

WIRELESS WEEKLY

Broadcast Programmes a Week in Advance

VOLUME 11

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

NUMBER 4

Go Camping with a Radio this Summer



Friday, November 18, 1927.

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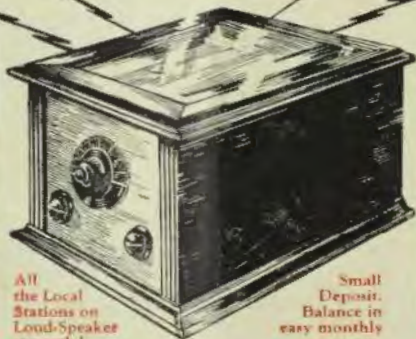
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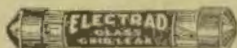
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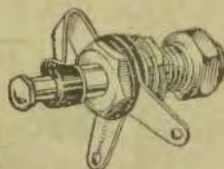
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**Gilfillan
Shielded
Neurodyne
Kit—
NA6**

The Kit consists of the following parts:—

- 1—Gilfillan four condenser gang assembly. (Indicator drum, worm gears and volume rheostat and "on" and "off" switch included)
 - 4—Aluminium mounting brackets.
 - 4—Low loss inductances, mounted in copper shielding cans.
 - 1—Antenna and ground post assembly.
 - 6—Bakelite base sockets.
 - 1—Bakelite base cushion type socket.
 - 1—2 megohm grid leak.
 - 1—7500 ohm filter resistor.
 - 1—4.7 filament equalizing resistor.
 - 2—Grid leak clips.
 - 1—Bakelite base assembly for filament and filter resistors.
 - 1—Battery cable with markers.
 - 1—Battery cable clamp.
 - 2—Bakelite control knobs.
 - 1—800Ω mfd. grid condenser.
 - 1—400Ω mfd. by-pass condenser.
 - 4—1 mfd. by-pass condensers.
 - 2—Audio transformers, 1:2 for 1st stage, 1:3 for 2nd stage.
 - 4—Neutralizing condensers.
 - 2—Output jacks, 1—single circuit and 1—double circuit.
- Assortment of screws, nuts and bolts.

This kit contains everything necessary to build a genuine 4-valve de luxe Neurodyne Set, and its design is in accord with the very latest radio engineering practices. With each kit a plan of assembly is furnished, together with full detailed drawings and specifications, wiring diagram and template.

Cash Price

£34

Easy Terms



Gilfillan Tuned Radio-Frequency Kit RA-6

This popular type of 4-Valve Receiver is notable for its selectivity and sensitivity.

A plan of assembly is furnished, together with full detailed drawings and specifications, wiring diagrams, and template.

The following parts are supplied:—

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 - 4—Aluminium mounting brackets.
 - 4—Low loss restricted field inductance coils.
 - 1—Antenna and ground post assembly.
 - 6—Bakelite base sockets.
 - 1—Bakelite base cushion type socket.
 - 1—2 megohm grid leak.
 - 1—7500 ohm filter resistor.
 - 1—4.7 filament equalizing resistor.
 - 2—Grid leak clips.
 - 1—Bakelite base assembly for filament and filter resistors.
 - 1—Variable high resistance for sensitivity control.
 - 1—Combination rheostat and on and off switch.
 - 1—Battery cable with markers.
 - 1—Battery cable clamp.
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 - 2—Output jacks, 1—single circuit and 1—double circuit.
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WIRELESS WEEKLY

VOY. II. No. 4.

FRIDAY, 15th NOVEMBER, 1927.

How Many are Necessary?

IN a recent issue we discussed the question of improving the service from the main city stations for country listeners. The alternative methods of increasing the power of the main station, and of establishing relay or re-broadcasting stations in selected country centres were considered. It was shown that the only satisfactory method was by the relay system.

A pertinent question then arises—how many relay stations are necessary? The answer must take note of some compromise between the alternative methods; because the main station may not be in the best position, and it may not radiate sufficient energy.

