p.m.—Weather forecast, rainfall.
12.5 p.m.—Studio music.
12.10 p.m.—Summary of "Sydney Morning Herald" news service.
12.30 p.m.—Rugby wireless news.
12.30 p.m.—Studio music.
12.35 p.m.—Marching music for school children.
12.40 p.m.—"Blue Hewitt" message.
12.45 a.m.—"A Banjo Song" (Hornery).
12.45 a.m.—From Farmer's Tea Rooms.
The Oak Hall Instrumental Trio (Leader, Mr. Horace Keats).
12.55 p.m.—Studio music.
1 p.m.—"Big Ben," Weather intelligence.
1.2 a.m.—"Evening News" midday news service.
1.20 p.m.—The Oak Hall Instrumental Trio (From Farmer's Tea Rooms).
1.35 p.m.—Stock Exchange, second call.
1.40 p.m.—Marching music for school children.
1.45 a.m.—"Blue Hewitt" message.
"A Hurdle at Midnight" (Lambert).
1.45 p.m.—Studio music.
1.50 p.m.—The Oak Hall Instrumental Trio (From Farmer's Tea Rooms).
2 p.m.—"Big Ben," Close down.

AFTERNOON SESSION.

2 p.m.—"Big Ben" and announcements.
2.5 p.m.—The 2FC Festive Carollers.
"Baby Mine" (Rupp).
2.8 p.m.—Eather Herford, soprano.
"Ashes at Her Lattice" (Woodford-Finden).
3.10 p.m.—Nev Hallett, soloist.
"Because I Love You" (Berlin).
3.15 p.m.—The 2FC Festive Carollers.
"Just Once Again" (Donabont).
"Do You Love Me?" (Merrick).
3.22 p.m.—A reading.
3.30 p.m.—Marching music for school children.
3.40 p.m.—From Farmer's Tea Rooms.
Jeanette Rooney, contralto.
"Great as the Night" (Haber).
3.45 p.m.—The Oak Hall Instrumental Trio.
3.55 p.m.—From the Studio.
Eather Herford, soprano.
"The Meeting of the Waters" (Old Irish Air).
4 p.m.—From Farmer's Tea Rooms.
Irene Duncan, soprano.
"Dream Flair" (Brook).
4.5 p.m.—The Oak Hall Instrumental Trio.
4.15 p.m.—From the Studio.
The Two Festive Carollers.
"Sixty Seconds Every Minute" (Donabont).
4.20 p.m.—From Farmer's Tea Rooms.
Jeanette Rooney, contralto.
"Heart of the Night" (Haber).
4.30 p.m.—The Oak Hall Instrumental Trio.
4.35 p.m.—From the Studio.
Nev Hallett, mezzo.
"One Summer Night" (Sparr).
4.45 p.m.—From Farmer's Tea Rooms.
Irene Duncan, soprano.
"Little Love Not Just for Two" (Lehr).

4.45 p.m.—From the Studio.
Stock Exchange, third call.
4.47 p.m.—Studio music.
5 p.m.—"Big Ben," Close down.

EARLY EVENING SESSION.

5.40 p.m.—From the Studio.
5.45 p.m.—The "Chiefs of 2FC."
5.45 p.m.—"The Helio Man" talks to the children.
5.50 p.m.—Story time for the young folk.
6.00 p.m.—Studio music.
7 p.m.—"Big Ben," Late Sporting News.
7.10 p.m.—"Balgley's" market reports (wheat, wheat and stock).
7.15 p.m.—Fruit and vegetable markets.
7.25 p.m.—Weather and shipping news.
7.35 p.m.—"Evening News" late news service stories.

NIGHT SESSION.

8.40 p.m.—Programme announcements.
8.45 p.m.—Sgt. Montagu, staple numbers.
8.51 p.m.—Win and Windie, English entertainers.
9 p.m.—"Big Ben."
From the Haymarket Theatre, George Street, Sydney; Remo by the Haymarket Operatic Orchestra, under the baton of Mr. Stanley Porter.
8.50 p.m.—From the Studio.
Alfred O'Shea, Australia's foremost tenor.
Aria "Ah, Love To" from "Ricomio and Juliette" (Gounod).
8.50 p.m.—Lionel Lawson, violinist.
8.45 p.m.—From Beale's Concert Salon, Sydney. A programme supplied by the Royal Sydney Apollo Club, conducted by Arnold Mace.
Late weather forecast.
9.15 p.m.—From the Studio.
Montgomery Stuart, in further "Lan Deco" stories.
9.21 p.m.—Lionel Lawson, violinist.
9.20 p.m.—Alfred O'Shea, tenor.
(a) "An Evening Song" (Blumenthal) (repeated).
(b) "Die Gelde Mante" ("La Hubsme") (Puccini).
Note: At 9.30 p.m. Mr. O'Shea's second numbers are:
(a) "The Hairy that Once" (Moore).
(b) "Life and Death" (Cowdridge Taylor).
8.40 p.m.—From the Haymarket Theatre, George Street, Sydney; The Operatic Orchestra, under the baton of Mr. Stanley Porter.
9.50 p.m.—From the Studio.
Win and Windie, English entertainers.
10 p.m.—"Big Ben."
Montgomery Stuart, abscutivista, in a sketch.
10.8 p.m.—Sgd. Montagu, staple numbers.
10.20 p.m.—From the Haymarket Theatre, Sydney; The Haymarket Operatic Orchestra, under the baton of Mr. Stanley Porter.
10.30 p.m.—From the Studio.
Cecil Coy and his Dance Band.
Latest weather forecast.
Dance numbers by Cecil Coy's Band.
10.57 p.m.—Late news and announcements.
11 p.m.—"Big Ben."
Cecil Coy and his Dance Band, in regular numbers until 11.30 p.m.
11.30 p.m.—National Anthem.
Close down.

2BL, SYDNEY

Monday.

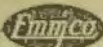
EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

10.30 a.m.—G.P.O. clock and chime.
Musical programme from the Studio.
10.40 a.m.—News from the "Daily Telegraph Pictorial."
10.50 a.m.—Musical programme from the Studio.

Let Your Battery Save Your Purse: Philca.



Your Christmas Gift!

Have you considered your Xmas gift yet? Or are you like most of us at this time of the year? Full of doubts—wondering what to buy, where to get it.

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Price, complete with cord & adaptor £10/10/-

Kit containing Transformer and Chokes, in one aluminium frame, £4/10/-.




EMMCO BATTERY CHARGER, compact, durable, silent in operation. Employs the well known Raytheon cartridge; no valves. Simply plugged into light socket, and joined to battery. Made in two capacities, both chargers have tappings for charging either four or six volt batteries. Price, complete with cord and plug, 21 amps £4/15/0, 5 amps £7/7/0

Use Emmco Electrical Radio Power Units

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Made by
Electricity Meter Mfg.
Co. Ltd.



- 11 a.m.—G.P.O. clock and chimes.
Announcements.
11.5 a.m.—Musical programme from the Studio.
11.15 a.m.—Women's Session. Talk on "Temple" by Miss Gwen Varley, Broadcasters' women's sports authority.
Social Notes. Replies to correspondents, by Mrs. Jordan.
Talk on "Fruit Salads" by Mrs. Jordan.
12 noon.—G.P.O. clock and chimes.
Special ocean forecast and weather report.
12.5 p.m.—Musical programme from the Studio.
13 a.m.—Information. Mails, shipping and port directory.
13.10 p.m.—Heats in call by wireless.
13.14 p.m.—Fruit market report.
13.16 p.m.—Vegetable market report.
13.25 p.m.—Dairy and farm produce market report.
13.32 p.m.—Forage market report.
13.34 p.m.—Fish market report.
13.36 p.m.—Rabbit market report.
13.38 p.m.—Stock Exchange report.
13.40 p.m.—G.P.O. clock and chimes.
Talk to children and special entertainments for children in hospital.
3 p.m.—G.P.O. clock and chimes.
Close down.

AFTERNOON SESSION.

Racing information broadcast immediately after each race, by courtesy of the "Sun" Newspapers.

- 3 p.m.—G.P.O. clock and Chimes.
Musical programme from the Studio.
3.14 p.m.—News from the "Sun."
3.25 p.m.—Musical programme from the Studio.
3.30 p.m.—News from the "Sun."
3.40 p.m.—Dunwoody Dance Band broadcast from the Dunwoody Casino.
4 p.m.—G.P.O. clock and chimes.
News from the "Sun."
4.5 p.m.—Musical programme from the Studio.
4.15 p.m.—Serial story.
4.25 p.m.—Dunwoody Dance Band.
4.40 p.m.—News from the "Sun."
4.55 p.m.—Resume of night's programme.
4.57 p.m.—Racing resume.
4.59 p.m.—Special ocean forecast.
5 p.m.—G.P.O. clock and chimes.
Close down.

EARLY EVENING SESSION.

- 6.45 p.m.—G.P.O. clock and chimes.
Children's session.
6.52 p.m.—Musical programme from the Studio.

SPECIAL COUNTRY SESSION.

- 7 p.m.—G.P.O. clock and chimes.
A.M.L. and F. Co.'s report.
Weather report and forecast by courtesy of Government Meteorological.
Producers' Distributing Society's Fruit and Vegetable market report.
Stock Exchange report.
Grain and fodder report.
Daily produce report ("Sun").
Basketists Conference Notes.
7.15 p.m.—Country news from the "Sun."
7.30 p.m.—Talk on "The Motor Car," by Mr. Martin.

- 8 p.m.—G.P.O. clock and chimes.
Broadcasters' Topical Chorus.
An hour's programme presented by Lindemann's Wines.
8.1 p.m.—Hoyes' banjo troupe (a party of eight instrumentalists playing popular selections).
8.15 p.m.—Miss Bonty Stuart, contralto, will sing two Scottish songs.
8.17 p.m.—Mr. Robert Turner, entertainer: "Organist a playin'" (E. M. Checham); "My Word" (Gay Eden).

- 8.24 p.m.—Mr. Henri de Lisse, violin solos.
8.31 p.m.—Miss Marjorie Skell, soprano.
8.38 p.m.—A five minutes talk on "Wings."
8.45 p.m.—Newtown Band transmitting from the Industrial Hall, Newtown.
9.3 p.m.—Weather report and forecast by courtesy of Mr. E. J. Hares, Government Meteorologist.
9.4 p.m.—A description by Mr. Walter E. Withrow of the wrestling match at the Stadium, Bushmeyer's Bay.
8.40 p.m.—Hoyes' banjo troupe.
9.45 p.m.—Miss Bonty Stuart, contralto.
10 p.m.—G.P.O. clock and chimes.
10.1 p.m.—Broadcasters' all sports expert will talk on general sporting information.
10.15 p.m.—Miss Marjorie Skell.
10.25 p.m.—Mr. Robert Turner: "The Death of the Pig" (Thomas, arr. Turner); "The Australian" (Rodolfo Quins).
10.50 p.m.—Resume of following day's programme.
10.52 p.m.—Dance music by Cyril Kaye, and the Westworth Cafe orchestra. During the intervals between dances, news items by courtesy of the "Sun" Newspapers will be broadcast.
11.30 p.m.—G.P.O. clock and chimes.
National Anthem.

2GB, SYDNEY

Monday.

MORNING SESSION.

- 9 a.m.—Music.
9.5 a.m.—Chorus Talk.
9.15 a.m.—Music.
9.20 a.m.—Psychological Class.
9.40 a.m.—Music.
9.45 a.m.—Health and Diet.
10 a.m.—Close down.

AFTERNOON SESSION.

- 3.30 p.m.—Music.
3.37 p.m.—Address.
3.55 p.m.—Music.
4 p.m.—Address, Mr. E. E. Bennett.
4.25 p.m.—Music.
4.35 p.m.—Close down.

EVENING SESSION.

- 7 p.m.—Music.
7.5 p.m.—Address by Mr. B. E. Bennett.
7.15 p.m.—Music.
7.50 p.m.—Address by Mr. J. E. Powell.
7.50 p.m.—Music.
7.55 p.m.—Recital by Mr. Heath Burdock.
7.55 p.m.—Instrumental. Trio: Dan Seully, Marielle Lang, Ada Brook.

NIGHT SESSION.

- 8.5 p.m.—Address by Dr. E. K. Root.
9.10 p.m.—Songs by Mr. F. J. Todd.
8.25 p.m.—Instrumental Quartette: Dan Seully, Marielle Lang, Ada Brook.
8.4 p.m.—Songs.
9 p.m.—Address by Rev. R. B. S. Hammond: "Mending Broken Men."
9.15 p.m.—Violin solos.
9.25 p.m.—Violin Duet with piano accompaniment. De Seully, Ada Brook.
9.35 p.m.—Songs.
9.41 p.m.—Violin solos, Dan Seully.
9.45 p.m.—Utherio Talk.
10 p.m.—Close down.

2 UW, SYDNEY

Monday.

MORNING SESSION.

- 9 a.m.—News, shipping, mails, studio items.
9.45 a.m.—Women's session.
9.59 a.m.—Resume of forward programme.
10 a.m.—Close down.
12.15 p.m.—Special employees' luncheon session.
12.45 p.m.—Close down.

AFTERNOON SESSION.

- 2 p.m.—Studio items.
2.59 p.m.—Resume of forward programme.
3 p.m.—Close down.

EVENING SESSION.

- 8 p.m.—Studio Items.
8.59 p.m.—Resume of forward programme.
9 p.m.—Close down.

NIGHT SESSION.

- 7 p.m.—Sonora selection.
7.10 p.m.—Where to go.
7.15 p.m.—Pianoforte solo, selected.
7.15 p.m.—Miss Ailina O'Connor: Songs at the piano.
7.19 p.m.—Madame Lillian Mar, soprano: "Elfin Love" (Rodgson).
7.23 p.m.—George Livermore, baritone: Selected.
7.25 p.m.—Miss Ruth Harden, contralto: "The Auld House."
7.32 p.m.—B. H. Hooper, flautist: "Largo" (Hauddel).
7.37 p.m.—Miss Phyllis Stephens, mezzo soprano: Selected.
7.41 p.m.—Violin duet: Professor C. Sauer and Mr. Bruce Hudson: Selected.
7.46 p.m.—Esther McAlpin, contralto: "Sink, Red Sun" (Del Reigo).
7.50 p.m.—Jean Edwards, soprano: "Obstination" (Fontenailles).
7.54 p.m.—George Livermore, baritone: Selected.
7.59 p.m.—Miss Ruth Harden, contralto: "Kilnarey" (Balfe).
8 p.m.—Photographic chat: Messrs. Harrison.
8.5 p.m.—G. H. Hooper, flautist: "Cradle Song" (Spohr).
8.9 p.m.—Miss Phyllis Stephens, mezzo soprano: Selected.
8.14 p.m.—Harry Cavill, baritone: Selected.
8.18 p.m.—Violin solo, Professor C. Sauer: "Cavatina" (Raff).
8.22 p.m.—Esther McAlpin, contralto: "Thou art like a lovely flower" (Schumann).
8.27 p.m.—Jean Edwards, soprano: "Kiegion" (Massinet).
8.33 p.m.—Madame Arline Sauer, pianoforte solo: Selected.
8.36 p.m.—Ailina O'Connor: Songs at the piano.
8.40 p.m.—Madame Lillian Mar, soprano: "Prince Charming" (Lohman).
8.45 p.m.—Harry Cavill, baritone: Selected.
8.49 p.m.—Violin and piano, Professor C. Sauer and Mr. Bruce Hudson: Selected.
8.54 p.m.—Esther McAlpin, contralto: "The Carpet" (Sanderson).
8.58 p.m.—Ailina O'Connor: Songs at the piano.
9 p.m.—Weather forecast and news bulletins.
9.2 p.m.—Professor C. Sauer, violin solo: "Andantine" (Marti-Areider).
9.13 p.m.—Studio selections.
9.28 p.m.—Resume of forward programme.
9.30 p.m.—God Save the King.
9.30 p.m.—Accompanist: Madame Arline Sauer.

3LO, MELBOURNE.

Monday

MIDDAY SESSION.

- 12 noon.—Melbourne Observatory Time Signal.
British Official Wireless News from Rugby.
London's and the Australian Press Association cables. "News" news service.
12.25 p.m.—STUDIO QUARTET.
Overture, "Carolana" (Beethoven).

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*The Battery with
the kick!*

MADE BY THE CLYDE ENGINEERING CO., LTD.

- 12.30 p.m.—REGINALD BRADLEY, violin:
"Miser in G" (Beethoven).
12.37 p.m.—Miss. Features information.
12.40 p.m.—MARY MAEK, contralto:
"O What Comes Over the Sea" (Coleridge)
"What Comes Over the Seas" (Coleridge Taylor).
12.44 p.m.—TASMA TIERNAN, 'cello.
AGNES FORTUNE, piano:
"Rondino" (Beethoven).
12.54 p.m.—JOHN D. FRASER, haritone:
"Farewell to the Desert."
"Down the Vale."
3 p.m.—Time Signal. Are you helping your children to find the occupations in life best suited to their tastes and abilities. Don't let them become a round peg in a square hole.

- 1.1 p.m.—STUDIO QUARTET:
"Minuet" from Sonata Op. 49, No. 2 (Beethoven).
1.11 p.m.—Meteorological Information. Weather forecast and rainfall for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. River reports.
1.18 p.m.—MARY MAEK, contralto:
"Farewell" (Carl Schubert).
"Lullaby" (Carl Schubert).
1.23 p.m.—STUDIO QUARTET:
"Slow movement, C Minor Sonata" (Beethoven).
1.33 p.m.—JOHN D. FRASER, haritone:
"Songs My Mother Taught Me" (Dvorak).
"Kathleen Mavourneen."

- 1.42 p.m.—AGNES FORTUNE, piano:
"Rondino, A Major" (Beethoven).
1.56 p.m.—Under the auspices of the National Safety Council in Australia:
MR. ALBERT KELLY, president of the National Safety Council, will speak on:
"The Objects of the Council."

AFTERNOON SESSION.

- 2 p.m.—Melbourne Observatory Time Signal.
2.1 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"I Wonder Who's My Happy" (Alast).
"When I Look in You" (Jones).
"Just the Same" (Donkison).
2.16 p.m.—MRS. DOROTHY SILK:
"Bonanzas."
2.27 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"I Won't Kiss You Good-night" (Tucker).
"Go With an Elephant if You Wanna Be Something Big" (Tucker).
"Kerada" (Williams).
2.35 p.m.—RITA HILTON, soprano:
"I Thought I'd Die" (Henderson).
"Maybe You" (Fair).
2.42 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"The Bird of the Blues" (Henderson).
"The Wind Blew Through His Whiskers Just the Same" (Conrad).
"Sweetie o' Mine" (Lizgan).
2.50 p.m.—MARDON LIGHTFOOT, steel guitar:
"A Kentucky Barbecue."
"Serenada Felix."
2.57 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"Oh, What a Pal was Whoozie" (Kahn).
"Lo Down" (Rose).
"Clarita Becis Rose from Sunny Italy" (Lewis).
2.57 p.m.—RITA HILTON, soprano:
"So's Your Old Lady" (Burke).
"The Moon" (Hardie and Down).
3.07 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"Fins" (Denica).
"Takes in the Sun" (Woods).
"Whipped Cream," piano solo (Lange).
3.23 p.m.—MARDON LIGHTFOOT, banjo:
"Summer Evening"—Berovic.
"Newport Gallop."
3.31 p.m.—MISS FLORA PELL, Inspector of Schools:
"Domestic Economy."
3.43 p.m.—"Herald" news service.
Stock Exchange information.

- 5 p.m.—Close down.
Results of Asot Pony Races will be given at intervals during the afternoon.

EVENING SESSION.

- 6.30 p.m.—Answers to letters and Birthday Greetings by "LITTLE MISS KOOKA-BURRA."
6 p.m.—STUDIO QUARTET:
"The Charming Doll" (Savico).
6.5 p.m.—CAPT. DONALD MACLEAN:
"Fishes and Hot Potatoes."
6.52 p.m.—STUDIO QUARTET:
"Child Studies" (Schumann).
6.59 p.m.—"LITTLE MISS KOOKA-BURRA:
"The Plucky Pina" (continued).
6.59 p.m.—Official report of Newmarket Stock sales by the Associated Stock and Station Agents, Bourke Street, Melbourne. Number of sheep and cattle drafted for week's sale.
6.46 p.m.—"Herald" news service. Weather, Shipping movements.
6.52 p.m.—Stock Exchange information.
6.57 p.m.—Fish market reports by J. R. Rogge, Ltd. Rabbit prices.
6.58 p.m.—River reports.
7.2 p.m.—Market reports by the Victorian Producers' Co-operative Co., Ltd.: Poultry, grain, hay, straw, late dairy produce, potatoes and milms. Market reports of fruit by the Victorian Fruit Merchants' Association—retail prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus fruits.

NIGHT SESSION.

- 7.15 p.m.—Under the auspices of the Boy Scouts' Association, COMMISSIONER DR. C. GORDON MEADAM:
"Social Migration and Counting."
7.26 p.m.—Mr. E. C. H. TAYLOR will speak on:
"The Girl and the Girl's Aid."
"School Life and School Sports."
7.48 p.m.—Under the auspices of the DEPARTMENT OF AGRICULTURE, MR. J. T. RAMSAY, Potato Expert, will speak on:
"Potato Growing in Interim."
8 p.m.—MR. BERGMIEER, middle distance professional champion of the world:
"The Half Mile."
8.15 p.m.—"CUBBY CITY BAND":
"Mighty Lak a Ron."
8.27 p.m.—MR. MAGNUS COHN will speak on:
"The Million Shilling Fund."
8.32 p.m.—WILLIAMSTOWN OLD TIME STRIPPERS, produced by Mr. DAVE WAHLE:
THE COMPANY:
Prologue, "Daddy Baby."
Opening Chorus, "Dixie Land."
Arranged by Mr. Dave Ward (piano).
Ch. FRANK WILCHER, the Mayor, and Cr. J. J. HILTON, ex-Mayor of Williamstown Brief Address, "Williamstown and Its Mists."
Mr. BERT MOON:
Coco Song, "Down South of Caroline."
Chorus by Minstrels.
Tyroland Song.
Miss HUND, song and chorus:
"My Heart is in New York."
BANDMASTER J. SCOTT, trombone:
Speciality, "Old Kentucky Home."
Chorus by Company.
M. J. H. SMITH:
"Gone with the Wind" Song.
Chorus by Company.
DOUBLE QUARTET (Instrumental),
"Four Old Joe."
Soloist, Mr. J. Back, Chorus, Company.
MR. ED. HALL, Whistling Solo.
FINALE, THE COMPANY.

- 9.15 p.m.—Announcements. Girl Guide News. NATIONAL AUTOMOBILE CLUB OF VICTORIA'S SAFETY MESSAGE FOR TODAY IS FOR ALL DRIVERS:
"In the interests of general safety, learn, give and obey the recognised traffic signals." Under the auspices of the Health Association of Australia, the HEALTH MESSAGE for to-day is:
"Preventive Medicine makes human life better, longer, more capable and useful, happier and prolongs our days."—Sir George Newman.

- 9.20 p.m.—"CUBBY CITY BAND":
March, "Catalina Band" (Pakos).
9.27 p.m.—DOBATHRA MACMASTER, piano rental:
Solo: Appassionata (2nd and 3rd movements) (Beethoven).
Etude in D Flat (Liszt).
Andante Finale from "Lucia di Lammermoor," for the left hand alone (Liszt).
Liszt'sky.

- 9.47 p.m.—We have much pleasure in announcing the re-appearance of the well-known violinist, MARGIE FOSTER:
"Lichtstraal" (Knebel).
"Traumerei" (Schumann).
9.48 p.m.—"CUBBY CITY BAND":
"Waltz Rosen" (Tabor).
March "Under the Allied Banner" (O'Brien Shaw).

- 10.2 p.m.—"Arens" News Service. Meteorological information. British Official Wireless News from Rugby Island Steamer Measurement.
10.9 p.m.—ETHEL FORSHAW, soprano:
"The Ash" (Rubenstein).
"Only the River Running By" (Hopkins).
10.21 p.m.—"CUBBY CITY BAND":
Curtain solo, "Imperial Polka" (Howe).
Soloist, A. Parry.
March "Americana."
10.26 p.m.—JOHN D. FRASER, haritone:
March "Under the Allied Banner."
"Mighty Lak a Ron."
10.31 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"I Wonder Who's My Happy" (Dixon).
10.35 p.m.—ETHEL FORSHAW, soprano:
"Elnak Dream" (Wagner).
"Elizabeth's Prayer" (Wagner).
10.46 p.m.—MARGIE FOSTER, violin:
"Garden" (Vardi).
10.50 p.m.—JOHN D. FRASER, haritone:
"O Dr. These Tears."
"The Silver Ring."
10.57 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
Selected.

- 11 p.m.—OIR GREA THOUGHTS:
"Art is kept alive, not by the established trade in it, but by the desperate efforts of art-loving individuals to create and create it out of nothing for its own sake."
—Bernard Shaw.
Symphony to the Million Skilling Permanent Orchestra Fund.
11.11 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
11.46 p.m.—GOD SAVE THE KING.

4QG, BRISBANE

Monday,

MIDDAY SESSION.

- 1.0 p.m.—Market Reports. Weather Information. Supplied by the Queensland Weather Bureau. News Services supplied by "The Daily Mail" and "The Daily Standard."
1.15 p.m.—Lunch Hour Music.
1.18 p.m.—Standard Time Signal.
2.0 p.m.—Close Down.

AFTERNOON SESSION.

- 3.30 p.m.—Afternoon Tea Music.
4.11 p.m.—News Service Supplied by "The Telegraph."
4.30 p.m.—Close Down.

EARLY EVENING SESSION.

- 6.0 p.m.—News Service Supplied by "The Daily Standard."
6.9 p.m.—Lecturer: A World Call Talk "The World Call," by Mr. F. Cross (Soloist).
6.50 p.m.—The Children's Session: Stories by Schools.
7.0 p.m.—Market Reports; Stock Reports.
7.30 p.m.—Weather News; "Daily Standard" News.
7.45 p.m.—Standard Time Signal.

RADIOKES

ANNOUNCES

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This Latest Product of Radiokes Laboratory and Factory has been released as an answer to continuous demands by the Radio Public for such an Instrument at a popular price.

This unit is designed along conventional lines, and is carried out in the usual excellent Radiokes Style, with "low loss," dopeless windings covered with brilliant green silk, connections made to the now famous Radiokes "Solder all the way" lugs and screw-terminals for those who prefer to build without using a soldering kit.



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Give Radiokes Kits, the most acceptable present for your friend.



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Price: **8/6** each

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Which make Wonderful Xmas Gifts

Circuit Kits	£7/6/-
Neutrodyne Kits	£1/12/6
Mayolan "B" Power Units	£14/10/-
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3 Circuit Tuners	14/6
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Bayer Kit	£1/5/-
Brewing Deals Kit	£2/7/6
Bloculars	£1/10/6
Radiokes Tubes	18/-
Radiokes Power Tubes	20/-



Amperite is essential for maximum tube life, best quality, simplicity of control and absolute satisfaction.

Price: **6/9** each

Metropolitan Electric Co. Ltd., 27-29 King St., Sydney

And at Melbourne, Brisbane, Auckland, Hobart and Launceston.

7.45 p.m.—Lectures: "Are Pipes Profitable," Mr. E. J. Shelton, Instructor in Pig Raising.

NIGHT SESSION.

The recital by the Students of Miss Marie Knight-Corkran will be relayed from the Albert Hall. Miss Una Vowles assisting artist.

8.0 p.m.—From the Albert Hall.
Choir, "Dancing Boulemae" (Roussini).
Contralto Solo, "O Lovely Night" (Hoonid).
Miss Lorraine Lochie.
Soprano Solo, "Hush" (Dell Aquia).
Miss Joyce Stirling.
Pianoforte, "Dance Night" (Scott).
Miss Whinnie Fairie.
Recitation, "The Song of the Sea Wind" (Auntie Dumen).
Miss Una Vowles.
Soprano Solo, "Be Suzan Rose" (Ardill).
Miss Nell Knight-Corkran.
Piano duet, "Rondoe" (Beethoven-arr. Haigh).
Miss Phyllis Mackham, 1st Piano; Miss Marjorie Gordon, 2nd Piano.
Contralto Solo, "Vorede" (Teati).
Miss Nina Phipps.
Double Trio, "Duke Songbook" (Maree).
Misses D. and J. Bailey, M. and B. Middleton, N. Casey and Master Jack Corkran.
Soprano Solo, "Salsan" (Agnes Mary Lamb).
Miss Phyllis Vermer.

BAND CONCERT.

8.0 p.m.—From the Hall of the Museum. An interesting programme of music by the Brisbane Excelsior Band.
9.30 p.m.—From the Studio.
Overture, "Die Yelammbill" (Reiseger).
The Studio Orchestra (Conductor, Mr. A. R. Featherston).
Contralto Solo, "Break, Break, Break" (Carver).
Miss Dale's Petaluma.
A Triolet for Tenor, "Spirital Ecstasy" Will H. Inter.
Bass Solo, "Off to Philadelphia" (Haynes).
Mr. Stanley Tambling.
Air de Ballet, "Language of the Rose" (Kestechmer).
The Studio Orchestra.
Soprano Solo, "The Matinales" (Kjurnif).
Miss Eileen Mear.
Saxophone Solo, "Valse-Erica" (Wadhoff).
Mr. C. H. Hart, accompanied by the Studio Orchestra.
Bass Solo, "The Cobblers' Song" (Norlin).
Mr. Stanley Tambling.
March, "Cross Country" (Cheney).
The Studio Orchestra.
10.0 p.m.—"The Daily Mail" News; Weather News; Close Down.

6WF, PERTH.

Monday.

12.30 p.m.—Tune in.
12.55 p.m.—Market, News, and Cables.
1.0 p.m.—Time signal from Perth Observatory.
1.1 p.m.—Weather news, supplied by the Meteorological Bureau of Western Australia.
1.2 p.m.—Studio Quintette, conducted by Mr. Val Smith.
2 p.m.—Close down.
2.20 p.m.—Tune in.
2.25 p.m.—Afternoon Tea Concert, relayed from the Odeon, City Hay Street.
Orchestra numbers by Mrs. Hogg's Orchestra.
Vocal Interludes from the Studio.
4.50 p.m.—Close down.
6.45 p.m.—Tune in.
The Evening Transmission is broadcast on 104.5 Metres, as well as the usual wavelength.
6.50 p.m.—Stories for the Kiddies, by Uncle Henry and Duff.
7.20 p.m.—Stocks, Markets, News.
7.45 p.m.—Tells by Linnell, Le Somer, Director of the Zoological Gardens, South Perth.
8 p.m.—Time signal from Perth Observatory.
8.1 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

BAND NIGHT.

3.5 p.m.—Concert by the B.S.L. Band, conducted by Mr. W. A. Halvorsen.
10 p.m.—Late news items, by courtesy of "The Daily News" Newspaper Co.
Shows within range announcement.
Weather Report and Forecast.
12.30 p.m.—Close down.

MIDDAY SESSION.

12 noon—"Big Ben" and announcements.
12.3 p.m.—Stock Exchange, first call.
12.3 p.m.—Official weather forecast; rainfall.
12.5 p.m.—Studio music.
1.10 p.m.—"Sydney Morning Herald" news service.
Rugby wireless news.
11.90 p.m.—Marching music for school children.
12.40 p.m.—Kathleen Stollery, memo.
12.45 p.m.—From Farmer's Tea Rooms: The Oak Hall Instrumental Trio. Leader, Mr. Hogg.
12.55 p.m.—Studio music.
1 p.m.—"Big Ben." Weather intelligence.
1.15 p.m.—"Evening News" midday news service.
Producers' Distributing Society's Report.
1.20 p.m.—The Oak Hall Instrumental Trio.
1.25 p.m.—Stock Exchange, second call.
1.30 p.m.—Marching music for school children.
1.40 p.m.—From the Studio:
Kathleen Stollery, memo, and Studio music.
1.50 p.m.—From Farmer's Tea Rooms: The Oak Hall Instrumental Trio.
2 p.m.—"Big Ben." Close down.

7ZL, HOBART

Monday.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

2 p.m.—G.P.O. Clock chimes the hour.
3.1 p.m.—Tune in selection.
3.5 p.m.—Robert Stock Exchange quotations. Weather information.
4.05 p.m.—Interstate announcements.
4.15 p.m.—Selections by 7ZL Studio Trio: March, "Our Director" (Bigelow).
"Chandos of Africa" (Sandford).
"The General in my Garden" (Adams).
Cello Solo, Selected, Miss Bessie Lewis, Selection from the Student Prince (Domberg).
Violin Solo Selected: (Mr. E. J. McCann).
"Nalada of the Brook" (Ehrle).
"Nuit Enchantee" (Vivier).
"Marianne".
4.15 p.m.—Fashion talk by "Aunt Edna" of Brownsell Ltd.
4.30 p.m.—Close down.

EARLY EVENING SESSION.

8.20 p.m.—Children's Corner "Uncle Peter's" half hour.
9 p.m.—"Uncle Peter" talks to the children.

NIGHT SESSION.

7.20 a.m.—Musical selection.
7.35 p.m.—Physical Culture talk by Lieutenant Rexford McKeonock.
7.40 p.m.—"Mercury" special Tasmanian news service. Railway auction produce sales. Weather forecasts. Hobart Stock Exchange quotations.
8 p.m.—G.P.O. Clock chimes the hour.
8.1 p.m.—Vocal and instrumental numbers from Findlay Music Showroom, Elizabeth Street, Hobart.
8 p.m.—Talk by Mr. E. T. Emmett, Tasmania as a Tourist Resort, subject.
"The Perils North-west".
8.40 p.m.—British Official Wireless News.
8.50 p.m.—"Mercury" special Interstate news service. Tasmanian District Weather reports. 9 p.m. Weather forecasts. Station announcements.
National Anthem.

Tuesday, Nov. 29
2FC, SYDNEY.

EARLY MORNING SESSION—7 to 8 a.m.

MORNING SESSION.

10 a.m.—"Big Ben" and announcements.
10.5 a.m.—Studio music.
10.18 a.m.—"Sydney Morning Herald" news service.
10.30 a.m.—Studio music.
10.35 a.m.—Late Sporting News by the 2FC Racing Commissioner.
10.45 a.m.—Studio music.
11 a.m.—"Big Ben."
Marching music for school children.
11.5 a.m.—A.P.A. and Reuter's Cable Service.
11.15 a.m.—Studio music.
11.15 a.m.—A talk on Home Cooking and Recipes, by Miss Ruth Farnet.
12.30 a.m.—Close down.

EARLY EVENING SESSION.

5.45 p.m.—The Chimes of 2FC.
8.45 p.m.—"Hello Man" talks to the children.
6.20 p.m.—Story time for the young folk.
8.4 p.m.—Studio music:
Marjorie Burkett, blind pianist.
("Improvising F. Flat Major" (Schubert).
("Raindrop Prelude" (Chopin).
("Scherzetto in F Minor" (Mendelssohn).
6.05 p.m.—Studio music.
7 p.m.—"Big Ben." Late sporting news.
7.10 p.m.—Daily's market reports (wool, wheat and stock).
7.18 p.m.—Fruit and vegetable markets.
7.20 p.m.—Weather and shipping news.
7.28 p.m.—"Evening News" late news service.

NIGHT SESSION.

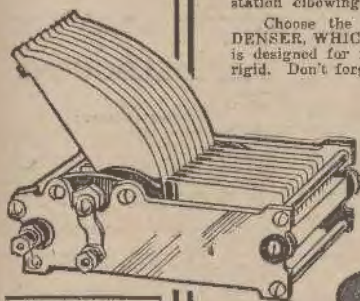
1.45 p.m.—Programme announcements.
7.45 p.m.—"Fido and Jelem."
8 p.m.—"Big Ben."
From the Lyceum Theatre, Pitt Street, Sydney: Items by the Orchestra.



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2 UW, SYDNEY

Tuesday.

MORNING SESSION.

- 9 a.m.—News, shipping, mails, studio items.
 9.55 a.m.—Women's Week.
 9.58 a.m.—Resume of forward programme.
 10 a.m.—Close down.
 10.15 p.m.—Special employees Luncheon Session.
 12.45 p.m.—Close down.

AFTERNOON SESSION.

- 2 p.m.—Studio items.
 2.53 p.m.—Resume of forward programme.
 3 p.m.—Close down.

EVENING SESSION.

- 8 p.m.—Studio items.
 8.52 p.m.—Resume of forward programme.
 9 p.m.—Close down.

NIGHT SESSION.

- 7 p.m.—"Sonora" selection.
 7.4 p.m.—"Where A Go"
 7.40 p.m.—Pianoforte Solo, selected.
 7.45 p.m.—Miss Evelyn Davison, clarinetist.
 "How I Envyed Melindy."
 7.52 p.m.—Miss Dorothy Starr, mezzo-soprano.
 "Gloaming" (Mrs. Weston).
 7.58 p.m.—Miss May Croft, soprano, selected.
 7.58 p.m.—Pianoforte Solo.
 Professor C. Sauer.
 7.55 p.m.—James Jackson, baritone.
 Selected.
 7.58 p.m.—Miss Nancy Marley, contralto.
 Selected.
 7.44 p.m.—Miss Nellie Scouler, violin solo.
 Selected.
 7.48 p.m.—Miss Evelyn Davison, clarinetist.
 "Fit for Tal".
 7.55 p.m.—Miss May Croft, soprano.
 Selected.
 7.58 p.m.—James Jackson, baritone.
 Selected.
 8 p.m.—Miss Nellie Scouler, violin solo.
 Selected.
 8.7 p.m.—Miss Nancy Marley, contralto.
 Selected.
 8.11 p.m.—Miss Dorothy Starr, mezzo-soprano.
 "April is a Lady".
 8.15 p.m.—Gems of the Opera No. 16. G. P. Mansel.
 9 p.m.—Weather forecast and news items.
 9.7 p.m.—Studio selections.
 9.28 p.m.—Resume of forward programme.
 9.30 p.m.—God Save the King.

- 8.10 p.m.—From the Royal Colonial Institute:
 A programme supplied by Section 2ED at the Annual Reception:
 1. Alfred Cunningham, baritone:
 "Ships on the sea" (Hobson).
 8.50 p.m.—Miss Van Der Riet, 'cello solo:
 "Nonaire" (Mozhalkovsky).
 8.56 p.m.—Miss Madeline Vera Tamm, soprano:
 "Will you be home" (Hobson).
 8.56 p.m.—Miss Eschberg, the Governor, actress.
 8.56 p.m.—Miss Alexander Svatovskiy, pianoforte solo:
 (a) "Balletic in D Minor" (Mozart).
 (b) "Nocturne" (Schubert-Grove).
 (c) "Tandem" (Ramus-Grover).
 9.00 p.m.—Miss Charles Lawrence, entertainer:
 "The Art of Song Writing" (Grey).
 9.05 p.m.—"Big Top."
 From the Studio: Latest weather forecast.
 9.7 p.m.—From the Lyceum Theatre, Pitt Street, Sydney: Orchestra items.
 9.15 p.m.—From the Studio:
 Braden Hill, will tell the story of "Gerrards, the Governor."
 9.23 p.m.—From the Lyceum Theatre, Pitt Street, Sydney: The second portion of the programme supplied by 2FC artists at the Annual Reception:
 1. Alfred Cunningham, baritone:
 "Who is Sylvia" (Hobson).
 9.30 p.m.—Miss Van Der Riet, 'cello solo:
 "Wind in Willow" (Grove).
 9.50 p.m.—Miss Madeline Vera Tamm, soprano:
 "Dramatic of Home" (Madame Realy).
 10 p.m.—Miss Alexander Svatovskiy, pianoforte solo:
 (a) "Marchette" (Hess-Raby).
 (b) "Imitation" (Gardner).
 (c) "Lullaby to a child" (Hobson).
 10.10 p.m.—Miss Charles Lawrence, entertainer:
 "Three Blind Mice."
 10.20 p.m.—From the Lyceum Theatre, Pitt Street, Sydney: Orchestra items.
 10.30 p.m.—From the Studio:
 Latest weather forecast.
 10.55 p.m.—From the Ambassadors, Sydney: Items by the Ambassadors Orchestra, conducted by Mr. A. Harnett.
 10.57 p.m.—Latest news and announcements.
 11 p.m.—"Big Top."
 The Ambassadors' Orchestra in popular numbers until 11.30 p.m.
 11.30 p.m.—National Anthem.
 Close down.

2BL, SYDNEY.

Tuesday.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

- 10.30 a.m.—G.P.O. clock and chimes.
 Musical programme from the Studio.
 10.40 a.m.—News from the "Daily Telegraph Fictional."
 10.50 a.m.—Musical programme from the Studio.
 11 a.m.—G.P.O. clock and chimes.
 Amusements.
 11.15 a.m.—Women's session, Social Notes.
 Replies to correspondents by Mrs. Jordan.
 Talk on "Diet Values" by Mr. Adema, A.M.S.
 12 noon—G.P.O. clock and chimes.
 Special ocean forecast and weather report.
 12.4 p.m.—Musical programme from the Studio.
 12.8 p.m.—Information. Mails, shipping, and port directory.
 12.11 p.m.—Mails in mail by wireless.
 12.13 p.m.—Fruit market report.
 12.16 p.m.—Vegetable market report.
 12.17 p.m.—London metal market report.
 12.19 p.m.—Dairy and farm produce market report.