The location of broadcasting stations in relation to the residential population of the area to be served is a subject that has received a great deal of attention during the past year. The "interference range," as well as the "service range" of a station has been studied scientifically. It has been demonstrated that a station of a specified radiated energy will be capable of supplying service to listeners within a determined area. It has also been ascertained that the amount of energy output of a station has a definite relation to the extent of interference that can be caused to nearby listeners. The "blanketing effect" of very strong radiation from a nearby station precludes or at all events, renders very difficult any degree of selectivity in ordinary receivers.

Hence it has been established that the correct location of a station in relation to thickly settled areas is such that a safe minimum amount of energy is available to receivers in the area, and that no severe blanketing will be caused. On this principle we find stations being removed out of the

cities to suburbs where the density of population is small.

Let us assume that the main station—like 3LO Melbourne—is properly located. The next factor to consider in answering our main question is what area will a station of given aerial output energy supply. Some very valuable research on the problem of the station service area has been conducted in America recently, and it seems very surprising to read that the service area of a 5000 watt station (like 3LO Melbourne) is 60 miles or less.

To supply service to every listener removed from the metropolitan area on that basis would be very satisfactory to the listeners no doubt; but it would be beyond the financial power of any company to provide. We must liberalise the basis very considerably; it must be a compromise between what should be given and what the finances will stand.

Assuming now a much more generous, even if inefficient basis, the determination of the number of country stations will depend on several factors, one of the most important being the availability of wavelengths. There are not many very suitable wavelengths if proper consideration be given to the requirements of selectivity in operating receivers. Then the consideration of the maximum number of existing and prospective listeners within, say 100 miles, then suitability of the site for the "get-away" of the radiated energy; the availability of electric power supply, the cost of telephone lines and the cost of site and building—all these factors would be considered very carefully, and the net result would be probably about four stations in Victoria, and five in New South Wales, and no little disappointment expressed by listeners in the towns where the stations were not erected!

Catching Up with the Wireless World.

By R. E. CORDER.



BRITISH 'PHONE HEARD: Many people are enquiring as to the identity of 6SW, whose broadcasting on short waves is being heard so well in Australia just now. The station is situated at the Marconi Company's works at Chelmsford, England, and operates on 24 metres.

MR. A. MALING, 18 Bathurst St., Woollahra, advises us that he recently tuned in 6SW. This station was conducting a 24-hour test on 24 metres, and was heard from 11 p.m. to 1 a.m. on Sunday night, and Monday morning, 6th and 7th inst.

MR. MALING has heard the Dutch, Italian and Russian stations, but contends that this English short wave station is far superior in volume, and modulation. Every item was heard clearly. At 5 a.m. on Monday morning, the 7th inst., the announcer advised the receipt of a cable from Shanghai complimenting them on the wonderful transmission.

FOURTH EMPIRE BROADCAST: The B.B.C. has officially informed the Australian Press Association that 2FC's broadcasting was the most interesting in the world, partly because it was the most distant, and partly because it demonstrated the necessity of open-mindedness in wireless. The corporation instanced the original idea that the most efficient transmission was dependent on the maximum of darkness, both at the despatching and receiving stations, whereas the four Sydney experiments were invariably best at dawn in Australia and in the evening in Britain. The broadcast on Monday morning, 7th November, suffered disturbances from atmospherics and fading. "This comparative failure demonstrates the present fallibility of short-wave broadcasting over great distances. Nevertheless the B.B.C. is determined to continue the experiments with Australia, co-ordinating them with world-wide research," the corporation adds.

THIS WEEK'S BOOK: "The Splendid Control," by A. Vernier Dial.

IN BOND: None of us really know what radio enthusiasts we really are until our neighbours return all they have borrowed.

A SCIENTIST is reported to have stated that sleep can be abolished. We knew that months ago; the new loud speaker next door has seen to that.

NOVEMBER 5: Anniversary of first attempt to broadcast Parliament.

MR. SOQUACHAJAVORSKI, the famous Austrian inventor, recently arrived in London. (One can imagine the fervent prayers of the B.B.C. announcer that this would not be included in the News Bulletin.)

2UW IS HEARD IN AMERICA: A letter has just been received by 2UW from a Mr. William MacDonald, of Chiela Vista, California, U.S.A., stating that he has been receiving 2UW since September 13th last, and gives items heard by him, one being a talk on "Plant Life," by Mr. G. F. Manuel.