- 12.22 p.m.—Foreign market report.
 12.24 p.m.—Fruit market report.
 12.24 p.m.—Rubbish market report.
 12.24 p.m.—Stock Exchange report.
 12.30 p.m.—H.M.V. gramophone report.
 1.27 p.m.—Stock Exchange report.
 1.30 p.m.—G.P.O. clock and chimes.
 Talk in children and special entertainment for children in hospital.
 2 p.m.—G.P.O. clock and chimes.
 Close down.

AFTERNOON SESSION.

- Having information broadcast immediately after each race by courtesy of the "Sun."
 3 p.m.—G.P.O. clock and chimes.
 News from the "Sun."
 3.15 p.m.—Civil Service Science Trio. Director: Miss de Grey Brewer.
 3.50 p.m.—G.P.O. clock and chimes.
 News from the "Sun."
 3.40 p.m.—Musical programme from the Studio.
 3.50 p.m.—News from the "Sun."
 4 p.m.—G.P.O. clock and chimes.
 Civil Service Science Trio.
 4.15 p.m.—Musical story.
 4.25 p.m.—Special programme from the Studio.
 4.35 p.m.—News from the "Sun."
 4.40 p.m.—Resume of night's programme.
 4.47 p.m.—Racing resume.
 4.55 p.m.—Special ocean forecast.
 5 p.m.—G.P.O. clock and chimes.
 Close down.

EARLY EVENING SESSION.

- 6.40 p.m.—G.P.O. clock and chimes.
 Children's session.
 6.50 p.m.—Musical programme from the Studio.

SPECIAL COURSE SESSION.

- 7 p.m.—G.P.O. clock and chimes.
 Australian Mercantile, Land and Finance.
 Cox's report.
 Weather report and forecast by courtesy of Government Meteorologist.
 Producers' Distributing Society's fruit and vegetable market report.
 Stock Exchange report.
 Grain and fodder report ("Sun").
 Dairy produce report ("Sun").
 N.R.M.A. talk.
 7.45 p.m.—Country news from the "Sun."
 7.50 p.m.—Talk by a member of the Ladies' League.
 7.59 p.m.—Talk by a member of the St. John Ambulance Association.
 8 p.m.—G.P.O. clock and chimes.
 Broadcasters' Typical Chorus.
 8.3 p.m.—Broadcasters' Light Orchestra, under the direction of Mr. J. Knight Barnett.
 8.11 p.m.—The Welsh Male Voice Choir, conducted by Mr. Lindley Evans.
 8.18 p.m.—Mr. Bryce Carter, 'cello solo.
 8.25 p.m.—The third special feature programme presented and arranged by Mr. Roland Foster of the Conservatorium of Music, Sydney. The programme will introduce new songs, duets, and trios for ladies' voices, and a travel talk by Mr. Foster on "Monte Carlo and the Riviera."
 9.25 p.m.—Weather report and forecast by courtesy of Mr. G. J. Mares, Government Meteorologist.
 9.24 p.m.—Broadcasters' Light Orchestra.
 9.36 p.m.—The Welsh Male Voice Choir (part songs).
 9.43 p.m.—Mr. Bryce Carter.
 9.52 p.m.—Broadcasters' Light Orchestra.
 10 p.m.—G.P.O. clock and chimes.
 10.1 p.m.—Resume of following day's programme.
 10.5 p.m.—Broadcasters' Light Orchestra.
 10.15 p.m.—Dance music by Cyril Kaye and the Wentworth Orchestra, transmitting from the ballroom of the Wentworth. During the intervals between dances, news items by courtesy of the "Sun" will be read from the Studio.
 12 midnight—G.P.O. clock and chimes.

3LO, MELBOURNE

Tuesday.

MIDDAY SESSION.

- 12 noon—Melbourne Observations. Time Sign.
 12.1 p.m.—Metal prices received by the Australian Mine and Metals Association from the London Stock Exchange this day. British Official Wireless News from Rugby. Reuters and the Australian Press Association cables. "Argo" news service.
 AN HOUR WITH FRENCH COMPOSERS.
 12.26 p.m.—REGENT GRAND CONCERT ORCHESTRA:
 Overture, "La Monna" (Franckhals).
 12.30 p.m.—MONA NUGENT, soprano:
 "Elmy" (Massenet).
 "Ambade Le Roi D'ys" (Lalo).
 12.37 p.m.—Stock Exchange information.
 12.40 p.m.—REGENT GRAND CONCERT ORCHESTRA:
 Extract, "Calliope Suite" (Chabissale).
 (a) Pas des Eschages.
 (b) Andante.
 12.46 p.m.—E. MASON WOOD, baritone:
 "Berceuse" (Jasany).
 "Serenade de Don Juan" (Godard).
 12.57 p.m.—KITTY ANDERSON, 'cello.
 "Cry" (Saint Saens).
 1.1 p.m.—Meteorological information. Forecast and rainfall for Victoria, South Australia, Tasmania, and New South Wales. Ocean forecast. River reports for Victoria.



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- 1.11 p.m.—REGENT GRAND CONCERT ORCHESTRA:
Selection, "Hill-Pink" (Christine).
1.22 p.m.—MONA NUGENT, soprano:
"A picture on canvas" (Blue).
"Lenfant prodigieux" (Dubinsky).
1.30 p.m.—Under the auspices of the National Safety Council of Australia.
MR. J. POWLER, of the Victorian Railway Department, will speak on:
"Hasty First," from the Railway point of view.
1.37 p.m.—E. MASON WOOD, baritone:
"Mignon" (D'Hardade).
"Mica Spala" (Scane).
1.45 p.m.—REGENT GRAND CONCERT ORCHESTRA:
Suite, "Scenes Pittoresques" (Fouadain).
2 p.m.—Close down.

AFTERNOON SESSION.

- 3 p.m.—Melbourne Observatory Time Signal.
4.1 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"The Toy Town Parade" (Morville).
"Once Over Again" (Rich).
"Rolling Down the River" (Liang).
2.10 p.m.—"AU FAIT":
"Fashion Talk."
2.25 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"When Lights are Low in Cairo" (Merkes).
"Recessa Venetian Skies" (Lewls).
"Yah Gonna Be Home To-night" (Dubal).
2.33 p.m.—KATHLEEN SIMMS, soprano:
"Sometimes in Summer" (Sterndale-Bennet).
"Fairy Lures" (Stanford).
2.42 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"I'm Telling the Birds" (Bresen).
"The Spell of the Moon" (Kahn).
"So-La-Ya" (Kahn).
3.50 p.m.—BOBBY PEARCE, baritone:
"Fanciulli Fanciulli" (Denza).
"Three for Jack" (Squires).
3.57 p.m.—MAGGIE POSTER, violin:
Scottish Selection.
"Minuet" (Foderewski).
4.10 p.m.—KATHLEEN SIMMS, soprano:
"Have you seen but a White Lily Grow" (Old English).
"By thy Banks, Gentle Moor" (Dr. Boese).
4.15 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"The Hanging Gardens of Babylon" (Carle).
"Collette" (Kahn).
"Honoatolu Moon" (Lawrence).
4.25 p.m.—BOBBY PEARCE, baritone:
"Trouper Johnny Laddie" (Tennie).
"The King's Minstrel" (Pimmett).
4.32 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"Rhythm is the Thing" (Haltz).
"Golden Gate" (Leslie).
"Zig Zag," piano solo (Bloom).
4.45 p.m.—"Herald" news service.
Stock Exchange information.
5 p.m.—Close down.

EVENING SESSION.

- 6.50 p.m.—Answers to Letters and Birthday Greetings by "MARY GUMBLEAF."
7 p.m.—ETIENNE LABELLE:
"The Three Bears" (Gester).
6.10 p.m.—CHILDREN'S PLAY:
"THE TEA-TY TEA PARTY," by the Students of Miss Bottrich Tennant.
CAST.
Penny (a rich child), Molly Hagan.
Joe (a Paris maid), Nola Hagan.
The Queen of Hearts, Beatrice Tennant.
Little Red Riding Hood, Lorna Birley.
Miss Muffin, Gilda McKenzie.
Ho-Peep, Janet Almond.
Jack Horner, Roland Poppe.
Humpty Dumpty, Hector Crawford.
6.40 p.m.—Official Report of Newmarket Stock Auction by the Associated Stock and Station Agents, Bourke Street, Melbourne. Number of sheep and cattle drawn for week's sale.
6.45 p.m.—"Herald" News Service. Weather Synopsis. Shipping Movements.
6.52 p.m.—Stock Exchange information.

- 6.57 p.m.—Fiah Market Reports by J. R. Barrett, Ltd. Public prices.
6.59 p.m.—River Reports.
7.2 p.m.—Market Reports by the Victorian Producers' Co-operative Co., Ltd.: Poultry, Grain, Hay, Straw, Juice, Dairy Produce, Potatoes and Onions. Market reports of fruit by the Victorian Fruitcreators' Association—wholesale prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus fruit. Balaarat Sheeta Market Reports.

NIGHT SESSION.

- 7.18 p.m.—Mr. C. J. MILLER, champion croquet player of Victoria, will speak on "Croquet."
7.30 p.m.—Under the auspices of the University of Melbourne Extension Board, Mr. G. Sinclair, M.A., lecturer in English literature for University Extension Board, will speak on:
"Mere's Utopia."
7.45 p.m.—Mr. E. M. FASCOE will speak on:
"Books."
8 p.m.—MALVERN TRAMWAYS BAND:
Selection, "Romero and Juliet" (Gounod).
8.10 p.m.—SISCA NAVARETTI, dramatic soprano:
"La Fanciulla" (D'Alvarez).
"Ave Marie" (Gounod).
With violin obligato by Reginald Bradley.
8.15 p.m.—REGINALD BRADLEY, violin:
"Hungarian Dance" (Dvorak).
8.24 p.m.—Mr. ERICZ TRAY will speak on the Million Shillings Fund.
8.28 p.m.—SCOTCH CHURCH CHOIR, transmitted from Scots Church, Collins Street, Melbourne.
Organist and director, Mr. MANSLEY GRER.
Ferdinand Hiller's Sacred Cantata, "A SONG OF VICTORY."
No. 1, Chorus, "The Lord greatly wonders for us hath wrought."
No. 2, Soprano solo and chorus, "Praise, O Jerusalem, praise the Lord."
No. 3, Chorus, "The heathen are fallen in the pit that they made for others."
No. 4, Soprano solo, "See it is written in the book of the righteous."
No. 5, Soprano solo and chorus, "He is tears that sweetly, reacheth a joyful harvest."
No. 6, Chorus, "Mighty is our God, and of mighty power there is none that searcheth His Judgments."
No. 7, Soprano solo and chorus, "Praise ye the Lord in His holiness, praise ye Him in the Firmament of His power."
No. 8, Chorus and soprano solo.
FROM THE STUDIO.
9 p.m.—Announcement.
Under the auspices of the Health Association of Australasia, the Health Message for today is:
"Public health is the foundation on which reposes the happiness of the people and the power of a country" (Diarradi).
9.1 p.m.—MALVERN TRAMWAYS BAND:
Overture, "Light Cavalry."
9.15 p.m.—Capt. GUY MOORE, tenor:
Two Desert Songs:
"I will await thee."
"The Hawk" (Conanby Clark).
9.20 p.m.—MALVERN TRAMWAYS BAND:
Instruments:
"White Lilies" (Hume).
"List Infanter" (Codel).
9.27 p.m.—SISCA NAVARETTI, dramatic soprano:
"Marta's Aria."
(a) "As through the street" (Puccini).
(b) "Lament of Ism" (Bantock).
9.36 p.m.—His Worship the LORD MAYOR OF MELBOURNE, SIR STEPHEN MORRILL will speak on:
"The Sutherland Home Appeal."
9.45 p.m.—BERYL HOLT, contralto:
"Orphan with his lute" (Arthur Sullivan).
"I heard you go by" (Daniel Wood).
9.52 p.m.—MALVERN TRAMWAYS BAND:
Selection, "Medusa Poppadour" (Fall).

- 10.2 p.m.—"Aurora" news service. Meteorological information. Announcements. Sporting notes by "Olympus." British Official Wireless News from London. Island steamer movements.
10.7 p.m.—Royal Automobile Club of Victoria SAFETY MESSAGE for today in fact.
NOTICERS: "Breaching your way through traffic may result in an accident to you. In dense traffic keep in line and avoid your turn."
10.13 p.m.—CAPTAIN GUY MOORE, tenor:
"Two Songs of the North" (Olivier).
10.15 p.m.—MALVERN TRAMWAYS BAND:
Waltz, "Night of Halstead" (Auloff).
10.25 p.m.—BERYL HOLT, contralto:
"The Arrow and the Song" (Haltz).
"Bliss that Pass in the Night" (Stephanou).
10.32 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"Mountain Waters" (Friend).
"Everything's Peaches" (Squires).
"Mamma's Grace Young" (Lee).
10.40 p.m.—NORMAN PHIL, comedian:
"The Old Showman."
10.10 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
"Fingert's" piano solo (Greer).
"An Endless" (Donaldson).
"Collette" (Kahn).
11 p.m.—GUR GREAT THOUGHT: "Who hears music, feels his attitude soaked at once?"—Robert Browning.
Make Victoria more musical. Subscribe to the Million Shilling Permanent Orchestra Fund.
11.15 p.m.—JOE ARONSON AND HIS SYMCO-SYMPHONISTS:
11.40 p.m.—"GOD SAVE THE KING."

4QG, BRISBANE.

Tuesday, MIDDAY SESSION.

- 3 p.m.—Market reports, weather information, "The Daily Mail" and "The Daily Standard" news.
3.30 p.m.—Lunch music.
3.45 p.m.—Standard time signal.
2 p.m.—Close down.
AFTERNOON SESSION.

- 3.30 p.m.—Afternoon tea music.
4.15 p.m.—"The Telegraph" News.
4.30 p.m.—Close down.
EARLY EVENING SESSION.
6 p.m.—"Daily Standard" news; announcements.
6.10 p.m.—Lecture: "Astronomy" "What is the Earth?" by Mr. A. K. Chapman.
6.30 p.m.—From Ipswich:
Stories by the Combined Redline Story Staff.
7 p.m.—Special news service, market reports, stock reports.
7.30 p.m.—Weather news; announcements.
7.45 p.m.—Standard time signals.
7.55 p.m.—Lecture: "A Talk on Photography," by Mr. F. L. South, manager, Kodak, Ltd.

NIGHT SESSION.

- To-night's programme will be relayed from The Tivoli Theatre, Ipswich.
8 p.m.—From Ipswich:
March symphonic, "Inglesia" (Delbec used). Ipswich Vier Regal Band (conductor, Mr. Albert Wade).
Recitation, "The Pro" (Denia).
F. A. Cooper, Esq., M.L.A.
Hawaiian Instrumentalists, "Honoatolu Moon" (Fred Lawrence).
Alpha Novity Trio.
(Messrs. Norman Dean, steel guitar; Arthur McDonald, ukulele; and Mrs. Holda Woodruff, piano).
Pianoforte solo, "Polensie" (MacDowall).
Miss V. Driver.

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Mr. F. Kent.
Comed solo, Selected.
English concertina solo—by special request—
"Poet and Peasant" (Suppe).
Mr. S. Baillie (accompanied on piano by Miss
Corina Hardie, A.T.C.L.).
Vocal solo:
(a) "Waltz Song," from "Tom Jones"
(b) "Love, I Have Won You" (Rousell).
Miss Mabel Malint.
Debutante, "Klarrakoo" (Schubert).
Ipwajich Vice Regal Band.
Vocal solo:
(a) "Polka" (Bezzl Peckel).
(b) "Puss Every Maa" (Sanderson).
Mr. E. J. Botger.

Violin solos:
(a) "Bemania in C"
(b) "Scherzo"
Mr. B. A. Melnick.
Comedy trio, "Army A.B.C."
Messrs. P. Kent, E. Culla and H. Hoeten.
Hawaiian instrumentalists:
"My Isle of Golden Dreams" (Blakust).
Vocal quartet:
"The Vesper Bell (Montage Phillips),
Cambrian Quartets Party.
Community singing:
Led by members of the Ipwajich-Racial-
Union Cambrian Club.
Pianoforte solo:
"Sesquialtra" (Albeniz).
Miss V. Driver.
English concertina duet:
(a) "Singing" (Schumann).
(Imitation Pipe Organ Ensemble).
(b) "Waltz Hymn" (Baldel) (Ann Grif-
fiths).
Mr. G. Griffiths (treble) and Miss M.
Griffiths (bass).
Vocal solo:
"Friend" (Davies).
Mr. E. C. Spies.

Fantasia:
"Rose of England" (Homes).
Ipwajich Vice Regal Band.
Vocal solo:
"The Dream of Home" (from "H Rascal")
—Arduil.
Miss Mabel Malint.
Comedy duet:
"Finnigan's Hall"
Messrs. E. Culla and H. Hoeten.
Selection:
"Gems of Romance" (arr. Hume).
Ipwajich Vice Regal Band.
10 p.m.—"The Daily Mail" news; weather
news.
Close down.

6WF, PERTH.

Tuesday.
12.30 p.m.—Tune in.
12.45 p.m.—Markets, News, and Cables.
1 p.m.—Time signal from Perth Observatory.
1.1 p.m.—Weather notes, supplied by the
Meteorological Bureau of Western Australia.
1.2 p.m.—Studio Instrumental Trio, conducted
by Mr. Val Smith:
"Hallel-Risse, Nos. 1 and 2" (Michele).
"Jouis Danse" (Hearne).
1.30 p.m.—Close down.
1.40 p.m.—Tune in.
2.05 p.m.—Organ Music, relayed from the
Grand Theatre, Murray Street.
Vocal and instrumental interludes from the
Studio.
4.30 p.m.—Close down.
8.45 p.m.—Dune in.
The Evening Transmission is broadcast on
104.5 Metres, as well as the usual wave-
length.
6.0 p.m.—Stories for the Tins Tots, by Uncle
Henry and Daffy.
7.20 p.m.—Stocks, Markets, News.
7.45 p.m.—Talk by Dr. J. S. Butts, B.A.,
A.L.B.
8 p.m.—Time signal from Perth Observatory.
8.1 p.m.—Weather notes, supplied by the
Meteorological Bureau of Western Australia.

CONCERT NIGHT.
8.30 p.m.—Musical programme, including vocal
and instrumental artists.
Operatic numbers by Mr. Lindsay G. Dodd,
baritone, and Mr. A. C. Fisher, tenor.
Piano solo by Mr. G. A. McDonald.
Miss Evelyn Willis, A.R.C.M., pianist.
10 p.m.—Late news items, by courtesy of "The
Daily News" Newspaper Coy.
Ships within range announced.
Weather Report and Forecast.
10.30 p.m.—Close down.

7ZL, HOBART

Tuesday.
MORNING SESSION.
11.0 a.m. to 12 noon.
AFTERNOON SESSION.
3.0 p.m.—G.P.O. Clock Chimes the Hour.
3.1 p.m.—Dune in Selection.
3.5 p.m.—Hobart Stock Exchange Quotations;
Weather Information; Items of Interest;
Announcements.
3.25 p.m.—Selections by 7ZL Studio Trio:
"Le Jeu Charming" (Simeon).
"Atreus et Columbe" (Lambert).
"Vello Solo, Selected (Miss Beale Landis),
(Hendis).
"Meadowland" Selections from "San Toy"
(Jones).
Violin Solo, Selected (Mr. E. J. McCann).
"Klarrakoo" (Schubert).
"I Love Thee" (Grieg).
"La Gondola" (Hemsel).
4.15 p.m.—Cooking Talk by "Regula".
4.30 p.m.—Close Down.
EARLY EVENING SESSION.
4.50 p.m.—"Uncle Hector" Talks to the
Children.
7.0 p.m.—"Uncle Peters" Hall Hour.

NIGHT SESSION.
7.30 p.m.—Musical Selection.
7.55 p.m.—Literary Lessons and Library Talk,
by Mr. W. E. Fuller.
8.00 p.m.—"Morency" Special Tasmanian
News Service, Railway Auction Produce
Sales; Weather Forecasts; Hobart Stock
Exchange Quotations.
8.0 p.m.—G.P.O. Clock Chimes the Hour.
8.1 p.m.—Dance Numbers by Mrs. Sheppard's
Dance Trio from the Imperial Hotel, Hobart,
interspersed with items by Miss Olive Ted-
man (Soprano), Miss K. Cullinan (elec-
trician), Mr. Fred Herald (baritone).
9.0 p.m.—Radio Question Corner by "Asode."
9.40 p.m.—British Official Wireless News.
9.50 p.m.—"Mercury" Special Interstate News
Service; Tasmanian District Weather Re-
ports; 9 p.m. Weather Forecast; Station
Announcements; To-morrow's Programme;
Ships Within Wireless Range; National
Anthem.

Wednes., Nov. 30

2FC, SYDNEY

EARLY MORNING SESSION.—7 to 8 a.m.
MORNING SESSION.
10 a.m.—"Big Ben" and announcements.
10.15 a.m.—Studio music.
10.45 a.m.—"Spray" Morning Herald" news
service.
10.50 a.m.—Studio music.
10.55 a.m.—A reading.
11.0 a.m.—Studio music.
11 a.m.—"Big Ben."
11.10 a.m.—Marching music for school children.
11.15 a.m.—A.P.A. and Reuter's Cable Services.
11.30 a.m.—Studio music.
11.45 a.m.—A talk on Home Cooking and Re-
cipes.
11.50 a.m.—Close down.

MIDDAY SESSION.
12 noon—"Big Ben" and announcements.
12.15 p.m.—Stock Exchange, first call.
12.30 p.m.—Weather forecast, rainfall.
12.35 p.m.—Studio music.
12.40 p.m.—Summary of "Sydney Morning
Herald" news service.
Roughly wireless news.
12.45 p.m.—Studio music.
12.50 p.m.—Marching music for school children.
12.55 p.m.—Dorothy Beahow, contralto:
"Little Brown" (Gould) (Delaney).
1.00 p.m.—The Oak Hall Instrumental Trio.
1.05 p.m.—Studio music.
1.10 p.m.—"Big Ben." Weather intelligence.
1.15 p.m.—"Evening News" midday news ser-
vice.
Producers' Distributing Society's Repre-
sents—The Oak Hall Instrumental Trio.
1.20 p.m.—Stock Exchange, second call.
1.25 p.m.—Marching music for school children.
1.40 p.m.—From the Studio:
Dorothy Beahow, contralto:
"I Love You Truly" (Hood).
1.45 p.m.—Studio music.
1.50 p.m.—From Farmer's Tea Rooms:
"The Oak Hall Instrumental Trio."
2 a.m.—"Big Ben" Close down.

AFTERNOON SESSION.

2 p.m.—"Big Ben" and announcements.
2.5 p.m.—From the Studio:
Joie Freeman, contralto:
"Sappho Oak" (Hraham).
2.57 p.m.—Anne Mills, mezzo:
"I Love Thee" (Grieg).
3.11 p.m.—Studio music.
3.15 p.m.—A reading.
3.25 p.m.—Eileen Judkins, soprano.
3.30 p.m.—Marching music for school children.
3.40 p.m.—From Farmer's Tea Rooms:
Eibel Muller, contralto:
"Sometimes at Home" (Heggin Wood).
3.45 p.m.—The Oak Hall Instrumental Trio.
3.55 p.m.—Studio; Eileen Judkins, soprano.
4.0 p.m.—From Farmer's Tea Rooms:
Belle Simmons, mezzo:
"Glowing" (Toot).
4.15 p.m.—The Oak Hall Instrumental Trio.
4.25 p.m.—Studio music.
4.30 p.m.—From Farmer's Tea Rooms:
Eibel Muller, contralto:
"The Sweetest Flower that Grows" (Hawker).
4.35 p.m.—The Oak Hall Instrumental Trio.
4.45 p.m.—From the Studio:
Joie Freeman, contralto:
"Invocation in the Nile" (Barnack).
4.45 p.m.—From Farmer's Tea Rooms:
Belle Simmons, mezzo:
"Mighty Lak a Rose" (Nevin).
4.45 p.m.—From the Studio:
Stock Exchange, third call.
4.45 p.m.—Studio music.
4.50 p.m.—Anne Mills, mezzo:
"Solweig's Song" (Grieg).
4.55 p.m.—Studio music.
5.03 p.m.—"Big Ben" Close down.

EARLY EVENING SESSION.

5.45 p.m.—The Chimes of 2FC.
5.45 p.m.—The "Hello Man" talks to the chil-
dren, assisted by Uncle Rix and "Jerru".
6.30 p.m.—Story time for the young folk.
6.40 p.m.—Studio music.
7 p.m.—"Big Ben." Late sporting news.
7.10 p.m.—Dalgety's market reports (wheat,
wheat and stock).
7.15 p.m.—Fruit and vegetable markets.
7.20 p.m.—Weather and shipping news.
7.25 p.m.—"Evening News" late news service.

NIGHT SESSION.

7.40 p.m.—Programme announcements.
7.45 p.m.—Selwyn Seymour, pianist:
An Australian one-act Dialogue, "Into the
Night" (Denham and Walsh).
Casts:
Jack Hilliday (young bohemian), Selwyn
Seymour (his father), Selwyn Selmour

8 p.m.—"Big Ben."

From the N.S.W. Conservatorium, Sydney:
Items by the N.S.W. Conservatorium Or-
chestra, conducted by the Director, Mr.
Arundel Orchard:(a) Overture, "Rienzi" (Wagner).
(b) Poems for Violin and Orchestra
(Clouston).(c) Romance for Violin and Orchestra,
"The Lark Ascending" (Williams)
(Violinist, Mr. Lionel Lawson).8.20 p.m.—From the Studio:
Belows, Seymour, English electricianist.

8.25 p.m.—Latest weather forecast.

8.30 p.m.—From the Peace Memorial Hall,
Rose Bay: The Third Monthly Concert, sub-
mitted by the Music Club, Director, Mr.
Oliver King.

Dagmar Roberts, pianoforte solo:

(a) "Clair de Lune."
(b) "Lazaria" (Debussy).8.35 p.m.—Jeanette Eshelstone, soprano:
Recit and aria, "Jewel Song" from "Pausi"
(Gounod).

8.41 p.m.—Kenneth Hunt, tenor:

(a) "Avalon" (Geethovon).
8.46 p.m.—(b) "Eleanor" (Coleridge Taylor).8.48 p.m.—Gerald Waleen, violinist:
"Tambourin Chinois" (Kreisler).

8.50 p.m.—Alfred Cunningham, baritone:

(a) "Open Heart" (Gounod).
8.54 p.m.—(b) "Simon the Cellarer" (Hatten).

8.58 p.m.—Jeanette Eshelstone, soprano:

(a) Aria, "Ah, now comes ah now Quince"
(b) "La Serranbella."

9.05 p.m.—Kenneth Hunt, tenor:

(a) "On, away, awake" (Tayler).
9.08 p.m.—(b) "Such no More" (Aiken).

9.11 p.m.—Gerald Waleen, violinist:

(a) "May Flower" (Haber).
(b) "Mouset Musicale" (Schubert-Kreisler).

(c) "Hungarian Dance" (Brahm-Jauchimi).

9.14 p.m.—Alfred Cunningham, baritone:
(a) "Yeomen of England" (German).

(b) "For You Alone" (Grieg).

9.17 p.m.—From the Studio:
Hal Vane's Dance Band.

9.20 p.m.—Latest weather forecast.

9.24 p.m.—Len Maurice, baritone:
Popular numbers.

9.28 p.m.—Hal Vane's Dance Band.

9.30 p.m.—Len Maurice, baritone.
9.34 p.m.—Late news and announcements.11 p.m.—"Big Ben."
Hal Vane's Dance Band.11.30 p.m.—National Anthem.
Close down.

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2BL, SYDNEY.

Wednesday.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

11 a.m.—G.P.O. Clock and chimes.

Musical programme from the studio.

11.15 a.m.—Women's Section.

by Miss Gwen Varley, Broadwaters Women's

Sports Authority.

Social Notes. Replies to correspondents by

Mrs. Jordan. Paid on "Dental Hygiene"

by a member of the Dental Board.

AFTERNOON SESSION.

Racing information broadcast immediately

after each race by courtesy of the "Sun"

newspapers.

12 noon—G.P.O. Clock and chimes. Special

Goose Forecast and weather report.

12.3 p.m.—Musical programme from the studio.

12.8 p.m.—Information. Mails, Shipping and

port directory.

12.11 p.m.—Routes in call by wireless.

12.13 p.m.—Fruit Market report.

12.15 p.m.—Vegetable Market report.

12.17 p.m.—London Metal Market report.

12.18 p.m.—Dairy and Farm Produce Market

report.

2GB, SYDNEY

Wednesday.

MORNING SESSION.

- 9 a.m.—Music.
9.15 a.m.—Cherico Talk.
9.35 a.m.—Music.
9.55 a.m.—Psychological Class.
10.05 a.m.—Musical Selections.
10.25 a.m.—Health and Diet.
10 a.m.—Close down.

AFTERNOON SESSION.

- 2.30 p.m.—Music.
2.37 p.m.—Address.
2.62 p.m.—Music.
4 p.m.—Address by Mrs. Crowther.
4.23 p.m.—Music.
4.58 p.m.—Close down.

EVENING SESSION.

- 7 p.m.—Music.
7.15 p.m.—Address by Mr. Stanley Dobbins.
7.30 p.m.—Music.
7.50 p.m.—Mr. J. K. Powell, Address.
7.50 p.m.—Music.
7.40 p.m.—Mr. R. S. Bennett.
7.55 p.m.—Songs by Miss Eva Quasim.
1. "My Prayer" (Sousa).
2. "The Poet's Lull" (Elgar).

NIGHT SESSION.

- 8.5 p.m.—Address by Dr. P. K. Roel.
8.20 p.m.—Violin Duets with piano accompaniment, Dan Scully, Ada Brook.
8.50 p.m.—GIB Vocal Quartette:
1. "Viva L'Amour."
2. "Tale of Beauty."
3. "What's that a calling."
Ethel Jones, Eva Quasim, Thomas Hall, Clement Hosking.

- 8.40 p.m.—Sonata for Piano by Beethoven. Op. 27, Ada Brook.

- 9 p.m.—Humorous Sketch by Mr. Heath Burdock.

- 9.15 p.m.—Songs by Clement Hosking:
1. "The Old Grey Fox" (White).
2. "The Trumper" (Dix).

- 9.28 p.m.—Violin Duets with piano accompaniment, Dan Scully, Ada Brook.

- 9.35 p.m.—GIB Vocal Quartette:
1. "Tuanita."
2. "The Ash Grove."
3. "Walk in our Alley."

- Ethel Jones, Eva Quasim, Thomas Hall, Clement Hosking.

- 9.48 p.m.—Songs by Ethel Jones, June Kapstater (Lehmann).

2. "Beloved" (Hoad).
6.59 p.m.—Talk.
10 p.m.—Close down.

2 UW, SYDNEY.

Wednesday.

MORNING SESSION.

- 9 a.m.—News, shipping, mails, studio items.
9.46 a.m.—Women's Section.
9.59 a.m.—Resume of forward programme.
10 a.m.—Close down.
10.15 p.m.—Special Employees Luncheon Session.
12.45 p.m.—Close down.

AFTERNOON SESSION.

- 2 p.m.—Studio items.
2.58 p.m.—Resume of forward programme.
3 p.m.—Close down.

EVENING SESSION.

- 8 p.m.—Studio Items.
8.50 p.m.—Resume of forward programme.
9 a.m.—Close down.

NIGHT SESSION.

- 7 p.m.—"Sonora" selection.
7.4 p.m.—Where to find.
7.18 p.m.—Miss Alline O'Connor:
Songs at the Piano.
7.14 p.m.—Miss Setton, pianoforte solo:
Selected.

- 7.18 p.m.—Miss Cecily Ellis, mezzo-soprano:
Selected.

7.23 p.m.—Studio selections.

- 7.35 a.m.—Douglas Rae, tenor:
"The Kerry Dance" (Melloy).

- 7.37 p.m.—Miss O'Regan, violin solo:
Selected.

- 7.41 p.m.—Miss Cecily Ellis, mezzo-soprano:
Selected.

- 7.48 p.m.—Mr. Mudge, Whistler:
Selected.

7.50 p.m.—Studio items.

- 8 p.m.—Douglas Rae, tenor:
"Who is Sylvia" (Schubert).

- 8.4 p.m.—Songs at the Piano Mrs. A. W. Churchill.

- 8.8 p.m.—Miss O'Regan, violin solo:
Selected.

- 8.13 p.m.—Miss Cecily Ellis, mezzo-soprano:
Selected.

- 8.27 p.m.—Miss Alline O'Connor:
Songs at the Piano.

- 8.31 p.m.—Mr. Mudge, Whistler:
Selected.

- 8.36 p.m.—Douglas Rae, tenor:
"Where are you Walk" (Handel).

- 8.40 p.m.—Miss Setton, pianoforte solo:
Selected.

- 8.48 p.m.—Mrs. A. W. Churchill:
Songs at the Piano.

- 8.48 p.m.—Studio selections.

- 8.58 p.m.—News and weather forecast.

- 9.8 p.m.—Studio selections.

- 9.23 p.m.—Resume of forward programme.

- 9.30 p.m.—God Save the King.

3LO, MELBOURNE

Wednesday.

MIDDAY SESSION.

- 12 noon.—Melbourne Observatory time signal. Metal pieces received by the Australian Mines and Metals Association from the London Stock Exchange this day. British Official Wireless News from Rugby. Reuter's and the Australian Press Association cables. "Arax" news service.

- 12.30 p.m.—JOE ARONSON AND HIS SYNGO-SYMPHONISTS:
"Sixty seconds every minute I'm in love with You" (Davis).

- "Oh, You South" (Censer).

- "La-De-De-O" (Fain).

- 12.50 p.m.—MADOLINE KNIGHT, contralto, in more old-time favorites:
"When you and I were young, Maggie."

- "I've Got a Feeling" (Fain).

- 12.57 p.m.—Stock Exchange information.

- 1.40 p.m.—JOE ARONSON AND HIS SYNGO-SYMPHONISTS:
"Stepping Around" (Grove).

- "The Bell of Arafan" (Farkish).

- "Oh how I Love Bulgarians" (Henderson).

- 1.50 p.m.—NORMAN BRADSHAW, tenor:
"Vorei" (Tutti).

- "Ma Little Banjo" (Dienhot).

- 1.57 p.m.—JOE ARONSON AND HIS SYNGO-SYMPHONISTS:
"Bolshievik" (Jaffe).

- 1 p.m.—Melbourne Observatory Time signal. Have you remembered to write to the Old Folks at home for Christmas. Do it tonight.

- 1.1 p.m.—Under the auspices of the National Safety Council of Australia, Mr. F. J. SKINNER, of the National Roads Board, will report on:
"Safety First."

- 1.10 p.m.—Meteorological information. Weather forecast and rainfall for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.

- 1.17 p.m.—MADOLINE KNIGHT, contralto, in more favorites of Long Ago:
"It was a Dream."
"She Wore a Wreath of Roses."

- 1.24 p.m.—JOE ARONSON AND HIS SYMPOHONISTS:
"If I didn't know your husband and you didn't know my wife" (Coel).
"The Far Away Belle" (Di Capua).
"Oh, Marie" (Gordon).
- 1.30 p.m.—ROTARY CLUB LUNCHEON:
Speeches transmitted from Animo House, Collins Street, Melbourne.
- 1.35 p.m.—Close down.
- 1.40 p.m.—Description of Trial Handicap, 5 furlongs, WERRIBEE RACES, by "Musket," of "The Sporting Globe."
- 1.43 p.m.—Close down.

AFTERNOON SESSION.

- 1 p.m.—MELBOURNE OBSERVATORY TIME SIGNAL.
- 1.10 p.m.—Description of Jumpers' Flat Race, 3 furlongs, WERRIBEE RACES, by "Musket," of "The Sporting Globe."
- 1.15 p.m.—STUDIO QUARTET:
"Celtic Suite" (Foulds).
- 1.18 p.m.—ELLA RIDDELL, contralto:
"Home of Mine" (McKenale Murdoch).
"The Road to the Lighthouse" (Old Scotch).
- 1.22 p.m.—MAGGIE FOSTER, violin:
Scottish Airs.
- 1.23 p.m.—Description of Walter Handicap, 7 furlongs 68 yds, WERRIBEE RACES, by "Musket," of "The Sporting Globe."
- 1.25 p.m.—COLIN THOMSON, tenor:
Selections from his repertoire.
- 1.42 p.m.—GERTRUDE ARMSTRONG:
Pipe selections.
- 1.47 p.m.—ELLA RIDDELL, contralto:
Scottish Airs.
- 1.44 p.m.—TASMA TIERNAN, 'cello:
"Caprice" (Hamish MacCunn).
- 1.48 p.m.—Description of Werribee Handicap, 1 1/4 miles, WERRIBEE RACES, by "Musket," of "The Sporting Globe."
- 1.53 p.m.—STUDIO QUARTET:
"Annin Laura"—Paraphrase.
- 1.55 p.m.—ELLA RIDDELL and COLIN THOMSON, duets.
- 1.58 p.m.—STUDIO QUARTET:
Airs from the Hamestead.
- 1.59 p.m.—Description of Manor Purse, 6 furlongs, WERRIBEE RACES, by "Musket," of "The Sporting Globe."
- 1.55 p.m.—SISTER LOCKHART:
"Infant Welfare."
- 1.59 p.m.—"Herald" news service:
Stock Exchange information.
- 2 p.m.—Description of Manor Purse, 6 furlongs, WERRIBEE RACES, by "Musket," of "The Sporting Globe."

EVENING SESSION.

- 7.30 p.m.—Answers to Letters and Birthday Greetings by "MARY MARY."
- 8 p.m.—STUDIO QUARTET:
"The Little Clock on the Mantel" (Wheeler).
- 8.10 p.m.—HOBBIES FOR THE CHILDREN:
"Old Adam" will take the children into his fairy garden, and tell them just how they can make gardens of their own. Be sure you join the Gardening Club.
- 8.25 p.m.—STUDIO QUARTET:
"Cat and Mice" (Maurey).
- 8.30 p.m.—"MARY MARY":
"The Blue-eyed Princess."
- 8.40 p.m.—Official report of Newmarket Stock Sales by the Associated Stock and Station Agents, Bourke Street, Melbourne. Number of sheep and cattle drawn for week's sales.
- 8.45 p.m.—"Herald" news service. Weather Synopsis. Shipping movements.
- 8.52 p.m.—Stock Exchange information.
- 8.57 p.m.—Fish Market reports by J. R. Barrett, Ltd. Rabbit prices.

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Most Ever-Ready users repose a degree of confidence in their battery which is a pleasing indication of its merits.

Famed for the long and efficient service they render, Ever-Ready Radio Batteries are fast reaching the zenith of popularity.

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163 PITT STREET :: SYDNEY

6.55 p.m.—River reports.

7.2 p.m.—Market reports by the Victorian Producers' Co-operative Co., Ltd.; Poultry, Grain, Hay, Straw, Jute, Dairy Produce, Fats and Oils and Market reports of fruit by the Victorian Fruitgrowers' Association—Retail prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus fruits.

NIGHT SESSION.

7.35 p.m.—Under the auspices of the Department of Agriculture, Mr. C. C. BRITTLEBANK, Biologist, will speak on "Diseases Control in the Flower Garden."

7.50 p.m.—MR. P. W. PEARCE: "The Popularity of the Swedish System of Physical Culture."

7.55 p.m.—CAPTAIN C. H. PETERS: "Books, Wine and Okeberry."

8 p.m.—MRS. HERBERT BROOKES will speak on: "The Million Shilling Fund."

8.5 p.m.—CONCERT, transmitted from KYNETON, in aid of Local Charities; KYNETON BRASS BAND: Selection, "Village Carnival" (Rayner).

8.15 p.m.—BOBBY PEARCE, baritone: "All Thru the Night" (Old Welsh). "When the Great Red Dawn is Shining" (Sharp).

8.30 p.m.—REGINALD BRADLEY, violin: Concerto, "Andante from Mendelssohn." "Boleros" (Geel Bureigh).

8.50 p.m.—VICTORIA WILSON, soprano: "Ah! L'ora e qui" ("La Traviata"). "Down in the Forest" (London Record).

8.57 p.m.—KYNETON BRASS BAND: Fantasia, "Olden Memories."

8.42 p.m.—PAT McLEAN, soprante: Child Impersonations.

8.40 p.m.—MR. F. DRUMMOND, J.P., President of the Syneton Sibon, will speak a few words.

FROM THE STUDIO.

9 p.m.—ANNOUNCEMENT: THE ROYAL AUTOMOBILE CLUB OF VICTORIA'S SAFETY MESSAGE for to-day is for ALL DRIVERS: "Never turn to the right, slow down, or stop, without giving the proper signal. Never on any account put out your right arm when you are going to turn to the left."

9.4 p.m.—LEN GIBSON'S NEAPOLITAN SEXTETTE: "La Serenata" (Braga). "Mignonettes" (Nichols).

9.11 p.m.—MAGGIE POSTER, violin: "Elefantau" (Jenkinson). "Coming Home" (Willaby).