A YOUNG COUPLE who were married in a private house at Darlington last week received a great surprise when, just at the opportune moment, a radio set with loud speaker in the room burst forth into the strains of the "Wedding March." They were mystified because a radio set is not like a gramophone upon which can be played any record chosen for the purpose. Nothing comes through a radio receiver except what is transmitted from a sending station, so that obviously this broadcast had been arranged.

SUCH INDEED was the case. A friend of the family had informed broadcasting station 2FC of the time at which the wedding was to take place, and a precise moment had been agreed upon at which the organ of the broadcasting studio should peal forth the glad music. Everything went smoothly and a day or two after an enthusiastic wedding guest called at station 2FC to express appreciation of the way in which the broadcasting station had carried out its share of the surprise.

Both the Sydney broadcasting stations are always willing to broadcast the "Wedding March" on occasions like this provided they are requested to do so a day or two beforehand.

"Dressing and Addressing"

*Plays have delighted
Spectators for years,
Love well requited,
Hope, laughter and tears.*

*Patience and passion
And Honour and glory,
All that may fashion
The dramatist's story.*

*Singing and dancing,
Each gesture and sigh,
Ever entrancing
The ear and the eye.*

*Wireless, uniting
All this in the air,
List'ners delighting,
Their laurels must share.*

*Not to oppose them,
In conflict and spite,
Often it shows them
In weakness of light.*

*Actresses charming
All list'ners now hear,
Though 'twere alarming
To let them appear:*

*Eager and daring
Their talking they take up,
Though they are wearing
No more than their "make-up."*

*3LO tries it
With skill and precision
Can they devise it
To use television?*

Alternative Programmes

How the British Broadcasting Corporation is giving all listeners in, whether possessors of crystal sets or not, an alternative programme as told by the Chief Engineer of the B.B. Co.

By Capt. P. P. Eckersley

THE British Broadcasting Corporation is at present chiefly occupied in reforming the distribution of its programmes, and an attempt is being made to arrange distribution in such a way that every listener is assured of an alternative programme in a single set. It is true that alternatives exist to-day, but it takes a multivalve set to get another programme, and this programme is not necessarily contrasted.

We want to have it so that everybody, crystal set user and single valve user, gets an uninterrupted alternative. The best way of doing this is to send out two programmes from each of our centres, that is to say, use another wave length in London, Manchester, Daventry, Cardiff and elsewhere, but, unfortunately, there is so much broadcasting going on in Europe that if everyone went to the multi-wave length policy, there would be interference between stations and any scheme would defeat itself. There are as a matter of fact only 100 wave lengths available in Europe, and the nations have met together and have made a "gentlemen's agreement" to use only the number of wave lengths they have been, by agreement, allotted.

Thus the number of wave lengths available in Britain is 19, in France 18, and so on. This allocation has been agreed upon by all the nations concerned, and the problem we have to face is to give alternative programmes to every listener in the British Isles with 10 wave lengths.

The best way to give an alternative is to radiate out the alternative from the same point, because this means that the strength of the programmes is, theoretically speaking, always equal, anywhere in the service area of the station.

This means that with 10 wave lengths and alternative programmes there will be only 5 centres of distribution. If we have got to give with only 5 centres of distribution, the same service as we give to-day with 21 centres, it must be obvious that the power of these stations has got to be increased, and thus our Regional Scheme is based upon 5 twin wave length stations of 30 to 50 kilowatts power.

We have not yet got full permission to go ahead, but we are starting with an experimental, and our first twin wave length high powered station is to be located at Daventry, where the addition of a high powered 30 kilowatt medium wave station to the existing long wave high power station reproduces to some extent the conditions of a regional high powered broadcasting station.

We start this service in October by contrasting programmes with 5XX, and we genuinely hope that the experiment will be a success. Of course, it will mean shutting down a great many transmitters, and in experiment 5IT, the Birmingham transmitter, is to be shut down, although the studio remains to be linked up on frequent occasions with the local Daventry regional high powered broadcasting station. I hope that if this experiment is a success at least two of the new regional stations will be built during the coming year.

With regard to other problems, we have vastly improved our S.B. (Simultaneous Broadcast), or linking together by land line of centres, and we are even extending this to the Continent. Yesterday we did some quite successful linking of the Kursaal at Ostend. In this way, European programmes will become exchangeable.