9.18 p.m.—SYD. L. EXTON, tenor: "Eleanora" (Gobridge Taylor). "Sylvia" (Slindig).

9.25 p.m.—LEN GIBSON'S NEAPOLITAN SEXTETTE: Mandolin and Spanish Guitar Duo, "In Old Madrid." The Orchestra, "In a Monastery Garden" (Kotelby).

9.32 p.m.—ONE-ACT PLAY: STORY OF WATERLOO. Colonel Brewster, aged 88, Maurice Dudley, Sergeant McDonald, R.A., Alfred Anders, Colonel James Midwinter, Scotch Guards, Charles Dymon.

Norah Webster, Corporal Grand-mere, Mrs. M. Dudley. Scene: Brewster's Cottage near the Bar-mack.

9.42 p.m.—MAGGIE POSTER, violin: "Romance d'Automne" (Adele Gerard). "When Other Lips."

10 p.m.—MARY MACK, contralto: "Ah, Sweet as Any Flower" (Schumann). "Oh, Shining Sun" (Schumann).

10.7 p.m.—LEN GIBSON'S NEAPOLITAN SEXTETTE: "Rose Marie" (Friml).

10.11 p.m.—"Argus" news service. Meteorological information. British official wireless news from Rugby.

10.18 p.m.—SYD. L. EXTON, tenor: "Silver Threads Among the Gold." "Who is Sylvia" (Schubert).

10.25 p.m.—LEN GIBSON, mandolin solo: Selected.

10.32 p.m.—MARY MACK, contralto: "A Dream" (Rabenstein). "The Sea" (MacDowell).

10.39 p.m.—ERN SPRY'S ORCHESTRA: "No Foolin'" (Hanley). "Indian Love Call" (Friml).

10.44 p.m.—JACK O'HAGAN, baritone, will sing two of his own compositions.

10.50 p.m.—ERN SPRY'S ORCHESTRA: "Everything's Poscha" (Squire). "Olerio" (Goldman).

10.58 p.m.—JACK O'HAGAN: Selected.

11 p.m.—OUR GREAT THOUGHT: "Sweet music, dancing's only life, The ear's sole happiness, the air's best speech: Limestone of fellowship, charming red of strife.

The wind's soft paradise, the sick mind's lurch; With thine own tongue, thou true and stoner, eases' teach."

—(Sir John Davis). Make Victoria more musical. Subscribe to the Million Shilling Fund.

11.1 p.m.—ERN SPRY'S ORCHESTRA.

11.48 p.m.—"GOD SAVE THE KING."

4QG, BRISBANE.

Wednesday.

EARLY MORNING SESSION.

5.35 a.m.—Physical culture session. 7 a.m.—Close down.

MIDDAY SESSION.

1 p.m.—Market reports; weather information; "The Daily Mail" and "The Daily Standard" news.

1.30 p.m.—Lunch hour music.

1.55 p.m.—Standard time signal.

2 p.m.—Close down.

AFTERNOON SESSION.

2.55 p.m.—Afternoon tea music.

4.15 p.m.—"Telegraph" news.

4.50 p.m.—Close down.

EARLY EVENING SESSION.

5 p.m.—"Daily Standard" news; announcements.

5.10 p.m.—Lecturette: A Beauty Talk, by Dorothea Webster.

5.30 p.m.—The children's hour: Stories by "Little Miss Brisbane."

7 p.m.—Special news service; market reports; stock reports.

7.20 p.m.—Weather news; announcements.

7.45 p.m.—Standard time signal.

7.45 p.m.—Lecturette: "Inbreeding and Outbreeding (from a crop improvement point of view)." Mr. J. R. A. McMillan, Plant Breeder, Queensland Agricultural High School and College.

NIGHT SESSION.

"The World's Day" Meeting will be relayed from the Exhibition Hall.

8 p.m.—FROM THE EXHIBITION HALL: Hymn, "Thou Whose Almighty Word" (Hahn Ancient and Modern—260).

Prayers. His Excellency the Governor: Address.

Hymn, "God is Working His Purpose O'— Scottish Hymnal—524).

His Grace the Archbishop of Brisbane (Dr. Sharp): Address.

Hymn, "Jesus shall reign where'er by Sun" (Hymns Ancient and Modern—24). The Rev. P. A. Micklem, D.D., Rector, St. James, Sydney: Address.

8.30 p.m.—FROM THE STUDIO: Hawaiian Instrumentalists in selected new songs.

The Hawaiian Melody Makers. Soprano solo, Selected.

Mrs. Robert Bell. Group of Banjo Numbers, by Mr. N. Gold. Tenor Solo, "Sally Horner"

Mr. Geo. Williamson. Hawaiian Instrumentalists—The Hawaiian Melody Makers.

Soprano solo—Selected. Mrs. Robert Bell.

Group of Banjo Numbers, by Mr. N. Gold. Tenor solo, "Red Devon" (1924).

"Red Devon" (1924). Mr. Geo. Williamson.

Hawaiian Instrumentalists: The Hawaiian Melody Makers.

10 p.m.—"The Daily Mail" news; weather news. Close down.

6WF, PERTH.

Wednesday.

12.30 p.m.—Tune in.

12.35 p.m.—Market, News, and Cables.

1 p.m.—Time signal from Perth Observatory.

1.1 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

A RELAYED CONCERT.

1.2 p.m.—Lunch-hour Concert, relayed free. Lyric Home, arranged by Messrs. McGroves' Limited.

1.30 p.m.—From the Studio: Studio Quartette, conducted by Mr. V. Smith.

3 p.m.—Close down.

3.30 p.m.—Tune in.

3.45 p.m.—Orchestral music, played by Hay's Orchestra, conducted by Mr. Harold Fawcett, relayed from Hay's Recent Theatre, William Street.

Vocal interludes, from the Studio.

4.30 p.m.—Close down.

6.45 p.m.—Tune in.

The Evening Transmission is broadcast on 184.5 Metres, as well as the usual wavelength.

6.50 p.m.—Stories for the Kiddies, by Aunt Jane and Uncle Duff.

7.20 p.m.—Stocks, Markets, News.

7.45 p.m.—Talk by Mr. H. B. Gravemill.

8 p.m.—Time signal from Perth Observatory.

8.1 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

A RELAYED CONCERT.

8.3 p.m.—Vocal and Instrumental Concert, relayed from Messrs. Morris Bros., Music Warehouse, Hay Street.

10 p.m.—Late news items, by courtesy of "The Daily News" Newspaper Co.

Ships: within range announcement. Weather Report and Forecasts.

10.50 p.m.—Close down.

7ZL, HOBART

Wednesday.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

- 3 p.m.—G.P.O. Clock Chimes the hour.
 3.1 p.m.—Tune in selection.
 3.5 p.m.—Hobart Stock Exchange quotations.
 Weather information.
 Items of interest; announcements.
 4.1 p.m.—Radio Auction Bridge, Game No. 31.
 4 p.m.—Social and Educational Calendar from Illustrated Tasmanian Mail.
 4.15 p.m.—Story from Illustrated Tasmanian Mail.
 4.30 p.m.—Close down.

EARLY EVENING SESSION.

- 6.30 p.m.—"Uncle Peters" half-hour.
 7 p.m.—"Uncle Hector" talks to the Children.

NIGHT SESSION.

- 7.30 p.m.—Musical selection.
 7.35 p.m.—Weekly Scouting Corner, Talk by Scoutmaster W. Lipscombe.
 7.40 p.m.—"Mercury" special Tasmanian news service, Railway Auction Produce sales, Weather forecasts, Hobart Stock Exchange quotations.
 8 p.m.—G.P.O. Clock chimes the hour.
 8.1 p.m.—Abattoirs and Stock Market reports through the courtesy of Roberts and Co., Ltd., Hobart.
 8.5 p.m.—Talk on "St. Andrew's Day," by Mr. A. E. Anderson, Vice-president of Gaelic Society.
 9.15 p.m.—Selections by 7ZL Studio Trio:
 "Marche des Cadets" (Bonne).
 "If Winter Comes" (Tennant).
 "Norwegian Dance" (Mullen).
 Suite, "Lavender Lark" (Hill).
 Cello solo: Selected (Miss Bessie Landa).
 Selections from "To-night's the Night" (Rubens).
 Violin solo: Selected. (Miss Vera Ray).
 "Danse Deboutaine" (Willeby).
 "Largo" (Handel).
 "Caro Mio Ben" (Giordani).
 Yalse, "Environement" (Panelli);
 Interspersed with items by Miss Jean Hubbard (mezzo-soprano), Mr. George Muir (tenor), Mr. Hugh Taylor (soloist).
 9.46 p.m.—British Official wireless news.
 9.50 p.m.—"Mercury" special Interstate news service. Ships within wireless range, Tasmanian district Weather reports. Station announcement; to-morrow's programme.
 9 p.m. Weather report.
 Close down.

Thurs., Dec. 1
2FC, SYDNEY

EARLY MORNING SESSION.—7 to 8 a.m.

MORNING SESSION.

- 10 a.m.—"Big Ben" and announcements.
 10.5 a.m.—Studio music.
 10.15 a.m.—"Sydney Morning Herald" news service.
 10.30 a.m.—Studio music.

Announcement

Jefferson Transformers

No matter what circuit you wish to complete, there is a JEFFERSON Transformer that will bring you the highest possible degree of amplification. Right from the start put JEFFERSONS in your set—don't experiment—expert Radio Engineers after careful and exhaustive tests have found them perfect in every detail of construction. Distant stations are tuned in with ease, and you will be highly pleased with the extreme sensitivity, quietness and the freedom from distortion.

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Ratio: 3.75 to 1

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No. 41—Ratio 3.75 to 1.

Designed for operation with all standard tubes.

1. Ratio of secondary to primary turns, 3.75 to 1.
2. Useful tone frequency range, 60/5000 cycles.
3. Allowable current on each winding, 10 milli-amperes.
4. Test voltage between primary and secondary, between primary, secondary and ground, 500 volts.
5. Maximum operating voltage in conjunction with tube, 300 volts.
6. D.C. Resistance of windings:
 Primary, 1000 ohms. (approx.)
 Secondary, 5000 ohms. (approx.)
7. Primary and secondary wound with No. 40 enamel-covered copper wire.

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AMPLE RESERVE

behind the electric power socket gives rich natural tone at all times.

Acme Socket Power never fails.

New System
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Ltd.
280 Castlereagh St.,
Sydney.

- 10.35 a.m.—Last minute Racing information by the FFC Commissioner.
10.45 a.m.—Studio music.
11 a.m.—"Big Ben."
Marching music for school children.
11.5 a.m.—A.F.A. and Reuter's Cables.
11.10 a.m.—Studio music.
11.15 a.m.—A reading.
11.30 a.m.—Close down.

MIDDAY SESSION

- 12 noon—"Big Ben" and programme announcements.
12.15 p.m.—Stock Exchange, first call.
12.3 p.m.—Official weather forecast, rainfall.
12.4 p.m.—Studio music.
12.10 p.m.—Summary of "Sydney Morning Herald" news articles.
Boggy wireless news.
12.25 p.m.—Studio music.
12.30 p.m.—Marching music for school children.
12.40 p.m.—Lorraine Jernan, soprano:
"Beyond the Dawn" (Sanderson).
12.45 p.m.—The Oak Hall Instrumental Trio, from Farmer's Tea Rooms (Leader, Mr. Horace Keats).
12.50 p.m.—Studio music.
1 p.m.—"Big Ben." Weather Intelligence.
1.5 p.m.—"Evening News" midday news service.
Producers' Distributing Society's Report.
1.20 p.m.—The Oak Hall Instrumental Trio.
1.25 p.m.—Stock Exchange, second call.
1.30 p.m.—Marching music for school children.
1.40 p.m.—Lorraine Jernan, soprano:
"The Market" (Carew).
1.45 p.m.—Studio music.
1.50 p.m.—The Oak Hall Instrumental Trio.
1.55 p.m.—From the Studio.
The Racing Commissioner will give the latest racing information.
2.5 p.m.—Close down.

AFTERNOON SESSION

- 3 p.m.—"Big Ben" and announcements.
3.5 p.m.—Anne Luciano, soprano.
3.7 p.m.—Nancy McGilchrist, violinist.
3.12 p.m.—Angela Clancy, contralto.
3.10 p.m.—A reading.
3.30 p.m.—Marching music for school children.
3.40 p.m.—From Farmer's Tea Rooms, Marie Besley, soprano.
"Nightingale, the Sunshiner" (Phillips).
3.45 p.m.—From Farmer's Tea Rooms, The Instrumental Trio (Leader, Mr. Horace Keats).
3.55 p.m.—From the Studio, Gladys Reynaull, contralto.
"My Dear Soul" (Sanderson).
4 p.m.—From Farmer's Tea Rooms, May Craven, mezzo.
"Town and Country" (Haydn Wood).
4.1 p.m.—The Oak Hall Instrumental Trio (Leader, Mr. Horace Keats).
4.15 p.m.—From the Studio, Anne Luciano, soprano.
4.20 p.m.—From Farmer's Tea Rooms, Marie Besley, soprano:
"Morning" (Speake).
4.25 p.m.—The Oak Hall Instrumental Trio.
4.30 p.m.—From the Studio, Gladys Reynaull, contralto:
"Out on the Banks" (Dolby).

- 4.40 p.m.—From Farmer's Tea Rooms, May Craven, mezzo:
"My Dreamland Rose" (Phillips).
4.45 p.m.—From the Studio, Stock Exchange.
4.50 p.m.—Nancy McGilchrist, violinist.
4.55 p.m.—Studio music. Angela Clancy, contralto.
4.58 p.m.—Studio music.
5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION

- 5.10 p.m.—The climax of 2P.
5.15 p.m.—The "Hello Man" talks to the children.
5.20 p.m.—Story time for the young folk.
5.40 p.m.—"Big Ben" music.
7 p.m.—"Big Ben" Late sporting news.
7.10 p.m.—Dalrymple's market reports (wheat and stock).
7.15 p.m.—Fruit and vegetables markets.
7.20 p.m.—Weather and shipping news.
7.25 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 7.40 p.m.—Programme announcements.
7.45 p.m.—Wilfred Thomas, basso:
(a) "Coblet" (Edith Karkby).
(b) "The Monkey's Carol" (Stainford).
7.53 p.m.—"He, she and it"—A Novelty Group.
8 p.m.—"Big Ben" From Ron's Concert Salon. A two-Pianette Recital by Frank Hutchens and Lindley Evans:
Sonata, "Allegro" (Mozart).
"Aubade" (Mozart).
"Rehearsal" (Wendelsbohn).
8.16 p.m.—Songs: Hilda Lane, soprano.
8.20 p.m.—Two pianos:
"Variations" (Bosworth).
"Duet" (Sinding).
"Fete Bouillant" (Dreyfus).
8.25 p.m.—Songs, Hilda Lane, soprano.
8.40 p.m.—Two Pianos:
"The Jester" (Recher).
"Herouse" (Anheer).
"Two Noll Songs" (Grüniger).
8.45 p.m.—From The Studio. Late weather forecast.
9 p.m.—"Big Ben." Wilfred Thomas, basso:
(a) "Passing By" (Parcell).
(b) "Mariska" (Korvay).
9.5 p.m.—Harrison White, baritone solo.
9.15 p.m.—"He, She and It"—A Novelty Group.
9.25 p.m.—From the Studio: H. W. Varna and his Company will broadcast for the first time, the Comedy, "Nothing But The Truth," by James Montgomery. This play has been specially re-written for broadcasting and act two will be heard first.
9.30 p.m.—Incidental music to Act Three.
9.42 p.m.—"Nothing But The Truth," Act Three, played by H. W. Varna and Company.
9.50 p.m.—Latest weather forecast.
Harrison White, Baritone solo.
10.30 p.m.—From The Ambassadors—The Ambassadors' Orchestra under the Baton of Al Hammet.
10.57 p.m.—Late news and announcements.
11 p.m.—"Big Ben" The Ambassadors' Orchestra will play until 11.30 p.m.
11.30 p.m.—National Anthem.
Close down.

2BL, SYDNEY.

Thursday.

EARLY MORNING SESSION.

7.8 a.m. to 8.0 a.m.

MORNING SESSION.

- 10.55 a.m.—G.P.O. Clock and Chimes; Musical Programmes from Studio.
- 10.45 a.m.—News from the "Daily Telegraph Fictorial."
- 10.35 a.m.—Musical Programmes from the Studio.
- 11.0 a.m.—G.P.O. Clock and Chimes; Announcements.
- 11.5 a.m.—Musical Programmes from the Studio.
- 11.15 a.m.—Women's Section; Social Notes; Replies to Correspondents by Mrs. Jordan. Talk on "Sailing in the Outlay" by Mr. Brown.
- 12.0 noon—G.P.O. Clock and Chimes; Special Ocean Forecast and Weather Report.
- 12.3 p.m.—Musical Programmes from the Studio.
- 12.5 p.m.—Information: Mails, Shipping and Port Directory.
- 12.11 p.m.—Boats in Call by Wireless.
- 12.18 p.m.—Fruit Market Report.
- 12.16 p.m.—Vegetable Market Report.
- 12.17 p.m.—London Metal Market Report.
- 12.19 p.m.—Dairy and Farm Produce Market Report.
- 12.25 p.m.—Forex Market Report.
- 12.24 p.m.—Fish Market Report.
- 12.26 p.m.—Rabbit Market Report.
- 12.28 p.m.—Stock Exchange Report.
- 12.50 p.m.—H.M.V. Gramophone Recital.
- 1.27 p.m.—Stock Exchange Report.
- 1.30 p.m.—G.P.O. Clock and Chimes. Talk to Children and Special Entertainment for Children in Hospital.
- 2.0 p.m.—G.P.O. Clock and Chimes; Close Down.

AFTERNOON SESSION.

- Racing Information Broadcast immediately after each Race by courtesy of the "Sun."
- 3.0 p.m.—G.P.O. Clock and Chimes; Musical Programmes from the Studio.
- 3.10 p.m.—News from the "Sun."
- 3.20 p.m.—Musical Programmes from the Studio.
- 3.30 p.m.—News from the "Sun."
- 3.40 p.m.—Dunguwan Dance Band, broadcast from the Dunguwan Cabaret.
- 4.0 p.m.—G.P.O. Clock and Chimes; News from the "Sun."
- 4.8 p.m.—Musical Programmes from the Studio.
- 4.15 p.m.—Serial Story.
- 4.30 p.m.—Dunguwan Dance Band.
- 4.50 p.m.—News from the "Sun."
- 4.55 p.m.—Resume of Night's Programmes.
- 4.57 p.m.—Racing Resume.
- 4.58 p.m.—Special Ocean Forecast.
- 6.0 p.m.—G.P.O. Clock and Chimes; Close Down.

EARLY EVENING SESSION.

- 5.45 p.m.—G.P.O. Clock and Chimes; Children's Session.
- 5.50 p.m.—Musical Programmes from the Studio.

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SPECIAL COUNTRY SESSION.

7.0 p.m.—G.P.O. Clock and Chimes; Australian Mercantile Land and Finance Co.'s Report; Weather Report and Forecast by courtesy of Government Meteorological Department; Distributing Society's Fruit and Vegetable Market Report; Stock Exchange Report; Grain and Fodder Report ("Sun"); Dairy Produce Report ("Sun"); Weekly Traffic Bulletin; Talk About Books.

7.15 p.m.—Country News from the "Sun".

7.20 p.m.—Helpful Hints to Listeners by Mr. Alva Burrows.

7.30 p.m.—Talk on "Co-operation Brings Success in Business," by Mr. Rupert McKelnam, B.E.

8.0 p.m.—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus; An Hour's Programmes presented by Home Recreations Limited.

8.5 p.m.—The Salomola Dance Orchestra, presenting the latest Jazz Items.

9.10 p.m.—Madame Gossama-Vicery (soprano) presents a Recital of Operatic and Modern Music.

9.23 p.m.—The Salomola Dance Orchestra.

9.35 p.m.—Mr. Frank Ryan (Entertainer), in Humorous and Dramatic Selections from His Repertoire.

9.40 p.m.—Madame Gossama-Vicery presents a Second Song Recital.

9.50 p.m.—The Salomola Dance Orchestra.

9.55 p.m.—G.P.O. Clock and Chimes.

10.1 p.m.—Weather Report and Forecast by courtesy of Mr. C. J. Maree, Government Meteorologist.

10.2 p.m.—The Murrumbidgee Salvation Army Band (Bandmaster, Mr. N. H. Knight), broadcast from Wemyss St., Murrumbidgee.

10.32 p.m.—Mr. Steffel Beaudenhot (Dutch Baritone), will sing two Ballads.

10.39 p.m.—Mr. Frank Ryan (Entertainer), Humorous Sketch.

10.46 p.m.—The Murrumbidgee Salvation Army Band.

10.56 p.m.—Resume of Following Day's Programmes.

10.59 p.m.—G.P.O. Clock and Chimes.

10.1 p.m.—Archie Graham and Wattie, Much Humour and Some Song.

10.14 p.m.—Mr. Steffel Beaudenhot.

10.23 p.m.—Dance Music by Cyril Kaye and The Westworth Cafe Orchestra. During intervals between Dances News Items by courtesy of the "Sun" Newspapers will be read from the Studio.

11.30 p.m.—G.P.O. Clock and Chimes. National Anthem.

11.35 p.m.—G.P.O. Clock and Chimes.

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November Issue of
RADIO
On Sale Everywhere

12.45 p.m.—Official Opening of DARDENMONG AGRICULTURAL AND PASTORAL SOCIETY'S SHOW, by Sir William McPherson. Transmitted from the Dardenmong Showgrounds.

1 p.m.—Melbourne Observatory time signal. How do you behave in the street—in the garden? You like comfort yourself—think of other people too. Get the country habit. Don't be untidy and do keep to the left.

1.1 p.m.—Meteorological information. Weather forecast and rainfall for Victoria, Tasmania, South Australia and New South Wales. Clean forecast. Live reports.

1.12 p.m.—JOHNSTON'S STUDIO BOYS: Novelty, "The Elephant's Parade."

1.19 p.m.—JAMES HILL, baritone: "When the Sergeant-Major's on Parade," "Don Juan's Serenade."

1.28 p.m.—MAGGIE POSTER, violin: "Shylock's Lute" (Manhattan), "Salut D'Amour" (Eclair).

1.33 p.m.—FRANCES LEA, soprano: "Persian Song of Spring" (McBurey), "Before You Came" (H. L. Wilson).

1.40 p.m.—AGNES FORTUNE, piano: "The Prophet Bird," by request (Schumann).

1.47 p.m.—Under the auspices of the Safety First Council.

Mr. W. FLOOD, of the Automobile Chamber of Commerce—"Safety First."

2 p.m.—Close down.

2.10 p.m.—Description of Trial Hurdle, two miles, Murrumbidgee Race, by "Musket," of "The Sporting Globe."

2.15 p.m.—Close down.

2.45 p.m.—Description of Handicap, Maiden Plate, six furlongs, Murrumbidgee Race, by "Musket," of "The Sporting Globe."

2.50 p.m.—Close down.

AFTERNOON SESSION.

2 p.m.—Melbourne Observatory time signal.

2.1 p.m.—REV. KENNETH HENDERSON will speak on: "Topics of the Week."

3.17 p.m.—MR. WILLIAM G. JAMES will speak to Students of Music.

3.20 p.m.—MR. J. HOWLETT ROSS will speak on: "Jennings Carmichael—the Australian Poet."

3.45 p.m.—Result of Mornington Handicap, Mornington Race.

3.46 p.m.—STUDIO QUARTETTE: Babylon Suite, "Odalesk" (Ella).

3.50 p.m.—Description of Trial Handicap, six furlongs, Mornington Race, by "Musket," of "The Sporting Globe."

3.55 p.m.—ELSIE ROGERS, soprano: "All Joy be Thine" (Sanderson), "Daddy and Baby" (Levey).

4.2 p.m.—TO THE GOOD FOLKS ALL AT STAWELL—GREETINGS. May the sky be clear, the sun warm and the wind gentle.

May your year be golden, find joy in the nimbleness of their limbs, in the brightness of their eyes and the allure of fine raiment.

May your young men find joy and honour in their deeds of strength and daring, and in the smiles of their chosen ones.

May your old people find pleasure in re-union with old friends and in the pageant of youth and beauty around them. To all at Stawell, who labor or play or who sit in the shade and watch, this day SLO, Melbourne, sends GREETINGS AND COMPLIMENTS and trusts your Gains Fide Today.

will meet with the Success that your Hospital, its inmates, its staff and supporters so well deserve.

4.3 p.m.—DOROTHY ROXBURGH, Viola: "Dream Part" (Ondrop), "Regret" (Habanera).

4.9 p.m.—STUDIO QUARTETTE: "Rubinstein's Melody in F" Paraphrase.

4.16 p.m.—ELSIE ROGERS, soprano: "Who'll Come-a-Playing with Me?" (Slater).

3LO, MELBOURNE.

Thursday.

MIDDAY SESSION.

12 noon.—Melbourne Observatory time signal.

12.1 p.m.—Metal prices received by the Australian Mines and Metals Association, from the London Stock Exchange this day. British Official Wireless news from Rugby, Reuters' and the Australian Press Association cables. "Herald" news service.

12.20 p.m.—JOHNSTON'S STUDIO BOYS: March, "With Sword and Lance."

Overture, "Country Life."

12.30 p.m.—JAMES HILL, baritone: "Japanese Love Song."

"On the Beach at Odalesk."

12.37 p.m.—Stock Exchange information.

12.40 p.m.—JOHNSTON'S STUDIO BOYS: Selection, "Copelia."

- 4.20 p.m.—Description of New Handicap, Eve
 (Inclines, Mornington Races, by "Musket," of
 "The Sporting Globe."
- 4.25 p.m.—STUDIO QUARTETTE:
 "March Hinaise" (Schubert).
- 4.30 p.m.—"Herald" news service.
 Stock Exchange information.
- 4.45 p.m.—EVENINGSONG from ST. PAUL'S
 CATHEDRAL.

5 p.m.—Result of Walter Handicap, Mor-
 rington Races. Arrangements for Saturday's
 Races, V.R.C. Benevolent Fund Meeting.

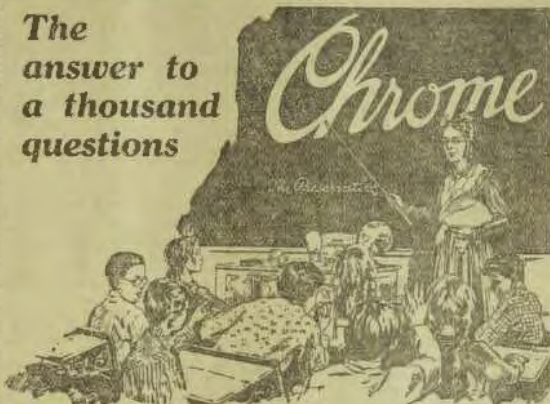
EVENING SESSION.

- 6.30 p.m.—Answers to Letters and Birthday
 Greetings by "MARY GUMLEAF."
- 6 p.m.—"PEACOCK PIE" (W. de la Mare).
- 6.15 p.m.—MISS M. SHEPHERD has more
 "Strange Stories" for the Children.
- 6.25 p.m.—ELJIE BRADSHAW:
 "Songs for the Children."
- 6.3 p.m.—"MARY GUMLEAF":
 "A Christmas Story."
- 6.40 p.m.—Official report of Newmarket Stock
 Bains by the Associated Stock and Station
 Agents, Earle-street, Melbourne. Number
 of sheep and cattle drawn for week's sales.
- 6.45 p.m.—"Herald" news service. Weather
 synopsis. Shipping movements.
- 6.52 p.m.—Stock Exchange information.
- 6.57 p.m.—Fish Market reports by J. E. Bar-
 rett, Ltd. Rabbit prices.
- 6.58 p.m.—River reports.
- 7 p.m.—Market reports by the Victorian
 Producers' Co-operative Co. Ltd.—Poultry,
 Grain, Hax, Straw, Jute, Dairy Produce,
 Potatoes and Onions. Market reports of
 Fruit by the Victorian Fruitgrowers' Associa-
 tion—Retail prices. Wholesale fruit prices
 of fruit by the Wholesale Fruit Merchants'
 Association. Citrus Fruits, Ballarat Pig Mar-
 ket reports by the Ballarat Stock and Station
 Agents.

NIGHT SESSION.

- 7.15 p.m.—Under the Auspices of the Health
 Association, MR. F. P. BYRNE will speak
 on: "Oral Hygiene."
- 7.25 p.m.—"FOREIGN AFFAIRS," by an
 Australian.
- 7.45 p.m.—MR. ARTHUR STIGANT, who is
 now appearing in "THE STUDENT
 PRINCE" at His Majesty's Theatre, Mel-
 bourne, will speak to you from his dressing-
 room, by permission of J. C. Williamson, Ltd.
- 8 p.m.—MR. ROD MCGREGOR will speak on
 "Cricket."
- 8.15 p.m.—JOE ARONSON AND HIS SYN-
 COPATING SYMPHONISTS.
 "Cuddle Closer" (Howard).
 "Underneath the Stars with You" (Slept).
 "A Japanese Serenade" (Deppen).
- 8.25 p.m.—RITA HILTON, soubrette:
 "I'm Going to Dance with the Guy That
 Brung Me."
- 8.35 p.m.—JOE ARONSON AND HIS SYN-
 COPATING SYMPHONISTS:
 "Telecord."
- 8.55 p.m.—MARION LIGHTFOOT, English
 Concertina:
 "Venetian Gondalling."
 "Rose Softly Blooming."
- 9.15 p.m.—JOE ARONSON AND HIS SYN-
 COPATING SYMPHONISTS:
 "Sweetie o' Mine" (G. Hagen).
 "Oh, What a Pal was Whoozie."
 "At Sandown" (Donaldson).
- 9.30 p.m.—EILEEN STARR, soprano:
 "I Passed by Your Window" (Brabe).
- 9.57 p.m.—JOE ARONSON AND HIS SYN-
 COPATING SYMPHONISTS:
 "Drifting and Dreaming" (Oral).
 "H-Dee, H-Dee, Good-bye Thursday, Hello
 Friday" (Brown).
 "Slipper Kim" (Hepler).

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- 9.7 p.m.—PROFESSOR BERNARD HEINZE will speak on the "Million Shilling Fund."
- 9.11 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"I Wonder How I Look When I'm Asleep" (Henderson).
"A Lane to Seville" (Lewis).
"Forgotten" (O'Hagen).
- 9.21 p.m.—J. ALEXANDER BROWNE, baritone: Selected.
- 9.23 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"If You See Sally" (Kahn).
"Let's Make Believe" (Hans).
"Dinner 'at Home" (Davis).
- 9.25 p.m.—RITA HILTON, soprano:
"Loud Speakin' Papa" (Pollock).
- 9.29 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"Why Should I Say I'm Sorry" (Conley).
"Sally" (Kahn).
"Oh, Miss Higgins" (Deppe).
- 9.29 p.m.—MARION LIGHTFOOT, English Contralto:
"Handel's Largo Celebré."
- 9.33 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
Request items.
- 9.3 p.m.—ROYAL AUTOMOBILE CLUB'S SAFETY MESSAGE FOR TO-DAY IS FOR EVERYBODY:
"This is a free country, but nobody has a right to be careless. Stop accidents." Under the auspices of the HEALTH ASSOCIATION, the HEALTH MESSAGE for Today is—
"Do not make hard work of being healthy. If you worry about it, you will not be healthy. Lay down certain rules, and follow them the best you can, until you get used to doing them."
- Metropolitan Information. Sporting notes by "Olympus." British official wireless news from Rugby. Announcements. "Argus" news service.
- 10.19 p.m.—MAJGIE FOSTER, violin:
Popular choruses.
- 10.22 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"Where Do You Work, John?"
"Baby Mine" (Rupp).
"Ain't That a Grand and Glorious Feeling?" (Tucker).
- 10.32 p.m.—EILEEN STARR, soprano:
"Pierrot" (de Rybnar).
- 10.33 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"I Always Knew I'd Find You" (Morse).
"The Doll Dance" (Brown).
"There's a Trick in Pickin' a Chick, Chick, Chickin'" (Tobias).
- 10.46 p.m.—J. ALEXANDER BROWNE, baritone:
Selected.
- 10.50 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS:
"Dax of Hearts and Flowers" (Tobias).
"Her Have Went, Her Have Gone, Her Have Left I All Alone"
"Nay, Nay, Neighbor" (Coadow).
- 11 p.m.—OUR GREAT THOUGHT:
"The power of music.—Explain it as we may, a martial strain will urge a man into the front ranks of battle sooner than an argument, and a fine sonnet will excite his emotions more certainly than a logical discourse."—Tuckerman.
Make Victoria more musical. Subscribe to the Million Shilling Fund.
- 11.1 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 11.40 p.m.—MARION LIGHTFOOT:
"Land of My Fathers" (Welsh air).
- 11.52 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 11.57 p.m.—EILEEN STARR, soprano:
Selected.

- 12.2 a.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 12.14 a.m.—J. ALEXANDER BROWNE, baritone:
Selected.
- 12.21 p.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 12.31 a.m.—MAJGIE FOSTER, violin:
Popular choruses.
- 12.38 a.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 12.43 a.m.—RITA HILTON, contralto:
"He was Wonderful" (Ayer).
- 12.53 a.m.—JOE ARONSON AND HIS SYMPOCATING SYMPHONISTS.
- 1 a.m.—GOD SAVE THE KING.

4QG, BRISBANE

Thursday

MIDDAY SESSION.

- 1 p.m.—Market reports, weather information, "The Daily Mail" and "The Daily Standard" news.
- 1.20 p.m.—A lunch hour address.
- 1.59 p.m.—Standard time signal.
- 2 p.m.—Close down.

AFTERNOON SESSION.

- 3.30 p.m.—A programme of music by the Studio Orchestra.
- 4.15 p.m.—"The Telegraph" news.
- 4.30 p.m.—Close down.

EARLY EVENING SESSION.

- 6 p.m.—"Daily Standard" news, another music.
- 6.19 p.m.—Lectures: "Care of the Hair" by Sister Rita.
- 6.30 p.m.—The children's session—stories by "The Sandman."
- 7 p.m.—Market reports; stock reports.
- 7.30 p.m.—Weather news; announcements; "Daily Standard" news.
- 7.45 p.m.—Weather Talk No. 1" by Mr. John Jones.

NIGHT SESSION.

- The first portion of tonight's programme will comprise classical music provided by Miss Vada Jeffries' Party.
- 8 p.m.—FROM THE STUDIO:
Instrumental trio—"Allegro, Scherzando, Andante, Moderato" (Cade).
Miss Adeline Colledge (piano), Miss Vada Jeffries (violin), Miss Mary Jeffries (cello).
Violin solos:
(a) "Boreas" (Yarnafelt).
(b) "Hornpipe" (Mietowski).
Miss Vada Jeffries.
Pianoforte solos:
(a) "Waltz" (Schumann).
(b) "Waltz" (Schumann).
Miss Adeline Colledge.
Song: "My Lovely Celia" (George Munroe).
Miss Kileph Capper.
Instrumental trio:
"Allegretto" from "Valse Marchon" (Schutt).
Miss Adeline Colledge, Miss Vada Jeffries and Miss Mary Jeffries.
Cello solo: "Carrus" (Fischer).
Miss Mary Jeffries.
Song:
"Phillie was a fair Maid" (Giles Earl).
Song Book M.S. 1515.
Miss Kileph Capper.
Instrumental trio:
"Larghetto Con Moto, Allegro" (Cade).
Miss Adeline Colledge, Miss Vada Jeffries and Miss Mary Jeffries.

CADENZA PLECTRAL CLUB.

8.30 p.m.—FROM THE STUDIO.
Orchestral Selection from "The Mikado" (Gulliver).
Mrs. Matthews' Cadenza Plectral Club.
A Thought for tonight:
"The Smoker of a Fire."
(W. H. Lewis)
Violin solo: Selected.
Miss Clara Matthews.
Bass solo:
"Young Tom o' Davon" (Bursell).
Mr. Stanley Tamblin.
Mandolin Quartette.
"Bird Songs at Kewstide" (Eric Coster).
Miss Edna Muntze and Party.
Orchestral:
"Les Hindoules Arrivables" (Ch. Arsen).
Mrs. Matthews' Cadenza Plectral Club.
Concerto solo:
"The Last Chord" (Bulliani).
Miss Dorothy Brown.
Tenor Baritone solo: "A Ho Day" (Weld).
Mr. Jim Matthews.
Soprano:
"Will you in the Land of Love"
(Geoffrey O'Hara).
Mrs. L. Hunter (accompanied by
Cadenza Plectral Club).
Tenor solo:
"Herewith Thy Window" (Teuchemacher).
Mr. S. P. Bacon.
March: "The N.C. 4" (F. C. Bleslow).
Mrs. Matthews' Cadenza Plectral Club.
WEST END SALVATION ARMY BAND.

8.35 p.m.—FROM THE STUDIO:
March: "In the Firing Line."
West End Salvation Army Band.
Contralto solo: "Down Here" (Buzak).
Miss Dorothy Brown.
Euphonium solo: "Old Folks at Home."
Bandman S. Woodland.
Recitation:
"When Dad Hung the Pictures."
Mrs. C. Field.
Corno solo: Selected.
Emston H. Woodland.
Bass solo:
"The Road that Brought you to me"
(Hamblen).
Mr. Stanley Tamblin.
Selection: "Song of Happiness."
The Salvation Army Band.
Tenor solo:
"What a wonderful world it would be"
(Lohr).
Mr. S. P. Bacon.
Vocal Quartette: "Some Blessed Day."
Quartette Party.
Chorus (vocal): Selected.
The Band.
Hymns: "It is Well with my Soul."
Harwich.
March: "Canada West."
The Salvation Army Band.
10.30 p.m.—"The Daily Mail" news.
Close down.

7ZL, HOBART

Thursday.

MORNING SESSION.
11 a.m. to 12 noon.

AFTERNOON SESSION.

2 p.m.—G.P.O. Clock chimes the hour.
2.1 p.m.—Tune in selection.
2.5 p.m.—Hobart Stock Exchange quotations.
Weather information. Items of interest.
announcements.
2.15 p.m.—Selections by 7ZL Studio Trio:
"Brise du Soir" (Gilles).
Suite—"Tales by Moonlight" (Thomas).
"Cello solo, Selected (Miss Bonnie Landa).
Selections from A Children's Suite (Ansell).
Violin Solo: Selected (Mr. E. J. McCann).
"A Camo" (Coleridge-Taylor).
"Salt of Armour" (Klar).
"Sparklets" (Miles).
4.15 p.m.—Chat by Child Welfare Nurse.
4.30 p.m.—Close down.

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EARLY EVENING SESSION.

- 6.20 p.m.—"Uncle Herbert" talks to the Children.
7 p.m.—"Doris Peters" half-hour.

NIGHT SESSION.

- 8.00 p.m.—Musical selection.
8.35 p.m.—Talk by Chas. H. Sims, Manager of Katala, Ltd. (Robert, subject: "Painting").
9.00 p.m.—"Mercury" special Tasmanian news service. Railway Auction. Produce sales. Weather forecasts. Robert Stock Exchange quotations.
9 p.m.—G.F.O. Clock chimes the hour.
9.15 p.m.—Selections by James' F.X.L. Band. Robert. (Conductor, Mr. C. Gaddard).
9.40 p.m.—British Official Wireless news.
9.50 p.m.—"Mercury" special Interstate news service. Ships within wireless range. Tasmanian district Weather reports. Station announcements. Tomorrow's programme.
9 p.m. Weather forecasts.
Close down.

- 1.50 p.m.—The Oak Hall Instrumental Trio.
2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 3 p.m.—"Big Ben," and announcements.
3.15 p.m.—A violin recital by the pupils of Edmund Peckolch.
3.15 p.m.—Eileen Temple, contralto.
"A fat old fellow" (Horton).
3.15 p.m.—Further violin items by the pupils of Edmund Peckolch.
3.30 p.m.—Marching music for school children.
3.40 p.m.—From Farmer's Tea Rooms. Florence Grant. (Soprano).
"Winds in the Trees" (Thomas).
3.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
(Leader, Mr. Horace Keate).
3.55 p.m.—From the Studio, Rene Barker, violinist.
"Allegro from Concerto Op. 18" (Vieuxtemps).
4 p.m.—From Farmer's Tea Rooms. Frank Ballam, baritone.
"A King's Man" (Billiant).
4.5 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.15 p.m.—From the Studio, Eileen Temple, contralto.
"A song remembered".
4.20 p.m.—From Farmer's Tea Rooms. Florence Grant.
"Though some Spain" (Matten).
4.25 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.35 p.m.—From The Studio, Rene Barker, violinist.
"Romance" (Wibben).
4.40 p.m.—From Farmer's Tea Rooms. Frank Ballam, baritone.
"Lullabies" (Sanderson).
4.45 p.m.—Stock Exchange, third call.
4.48 p.m.—From the Studio, Rene Barker, violinist.
"Hungarian Dance No. 5" (Brahms).
4.52 p.m.—Studio music.
5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

- 5.40 p.m.—The chimes of 2FC.
5.45 p.m.—The "Hello Man" talk to the children.
6.15 p.m.—A recital by the Juvenile pupils of Madame Ada Baker.
6.25 p.m.—Story time for the young folk.
6.40 p.m.—Studio music.
6.50 p.m.—"Big Ben." The 2FC Commissioner will give the latest racing information.
7.10 p.m.—Dalrymple's market reports (wool, wheat and stock).
7.18 p.m.—Fruit and vegetable markets.
7.20 p.m.—Weather and shipping news.
7.25 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 7.40 p.m.—Programme announcements.
7.45 p.m.—The Leon Instrumental Quartet (a) "Knight Errant" Overture (Benda).
(b) Flute solo, "Perfect Day"
(c) Violin solo, "Hungarian Fantasy" (Waze).
8 p.m.—"Big Ben." From Her Majesty's Theatre, Pitt Street, Sydney—(by permission of Messrs. J. C. Williamson Limited).

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Friday, Dec. 2 2FC, SYDNEY.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

- 10 a.m.—"Big Ben," and announcements.
10.15 a.m.—Studio music.
10.15 a.m.—"Sydney Morning Herald" news service.
10.30 a.m.—Studio Music.
10.35 a.m.—A Reading.
10.45 a.m.—Studio Music.
11 a.m.—"Big Ben." Marching music for school children.
11.5 a.m.—A.P.A. and Renter's Cattle Services.
11.50 a.m.—Studio music.
11.55 a.m.—A talk on home cooking and recipes by Miss Ruth Furst.
12.00 a.m.—Close Down.

MIDDAY SESSION.

- 12 p.m.—"Big Ben," and announcements.
12.2 p.m.—Stock Exchange, first call.
12.3 p.m.—Official weather forecast, rainfall.
12.5 p.m.—Studio music.
12.10 p.m.—Summary of "Sydney Morning Herald" news service.
12.20 p.m.—Studio music.
12.45 p.m.—Lewis Herrick, baritone:
"The Village Boatman" (Chalkstone-Kreeman).
12.55 p.m.—The Oak Hall Instrumental Trio: (Leader, Mr. Horace Keate).
1.00 p.m.—Studio music.
1.05 p.m.—"Big Ben" and weather intelligence.
1.15 p.m.—"Evening News" midday news service.
1.30 p.m.—The Oak Hall Instrumental Trio.
1.35 p.m.—Stock Exchange, second call.
1.50 p.m.—Marching music for school children.
1.40 p.m.—Lewis Herrick, baritone:
"Elegy" (Massenet).
1.45 p.m.—Studio music.

"CASTLES IN THE AIR"

Act One.

Musical Numbers:—

Music by Percy Wenrich.

- Opening Ensemble Chorus
 Song, "Two little True little Blue little Eyes" Floe Allan
 Song, "Love's Refrains" Beryl Walkley
 Song, "Lancers of Love" ... Rowena Ronald
 Duet, "Ha, Ha, Ha"
 Song, "The Other Fellow's Girl"
 Gus Bluett
 Song, "If you are in love with a girl"
 Roy Russell
 Song, "First kiss of love" ... Rowena Ronald
 Duet, "I would like to fondle you"
 Gus Bluett and Floe Allan
 Reprise, "Lancers of Love"
 Rowena Ronald and Roy Russell
 Finale Principals and Ensemble
 Scene: "Evelyn's 21 Club, Westchester, U.S.A."
 8.8 p.m.—From the Studio: W. F. Kay will talk of noted Stage Villains.
 8.20 p.m.—Gwen Selva, Lyric Soprano:
 "Mi Chiamano Mimì," from "La Bohème"
 (Puccini).
 8.25 p.m.—Coltman and Harris, Instrumental
 Items.
 8.34 p.m.—Win and Windie, English Entertainers.
 8.40 p.m.—Cricket Reminiscences Prepared by Mr. Frederick Harper.
 8.50 p.m.—The Local Quartette, Instrumentalists:
 (a) "Hello, Dumbird"
 (b) Medley of Jazz Numbers.
 (c) "Slow River."
 9.0 p.m.—"Big Ben": Win and Windie, English Entertainers.
 9.8 p.m.—Ad Cren, Scotch Comedian:
 (a) "The Lassie" (Cree).
 (b) "The Centenarian" (West).
 9.14 p.m.—Gwen Selva, Lyric Soprano:
 (a) "Elegance" (Strauss).
 (b) "Wiesenthal" (Wever).
 (c) "Song in Spring Time" (Schubert).
 9.22 p.m.—Coltman and Harris, Instrumentalists.
 9.35 p.m.—Latest Weather Forecast; Len Maurice, Popular Baritone.
 9.40 p.m.—Cec Morrison's Dance Band.
 9.48 p.m.—Ad Cree, Scotch Comedian:
 "I've Just Come up for the Day" (Lorimer).
 9.50 p.m.—Cec Morrison and His Glomchairs.
 9.57 p.m.—Late News and Announcements.
 10.0 p.m.—"Big Ben": Cec Morrison and His Glomchairs.
 10.8 p.m.—Len Maurice, Baritone.
 10.15 p.m.—Cec Morrison and His Glomchairs.
 10.22 p.m.—Len Maurice.
 10.34 p.m.—Cec Morrison and His Glomchairs.
 10.39 p.m.—National Anthem; Close Down.



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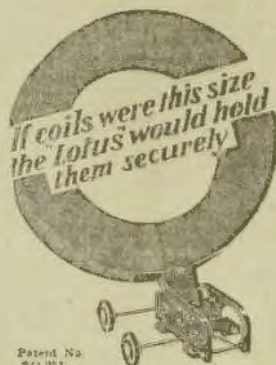
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3LO, MELBOURNE.

- Friday.
 MIDDAY SESSION.
 12 noon.—MELBOURNE OBSERVATORY TIME SIGNAL.
 12.1 p.m.—Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day. Reuters' and the Australian Press Association cables. British official wireless news from Rugby. "Argus" news service.

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Street, Melbourne.

12.20 p.m.—COMMUNITY SINGING IN THE STUDIO. Conductor, Mr. G. J. MACKAY. Assisted by STUDIO QUARTET.

SOLOISTS—

- JOHN T. FRASER, baritone: "Ave Maria" (Schubert).
"Solano."
ALMA BURLOCK, soprano: "Three Green Hills" (Lackaday).
"Lackaday" (Crompton).

1.45 p.m.—Under the auspices of the National Safety Council of Australia, SNR CONDUCTOR STABLE LAMPERT, of the Police Department, will speak on "Safety First in Other Countries."

1.50 p.m.—Stock Exchange Information, Meteorological information, Weather forecast and rainfall for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast. River reports.

2 p.m.—Close down.

AFTERNOON SESSION

3 p.m.—Melbourne Observatory Time Signal.
3.1 p.m.—HOYT'S GARDINER REGENT ORCHESTRA:

"Spring Song" (Mendelssohn).
"Valse Reot Song."

3.10 p.m.—MISS FRANCES FRASER:
"Quiet Nooks in London."

3.20 p.m.—HOYT'S GARDINER REGENT ORCHESTRA:

Selection: "Bobeme" (Puccini).
3.25 p.m.—MARIE MAGAN, soprano:

"The Cloche" (Lalo).
"Sing not, fair Christiana Maid."

3.40 p.m.—No. 1 AIRCRAFT DEPOT—POINT COOKE: "On Pete."

Description by Mr. Norman McCauley.
3.57 p.m.—E. MASON WOOD, baritone:

"The Fenner" (Ireland).
"Ty Andrus."

4.4 p.m.—HOYT'S GARDINER REGENT ORCHESTRA:

"The Swan" (Saint Saens).
4.3 p.m.—MARIE MAGAN, soprano:

"Hymn au Soleil" (Rachmaninov).
"Chanson Indoue" (Rachmaninov).

4.15 p.m.—HOYT'S GARDINER REGENT ORCHESTRA:

Waltz Medley, "Home, Sweet Home" (Auber).
4.23 p.m.—E. MASON WOOD, baritone:

"I am a Goodie" (Clarke).
"Off to Philadelphia" (Harned).

4.30 p.m.—MRS. M. CALLAWAY MAHOOD: Personalities in Art.

"The Gentle Art of Making Enemies."
4.45 p.m.—"Herald" news service. Stock Exchange information.

5 p.m.—Arrival at No. 1 AIRCRAFT DEPOT, POINT COOKE, of

"Father Christmas" by Aeroplane.
Description by Mr. Norman McCauley.

5.50 p.m.—Close down.

EVENING SESSION.

5.50 p.m.—Announcements to letters and birthday greetings to "BILLY BUNNY."

6 p.m.—STUDIO QUARTET.
"The Two Gallares" (Horlick).

6.10 p.m.—CAPT. DONALD MACLEAN:
"Pirates and More Pirates."

6.25 p.m.—PETER DAWSON, bass-baritone:
"The Pirate Song" (Gilbert).

"The Smurgle's Song" (Kernochan).
6.52 p.m.—"BILLY BUNNY." "The Adventures of the Treasure Seekers."

6.40 p.m.—Official report of Newmarket Stock Sales by the Associated Stock and Station Agents, Bourke Street, Melbourne. Number of sheep and cattle drawn for week's sale.

6.40 p.m.—"Herald" news service. Weather synopsis. Shipping movements.

6.52 p.m.—Stock Exchange information.

6.57 p.m.—Fish market reports by J. R. Barnett, Ltd. Rabbit prices.

6.50 p.m.—River reports.

7.12 p.m.—Market reports by the Victorian Producers' Co-operative Co. Ltd. Fruit, grapes, hay, straw, pigs, dairy produce, potatoes and onions. Market reports of fruit by the Victorian Producers' Association. Retail prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus Fruits.

WIRELESS NIGHT SESSION.

7.15 p.m.—Under the auspices of the Department of Agriculture:

MR. J. M. WAHD, Superintendent of Horticulture will speak on "The Apple Range Industry."

7.45 p.m.—COLLINGWOOD CITIZENS' BAND:

March, "Marine Artillery."
Fox Trot, "For My Sweetheart."

7.52 p.m.—MR. H. K. LOVE:

Mr. Love will be glad to attend to your wireless difficulties and we ask you to write to him for any advice that you may require.

8.2 p.m.—COLLINGWOOD OFFICERS' BAND:
Selection: "Gems of Italian Opera."

8.12 p.m.—GERTRUDE RUTTON, contralto:
"I Came with a Song" (La Fosse).

"It thou, sweet blind" (Johnson).
8.19 p.m.—MOANA LUA DUG:

"Hawaiian Melodies."
8.24 p.m.—COLLINGWOOD OFFICERS' BAND:

Trombone solo, "The Victory."
Soloist, A. Thorne.

8.33 p.m.—VICTORIA WILSON, soprano:
"Black Room" (Schubert).

"Invitation" (K. Barry).
8.40 p.m.—MAGGIE POSTER, violin:

"Pianissimo d'Amore."
"Maggie Blues."

8.50 p.m.—COLLINGWOOD CITIZENS' BAND:

Waltz, "Gypsy Love."
8.50 p.m.—Mr. David Masterton, "Millie's Shilling Fund."

9 p.m.—Announcements.

The Royal Automobile Club of Victoria's Safety Message for to-day is for MOTORISTS:

"ALWAYS keep yourself and your vehicle in safe driving order. Be completely master of it, and do not drive if you are too physically fit to do so."

Under the auspices of the Health Association of Australasia the HEALTH MESSAGE for to-day is:

"So plan your hours of recreation that each day you commence work with a clear eye and a clear head, physically and mentally alert, as to be as well equipped as your fellow."

8.4 p.m.—NORMAN BENNETT, tenor:
Japanese Lieder—"Homeward" (Wills Goss).

Songs from the Chinese—"Adrift" (Brock).

9.11 p.m.—MOANA LUA DUG:
Hawaiian Melodies.

9.18 p.m.—GERTRUDE RUTTON, contralto:
"Peace" (Schubert).

"I Wonder Why" (Raymond).
9.25 p.m.—COLLINGWOOD CITIZENS' BAND:

Coronet solo, "Silver Threads Among the Gold."

Part song, "Sweet and Low."

9.32 p.m.—"CARDIGAN," Mr. H. A. Wolfe, sporting editor of the "Argus" and "Australasian," will speak on to-morrow's racing.

9.42 p.m.—COLLINGWOOD CITIZENS' BAND:

"Doehring Minuet."
Grand March, "Edina."

9.49 p.m.—Meteorological information. Road notes. Island steamer movements.

10 p.m.—MAGGIE POSTER, violin:
"When Song is Sweet."

"Lieschen" (Kreutzer).
10.7 p.m.—NORMAN PILL, comedian:

"Number Engaged."

10.14 p.m. — COLLINGWOOD CITIZENS'

BAND:

Sotto: "A Rustle Holiday."

10.24 p.m.—"AFTER" news service. British official wireless news from Rugby.

10.31 p.m.—NORMAN BENNETT, tenor:

"Mountain Voice" (Byrsonne Terharne).

"Tally Ho" (Lewy).

10.33 p.m.—NORMAN PILL, comedian:

"Advice for the Holidays."

10.45 p.m.—JOE ARONSON AND HIS

SYNCPATING SYMPHONISTS:

Selected.

11 p.m.—OUR GREAT THOUGHT:

"The Eternal begets the immortal.

Love is the spirit of life, and

Made the life of the Spirit."

—Coleridge.

11.1 p.m.—JOE ARONSON AND HIS

SYNCPATING SYMPHONISTS.

11.40 p.m.—GOD SAVE THE KING.

4QG, BRISBANE

Friday.

MIDDAY SESSION.

1 p.m.—Market reports, weather information, "The Daily Mail" and "The Daily Standard" news.

1.34 p.m.—Lunch hour music.

1.54 p.m.—Standard time signal.

2 p.m.—Close down.

AFTERNOON SESSION.

3.58 p.m.—A programme of music from the Studio.

4.12 p.m.—"The Telegraph" news.

4.55 p.m.—Close down.

EARLY EVENING SESSION.

6 p.m.—"Daily Standard" news, weather information, announcements.

6.50 p.m.—Lecturette; A Law Talk "First Principles of Probate Law," by Mr. C. E. Stewart (Barrister-at-law).

8.30 p.m.—Bedtime stories, by "The Handman."

7 p.m.—Market reports, stock reports.

7.59 p.m.—Weather news, announcements; "Daily Standard" news.

7.42 p.m.—Standard time signal.

7.45 p.m.—Lecturette; A Queensland's Impressions of Rural Europe—the last of a series, by Mr. J. F. F. Reid, Editor, Queensland Agricultural Journal.

NIGHT SESSION.

C.C.M. CONCERT.

To-night's programme has been arranged by the C.C.M. and will be relayed from the Company's Rooms, Creek and Adelaide Streets.

8 p.m.—FROM THE C.C.M.:

March, "The Hammer" (Travis).

C.C.M. Orchestra.

Soprano solo, "Carmena" (Lace Wilton).

Mrs. A. Jordan.

Pianoforte solo, "5th Nocturne" (J. L.

bach).

Miss J. McDonald.

Baritone solo, "Didn't Thou But Know"

(Wright).

Mr. A. N. Palk.

Violin solo, "Serenade" (Franz Dreda).

Mr. Allan Harris.

English Concertina:

(a) "Di Penatori Ignobile."

(b) "Il Tenore Petruccio."

(c) "Ah Che la Morte."

Mr. and Miss Griffiths.

Alto solo, "Dear Old Dad" (Allan Hestrey).

Master Earl Brown.

Pianoforte duet, "Spring Festival" (R. Lich-

ner).

Misses Thelma Harris and Rita Blake.

Tener solo, "O Bell Mio."

Mr. G. Cookman.

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The Flapper's Lament

Dad read somewhere that the sun is a wonderful toad, so he lay on the bench for two hours. Now he is eating his meals off the mantelpiece and has blisters on his sense of humor. So I have come to the rescue.

I have been pushing my way through the long grams on his recent articles,—mostly about women. Lend me your ear:

Dad imagines himself a modern Viking with a huge dominating personality and a reverberating voice which belongs to cave man days. Actually he is fat, bald, prosy, and chirps, "Yes, my dear," to mother in the accents of a sick sparrow!

His New System friends have certainly taught Dad a good deal since the day he brought home a splendid dry battery,—the Burgess,—and then sang up to know how often he had to pour water into it!

The real fact is, that he has an "inferiority complex" when Mother is around, and the only way he can swell out is to read the Adventure Booklet sent to him from 280 Castlereagh Street by N. S. T. Pty., Ltd,—no need to spell it out.

Then he expands into a Hurley or a Byrd or a Kingsford Smith,—waves his Burgess Battery as he charges New Guinea savages or uses it as a magic carpet to hop across the Pacific.

About that time I fade gently through the door and pick up one of my retinas.

I wonder if "he" will some day be podgy, prosy, particular and pathetic? It's a terrible risk for a girl!

Yet, after all, matrimony to-day seems very like a Burgess Battery,—after a few years you can swap the old for the new and start afresh. It reminds me of Life—born, bobbed, buried and begin again!

And they say that no sound is ever lost but goes on vibrating for ever. My hat! Just imagine listening in some day to 49 variants of "you are the first girl I ever kissed!" Wouldn't it jar the fiftieth fellow who had just split the same hoary old lie!

Sorry,—there's Dad calling for liniment! Cheerio, my children! Buy Burgess and be happy!!

Contralto solo, "The String of Pearls" (Philips).

Miss L. McSwain.
Vocal, "Garden of Lilies" (Ormsby).
C.C.M. Orchestra.
Elocutionary item, Selected.
Miss Sibley.
Fox Trot, "Roses" (Britt).
C.C.M. Orchestra.
Soprano solo, "Spring Awakening" (Sander-son).
Mrs. A. Jordan.
Pianoforte solo, "Polonaise," Op. 40, No. 2 (Chopin).

Miss Rashelle Phillips.
English Concertina.
(a) "El Buen Del Sur."
(b) "Da Gad Di."
Mr. and Miss Griffiths.
Contralto, "An Emblem" (Jack Thompson).
Tenor solo, "Morning" (Lily Speaks).
Mr. G. H. Cole.
Baritone solo, "Drake Goes West" (Sander-son).
Mr. A. N. Falk.
Pianoforte solo, "Valse Chromatique" (Godard).

Miss Thelma Harris.
Recitation, Selected.
Miss Dorothea Rows.
One Step, "Kentucky Sunshine" (King).
C.C.M. Orchestra.
Pianoforte duet, "Fete Champenoise" (C. Leisner).
Misses Thelma Harris and Rita Blake.
Tenor solo, "The Pal that I Loved."
Mr. G. Cashman.
Violin solo, Intermezzo from "Cavalleria Rusticana" (Mascagni).
Mr. Allan Harris.
Fox Trot.
(a) "What a Marvellous Girl" (Gleason).
(b) "Oriental Moonlight."
C.C.M. Orchestra.

10 p.m.—FROM THE STUDIO:
"Daily Mail" news; sporting news.
Close down.

Saturday, Dec. 3 2FC, SYDNEY

EARLY MORNING SESSION.

7.0 a.m. to 8.0 a.m.

MORNING SESSION.

10.0 a.m.—"Big Ben" and Announcements.
10.5 a.m.—Studio Music.
10.15 a.m.—"Sydney Morning Herald" News Service.
10.30 a.m.—Studio Music.
10.35 a.m.—A Talk by the 2FC Racing Commissioner.
10.45 a.m.—Studio Music.
11.0 a.m.—"Big Ben"; Studio Music.
11.5 a.m.—A.P.A. and Reuter's Cable Services.
11.15 a.m.—Studio Music.
11.15 a.m.—A Talk on Gardening by Mr. G. J. Lockley ("Redgem").
11.30 a.m.—Close Down.

MIDDAY SESSION.

12 noon—"Big Ben" and Announcements.
12.2 p.m.—Stock Exchange, first call.
12.3 p.m.—Studio Music.
12.20 p.m.—"Sydney Morning Herald" News Service.
12.35 p.m.—Rugby Wireless News.
12.35 p.m.—Studio Music.
NOTE.—During the Afternoon Results of the A.J.C. Meeting at Warwick Farm, will be given as received.
1.0 p.m.—"Big Ben"; Weather Intelligence.
1.3 p.m.—"Evening News" Midday News Service.
1.35 p.m.—Studio Music.

AFTERNOON SESSION.

3.0 p.m.—The Crystal Palace Theatre Orchestra, from the Crystal Palace Theatre, George Street, Sydney.
NOTE.—During the intervals of racing, results and other sporting events, musical items will be given, including—
"The Street Musicians," Instrumental Trio.
Ryd Montigue, Ukulele Numbers, and
The Crystal Palace Theatre Orchestra.
4.30 p.m.—Complete Resume of the Day's Sporting Events.
5.0 p.m.—"Big Ben"; Close Down.

EARLY EVENING SESSION.

6.40 p.m.—The Chimes of 2FC.
6.45 p.m.—The "Zello Man" Talks to the Children.
6.50 p.m.—Story Time for the Young Folk.
6.40 p.m.—Studio Music.
7.0 p.m.—"Big Ben"; Weather Intelligence.
7.3 p.m.—Late Sporting News.
7.15 p.m.—"Evening News" Late News Service.
7.25 p.m.—Studio Music.

NIGHT SESSION.

7.40 p.m.—Programme Announcements.
7.45 p.m.—Jean Gerrard, Melopiano numbers.
7.55 p.m.—R. A. Bartleman, Baritone.
(a) "The Rancher's Daughter" (Lehmann).
(b) "Mine, All Mine" (Haroldson).
8.0 p.m.—"Big Ben"; Andrew Higginson and Enid Lavie, Entertainers:
(a) "Smilin' Through" (Fenn).
(b) "Grey Days" (Johnson).
8.8 p.m.—Mabel Batchelor, Soprano.
8.35 p.m.—Roy Ryan, Whistling Vocalist:
(a) "Bird Impersonations."
8.21 p.m.—Scott Alexander will present an original Coddington Ball Radio Comedy, entitled:
"A Pair of Geese and a Brace of Geese."
A Modern Comedy of Curious Coincidences.
8.36 p.m.—Andrew Higginson and Enid Lavie, Entertainers:
(a) Putter.
(b) "Grandfather's Whiskers" (Watson and Walsh).
(c) "When I am Dead My Dearest" (Taylor).
8.46 p.m.—"Two Festive Carolles":
(a) "Bubb, Your Mother" (Burke).
(b) "Doll Dance" (Brown).
8.54 p.m.—Jean Gerrard, Melopiano numbers.
8.58 p.m.—"Big Ben"; Weather Forecast.
9.3 p.m.—The Ambassadors' Dance Orchestra, conducted by Al Hammett.
9.20 p.m.—R. A. Bartleman, Baritone, from the Studio:
(a) "Old Furniture" (Arncliffe).
(b) "The Waterman" (Helmsley).
9.28 p.m.—Roy Ryan, Whistling Vocalist:
(a) "Song of the Wanderer."
(b) "The Fairyland."
9.36 p.m.—Andrew Higginson and Enid Lavie, Entertainers:
(a) Putter.
(b) "Sax Nuts" (Dupres).
(c) "Eyes That Used to Gaze in Mine" (Lohr).
9.46 p.m.—The Ambassadors' Dance Orchestra, conducted by Al Hammett.
9.55 p.m.—From the Studio: The "Two Festive Carolles":
(a) "Moonlit Waters" (Friend).
(b) "Just the Same" (Donaldson).
10.3 p.m.—Roy Ryan, Whistling Vocalist:
"Repsax March."
10.5 p.m.—Mabel Batchelor, Soprano.
10.13 p.m.—From the Ambassadors' The Ambassadors' Orchestra, conducted by Al Hammett.
10.57 p.m.—Late News and Announcements.
11.0 p.m.—"Big Ben"; The Ambassadors' Dance Orchestra, in popular numbers, until 11.45 p.m.
NOTE.—During the dance intervals at the Ambassadors, Musical Items will be heard from the Studio.
11.45 p.m.—National Anthem; Close Down.

3LO, MELBOURNE.

Saturday.

MORNING SESSION.

11 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS.

"In An Oriental Garden" (Harse).
"Meet Me in the Moonlight" (Davis).
"The Blues" (De Smet).11.10 a.m.—MARY THIRWALL, soprano.
"The Populars of Flanders" (De Clerck).
"Wind Song" (Rogers).

11.17 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:

"Blue Skies" (Berlin).
"Dawn of To-morrow" (Green).
"Rose Leaf" (Ash).11.23 a.m.—JOHN D. FRAZER, baritone.
"When All was Young" (Gounod).
"The Last Hour."

11.29 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:

"Ain't She Sweet" (Yellen).
"Crazy Words Crazy Tune" (Yellen).
"There's a Trick in Pickin' a Chick Chick Chick" (Tobias).11.45 a.m.—MARY THIRWALL, soprano.
"Early Morning" (Pell).
"Dances" (Nawley).

11.52 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:

"Love is Just a Little Bit of Heaven" (Brown).
"She's Got It" (Davis).

12 noon.—Melbourne Observatory Time Signal.

12.15 p.m.—Help your city clean and beautiful: don't throw newspapers and fruit peel about. Be alive to your responsibilities. Don't say "That is somebody else's work." Cultivate an individuality of your own.

12.15 p.m.—Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day. British "Globe" Wireless News from Rugby, Reuters and the Australian Press Association cable. Argus news service.

12.28 p.m.—STUDIO QUARTETTE.

Selection, "42nd St., Manhattan."
12.30 p.m.—JOHN D. FRAZER, baritone."Mogley Lak, a Rose."
"Mountain Lovers."

12.37 p.m.—Music Exchange information.

12.40 p.m.—MAGGIE FOSTER, violin.
"Souvenir de Rubenstein" (Cyril Monk).
"Cavatina."12.47 p.m.—VERONICA COX, soprano.
"Bardes-vans" (Aletter).

"The Birds Go North Again" (Wibbey).

12.51 p.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:

"Who's Your Man That's Who" (Olser).

1 p.m.—Melbourne Observatory Time Signal.

MIDDAY SESSION.

1.1 p.m.—ALAN MITCHELL, tenor.
"My Liege Lady" (Montagu Phillips).
"The Dream" (Rubenstein).

1.5 p.m.—Meteorological information. Weather forecast and rainfall for Victoria, Tasmania, South Australia and New South Wales. Ocean forecasts. River reports.

1.15 p.m.—STUDIO QUARTETTE.
Selection, "Katie."1.25 p.m.—VERONICA COX, soprano:
"Song of the Open" (La Forge).
"The Lass with the Delicate Air" (Arns).1.32 p.m.—STUDIO QUARTETTE.
Selection, "I'll Be Home."1.40 p.m.—ALAN MITCHELL, tenor:
"In Summer Time on Bredan."
"Madeline" (Wm. James).

1.47 p.m.—Under the auspices of the Safety Council of Australia, MR. H. J. BOOK (Secretary), will speak on "Safety Education and Safety in the Home."

1.54 p.m.—Description of Hurle Road two miles. V.R.C. BENEVOLENT FUND MEETING. MOONEE VALLEY, by Messrs. of the Sporting Globe.

1.58 p.m.—Description of Cricket Match, St. Kilda v. Collingwood, at St. Kilda, by Mr. Rod McGregor.

2.15 p.m.—Close down.



What Mr. Maclurcan expects of a Radio Set

When you are choosing your Radio, you must look for—and insist upon—seven essential points, says Mr. Charles Maclurcan, A.M.I.R.E., the well-known radio expert.

1. Perfect tone reproduction with a simple method of controlling volume.
2. Sufficient sensitivity and number of valves to enable reception of all Australian stations with good volume. Usually five or six are necessary for this.
3. It must be selective, so that there is no interference between stations.
4. It must be simple to control, with not more than two, but preferably one dial for tuning.
5. It must not be an eyesore in appearance. But at the same time you must remember it is a Wireless Set, and not have it disguised as a sideboard or a perambulator.
6. It should not cost more than £40 or £50 complete with all accessories.
7. It should be fully guaranteed and purchased from a firm of such standing that the guarantee means something.

The "D.J. Super-Six" amply meets these demands. We invite you to come in and test it out for yourself in our Radio Department, 22 York Street, or write for further particulars.

Cash price, ready to instal, is £45 or £4/10/- deposit and 17/3 weekly for one year.

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are given by Mr. Basil Cooke, F.R.A.S.*

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Control is effected from a central dial, and each stage is completely protected with copper shields. The cabinet has ample space for all batteries; supplied with accessories and loud speaker. Price \$52/10-

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Extra Equipment for the Enthusiast

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"N. & K." Price, per pair	17/6
"Peerless." Price, per pair	21/-
"Radiola." Price, per pair	35/-
New double-reading voltmeter; 0-10 and 0-100, Price, each, 12/6	

FARMER'S

SYDNEY

Wireless Department, Ground Floor, Market Street

2.30 p.m.—Description of Two-year-old Handicap, four furlongs, V.R.C. BENEVOLENT FUND MEETING, MOONEE VALLEY, by Masket, of The Sporting Globe.
2.35 p.m.—Close down.

AFTERNOON SESSION

- 3 p.m.—Melbourne Observatory time signal.
3.1 p.m.—Description of Welter Plate, 3 furlongs, V.R.C. BENEVOLENT FUND MEETING, MOONEE VALLEY, by Masket, of The Sporting Globe.
3.2 p.m.—HARRY SHUGG'S STUDIO BAND. Selection, "La Traviata" (Verdi). Intermezzo, "Hypatia" (Harms).
3.20 p.m.—Description of Cricket Match, St. Kilda v. Collingwood, at St. Kilda, by Mr. Rod McGregor.
3.20 p.m.—Description of Fund Handicap 1/4 mile, V.R.C. BENEVOLENT FUND MEETING, MOONEE VALLEY, by Masket, of The Sporting Globe.
3.25 p.m.—Progress reports of Victorian Tents for Australia and New Zealand track and field games championship, at Amateur Sports Ground.
3.25 p.m.—HARRY SHUGG'S STUDIO BAND. Comedy overture, "La Coquette" (Lauranti). Waltz, "Sombire las Olas" (Roas). March, "Our Chum" (Himmer).
3.40 p.m.—Description of Hightweight Handicap 1 mile, V.R.C. BENEVOLENT FUND MEETING, MOONEE VALLEY, by Masket, of The Sporting Globe.
3.45 p.m.—Description of Cricket Match, St. Kilda v. Collingwood, at St. Kilda, by Mr. Rod McGregor.
3.50 p.m.—Progress reports of Victorian tents for Australia and New Zealand track and field games championships at Amateur Sports Ground.
3.55 p.m.—HARRY SHUGG'S STUDIO BAND. "Independencia" (Hall). Tense solo, "Cuba o Cuba" (Sicily). Two-step, "The Ragtime Bass Player" (Pratt). Waltz, "Will o' the Wisp" (Gouriel).
3.45 p.m.—Description of Welter Purse, six furlongs, V.R.C. Benevolent Fund Meeting, Moonee Valley, by Masket, of The Sporting Globe.
3.45 p.m.—Progress report of Victorian tents for Australia and New Zealand track and field games championship at Amateur Sports Ground.
3.55 p.m.—Herald news service. Stock Exchange information.
3.10 p.m.—Description of cricket match, St. Kilda v. Collingwood, at St. Kilda, by Mr. Rod McGregor.
3.50 p.m.—Close down.

EVENING SESSION

- 5.50 p.m.—Sporting Results.
5.40 p.m.—Answers to Letters and Birthdays Greeting by "LITTLE MISS KOOKABURRA."
5.15 p.m.—STUDIO QUARTETTE. "March Mignonne" (Jannson).
5.17 p.m.—LITTLE MISS KOOKABURRA. "A Story for the Little One."
5.25 p.m.—STUDIO QUARTETTE. "Lotta" (Friml).
5.31 p.m.—LITTLE MISS KOOKABURRA. "The Flirty Fairy" (continued).
5.40 p.m.—Sporting Results.
5.45 p.m.—"Herald" News Service; Weather Synopsis; Shipping Movements.
5.52 p.m.—Stock Exchange Information.
5.57 p.m.—River Reports.
7.0 p.m.—Market Reports by the Victorian Producers' Co-operative Co., Ltd.: Poultry, Grain, Hay, Straw, Jute, Dairy Produce, Potatoes and Onions; Market Reports of Fruit by the Victorian Fruitlers' Association; Retail Prices; Wholesale Prices of Fruit by the Wholesale Fruit Merchants Association; Citrus Fruits.

NIGHT SESSION

- 7.15 p.m.—MR. CLARENCE WEBBER. "Health Talk."

- 7.30 p.m.—Mr. E. PESCOTT:
"Australian Fibre Plants."
- 7.40 p.m.—THE LEGACY CLUB:
Tale by a "Gothic."
- 8.00 p.m.—SCOTCH HOUR.
- 8.0 p.m.—BRUNSWICK CITY BAND:
March, "Moray Fish."
- 8.5 p.m.—SOUTHERN CHORAL SOCIETY
(Conductor, Graham Burgin), (Pianist,
Oliver McKillop):
"Loch Lomond."
"Mothin' Auldie," arr. (P. Fletcher).
- 9.15 p.m.—MRS. GRABAM BURGIN,
Soprano:
"Annie MacDonald."
- 9.34 p.m.—BRUNSWICK CITY BAND:
Overture, "Prince Charlie" (Vollt).
- 9.35 p.m.—GERTRUDE ARMSTRONG, Flute:
"Scottish Airs."
- 9.31 p.m.—GRAHAM BURGIN, Baritone:
"Maree."
- 9.57 p.m.—BRUNSWICK CITY BAND:
Fantasia, "Fair Maid of Perth" (Vollt).
(With vocal solo from the Southern Choral
Society).
- 9.47 p.m.—SOUTHERN CHORAL SOCIETY:
"The Banks of Doon."
"An Eskay Love Lull" (arr. by Robertson)
INTERLUDE.
- 9.54 p.m.—MR. J. ROWLETT ROSS:
"Hippie Lolo and the Kurewa Stockade
Battle."
- MUSICAL COMEDY.
- 9.59 p.m.—"THE STUDENT PRINCE,"
transmitted from His Majesty's Theatre, by
permission of J. C. Williamson, Ltd.
Acts II, and III.—Music by Sigmund Rom-
berg, Lyrics and Book by Dorothy Don-
nelly, with the Royal Comic Opera Com-
pany.
- SYNOPSIS OF MUSICAL NUMBERS.
- ACT II.
- "Farmer Jacob," STUDENTS (off stage).
"Student Life," PRINCE ENGEL, KATHIE,
GRETCHEN, BETTIE, LUCAS, VON
ASTERKING, TONI, and STUDENTS.
"Farewell, Dear," PRINCE and KATHIE.
"Deep in My Heart," ENTIRE COMPANY.
- ACT III.
- Waltz, ENSEMBLE.
"Just Wa' Two," PRINCESS, TARNITZ
and COMPANY.
Gavotte.
Finale, KARL, FRANZ, KATHIE, ENGEL,
and STUDENTS.
- FROM THE STUDIO.
- 10.31 p.m.—BRUNSWICK CITY BAND:
Cornet Solo, "The Nightingale."
Soloist: A. McEwan.
- 10.40 p.m.—Late Sporting Results.
The Royal Automobile Club of Victoria's
Safety Message for to-day is for PEDES-
TRIANS:
"Always look both ways before crossing.
Don't suddenly step off the footway with-
out looking, and with your back to on-
coming traffic."
Under the auspices of the Health Asso-
ciation of Australasia, the HEALTH MES-
SAGE for to-day is—
"People would have better health if they
would remember that the stomach is a
workroom, and not a playhouse."
10.52 p.m.—BRUNSWICK CITY BAND:
March, "The Quarter Column" (Hemel).
- 11.0 p.m.—OUR GREAT THOUGHT:
"Music is a discipline and a mistress of
spirit and good manners."—Luther.
Make Victoria More Musical. Subscribe
to the Million Shilling Fund.
- 11.1 p.m.—JOE ARONSON AND HIS SYN-
COPATED SYMPHONISTS.
- 11.40 p.m.—GOD SAVE THE KING.

Still Further Reduced Brown Cabinet & H.Q. Models

Quality now talks price

IN most instances quality and low price do not blend to any great degree, but now with the announcement of new and greatly lowered prices for certain popular Brown Loud Speaker Models, it can be safely claimed that quality now talks price!



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Type	Old Price.	New Price.
H.Q.	£7/15/0	£7/-
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Keen as were the values offering by each of these models previously, the new prices featured indicate them as being doubly attractive.

Every Brown Speaker Guaranteed

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Each Brown Speaker sold is covered by a generous guarantee—a fact which assured the purchaser of the unconditional correction of any defect which should occur within a certain period, after buying. No matter what the purpose—or the price limit, there is a Brown Loud Speaker or headphone to meet each individual requirement.

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All Readers' Queries Answered Here.

F.O.M. (HORSVILLE).—Q: As a consistent reader of your popular weekly journal, I wish to ask your advice on a little trouble I have had in building the Happiness Triax Valve Refler, published in April. I have taken great care in assembling this receiver and adhered strictly to instructions contained in the article describing it with one exception, I put in three rheostats instead of two. I did this because I had the panel drilled for three, and having one off would show unightly holes. When connecting this receiver up and switching on valves I found that I could tune in all local stations on the speaker with excellent volume and clarity, the selectivity was good, especially on A2, but to my surprise it did not howl in any position on the dials, and the midgeit condenser seems absolutely useless, it can be twisted to any position, even when the station is tuned to maximum volume without the slightest difference being made. This seemed remarkable in view of the fact that your article says this condenser will have to be adjusted to eliminate howl. I attribute this lack of howl (if I might put it that way) to the fact that I cannot get a whisper from Interstate stations, not even on the "phones. Would the presence of the third rheostat have the effect of causing this condition? I have friends who have made up this set and are getting good Interstate results on the speaker, but find they have to control the howl, could you help me in this detail? I have tried reversing all coil connections without any difference in results. I am using radio valve Philips B400, detector A409, audio B406, 4½ volts C battery, 30 volts detector, 30 radio and audio. I am very pleased with this set. It

is the clearest I have heard, but I know better results can be obtained, I would naturally like to perfect it?

A: The presence of a third rheostat could not affect the selectivity in any shape or form. Your locality is a very good one for reception, and you should not experience any lack of selectivity in any way. I feel certain that were you to balance up your battery voltage, particularly the B and C battery voltage, you would find that the midgeit condenser referred to would play a most important part and the set would oscillate quite freely. Try other faulty volts on the radio and audio, and don't be afraid to increase your detector voltage much higher. As much as one volt may be required for grid bias purposes. Provided you have followed out the directions in the paper, provided you spend a little time in adjusting the voltages of your batteries, I am sure you will be amply repaid.

W. MAC BRITTON (BOW).—Q: I will be pleased to see if you will please supply me with the specifications necessary for constructing the two coils for the Universal Four Valve receiver of "Wireless Weekly" 23/9/27.

A: For Coil 1, the aerial coupling coil, there are required a primary and a secondary. The secondary consists of 66 turns of No. 30 gauge D.S.C. wire spaced 40 turns to the inch preferably, and wound on a two inch diameter former approx. 3 inches long. The primary of the aerial coil consists of from 15 to 25 turns of the same gauge wire wound on a former 1½ in. diameter. The former is fixed inside the secondary coil, the primary winding should be at the earth end

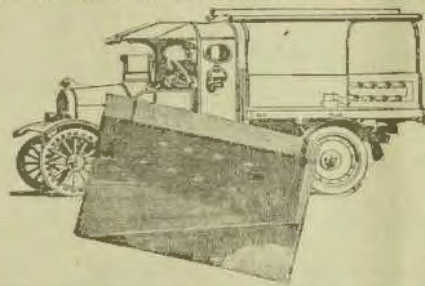
of the whole unit. The Helmsart coil wind as follows: On a two inch diameter former is wound 90 turns of 30 D.S.C. wire spaced as before. The primary winding consists of 20 turns of the same gauge wire wound on a 1½ inch former in such a way that when arranged within the secondary coil it comes exactly opposite the centre of the secondary winding. The reaction winding is wound below the primary and comprises 25 turns of the same gauge wire. All these windings are made in the manner specified, and the connections can be gauged from the circuit diagram published with the Universal Four Valve receiver. The primary and reaction windings need not be spaced wound. The cans should be made of either copper or aluminium, and should be at least 4½ inches in diameter. This allows a natural clearance of ½ inch all round the coil before the metal is reached. There should also be a ¼ inch clearance at both ends of the bottom of the windings. Many thanks for your complimentary remarks.

E.V.G. (SUNSET).—Q: Would you tell me if it is possible to wind an R.F. shaker?

A: Yes. A homebrew coil of from 150 to 300 turns will suit, but if desired 1000 turns of No. 30 gauge enamelled wire, wound on a former 1½ inches in diameter, will be found suitable.

A.C. (WAUCHOPE).—Q: Would you please forward me a blue print of a four-valve set?

A: I regret that we have not any blue prints. We don't cater for them, but recommend you to see "Wireless Weekly" 4/11/27, for the Marco Four. The details are simple to follow.



EIGHT "LOTUS" Valve Holders fitted with large power valves and fixed to tailboard of Ford Motor Lorry, driven over rough roads for 30 miles, survived the test.

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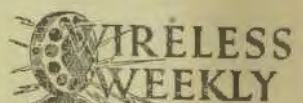
Fit the "LOTUS" to your set, and protect your valves.

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2/6 each.
Lotus Valve Holder,
with Grid Leak, 2/3
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Lotus Valve Holder,
with Terminal, 3/9
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