We are working, not only at linking up by land line of nearby countries, but also the Colonies and Dominions by short wave linking. My attitude towards this question is however one of some caution, and I do not think we ought to rush in without an assurance of some kind of service. More particularly I think that the problem is not one of giving isolated people all over the world an opportunity of radio fishing, but rather actually linking up one broadcasting system with another and relaying programmes to the listener, rather than the multi-valve enthusiast.

I think we are getting on quite a good deal with Studio acoustics. Our idea now is to give a special echo room associated with the Studio by means of which we can put in just the amount of reverberation that is required.

Thus there are two microphones in every studio. One going through its associated amplifier to the transmitter, the other microphone going on a loud speaker to the echo room. In the echo room there is another microphone fronting the loud speaker, this microphone is also got through to the transmitter, but with an arrangement whereby just as much of the echo can be superimposed upon the direct transmission, so that a twist of the engineer's wrist converts a musical rendering from dead to lively. So men talking can be made to sound as if they walked from a room into a cathedral. We find this extremely useful.

We have already abandoned the idea of draping studios with material hung next the walls, and instead find it much cleaner and better to cover the walls with felt, then cover the felt with strong wallpaper. To prevent it from showing up high frequency echo, we use plasters, pictures and things. This is a clean arrangement and one which is extremely efficient acoustically.

Our control room technique is changing very rapidly, and to give you the general policy we are going more and more towards Post Office practice; that is to say, our new S.B. Board with its 50 or 60 automatic relays, with its single lines and its Post Office desk shape, is typical of the sort of development we are making in this respect.

I hope this gives some rough idea of what we are doing, and will be of interest to those in Australia who are concerned with broadcasting and its future situation in the Commonwealth. One particular point I would like to make; I think we have made and are making some progress, but I assure the reader that this progress could not have been made had it not been for the united control under which broadcasting has been conducted here. Broadcasting is a national and not a provincial problem, and technical improvements can only be made in a national sense, with the backing of a considerable revenue and by people who are in an assured position, and who feel it well worth while to work not only on immediate problems, but also to look to the future of the service.



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.

WHAT STATION?

Dear Sir,—I would be pleased if any of your readers of "Wireless Weekly" could advise me, or if they have heard a station transmitting on a wavelength of approximately 430 metres, between 2YA and 2FC?

I have heard this station twice now on Sunday mornings about 5 o'clock. One morning a talk was given, but static prevented me from hearing his call sign. The signals faded away as the sun rose.

Yours, etc.,

I. K. MacKINNON.

Purlawugh.

WAKE UP, N.S.W.

Dear Sir,—I think that it is high time that our A class stations set up and took notice. During the day the programme of our A class stations, unlike 3LO, which have jazz music all day beginning at 11 a.m., is very dry.

This applies to 2FC and 2BL, as they are the only A class stations in N.S.W., especially 2FC, which have almost the same singers and songs every day. But as far as the night programme is concerned 2FC is equal to any station in Australasia, including 3LO.

But as far as day programme is concerned, well, wake-up, 2FC, and place yourself ahead of the other States.

G. BROWN.

Lakemba.

LOOKING FOR SOMEONE.

Dear Sir,—Could you inform me what is the best way of finding out the person who has a wireless set around about the Hamilton District and not very far from me, who has, and is still annoying us for this last 3 months. It is something cruel to listen to. I think he is trying to tune in a mangle and wants some oil. I have been to several people and they are all complaining.

Trusting that you can give me some advice on the matter.

Yours, etc.,

G. W. SMITH.

Hamilton.

HEARD IT?

Dear Sir,—At about 8 a.m. to-day, I picked up a station broadcasting on a wavelength of what I estimated to be 195 metres. It was very faint, and I lost it before I could get the call signal. The item was a band number. I would be glad to know what station this would most likely be, if you would be so kind as to tell me.

Yours, etc.,

R. J. H. MASSIE.

Edgelliff.

EXTRAORDINARY AGAIN.

Dear Sir,—Yesterday I built the "Extraordinary One Valve Receiver" as described in "Wireless Weekly" some time ago. In my opinion it is the most wonderful one valve receiver that can be built. When an earth is connected to my set it refuses to work, so I just use an aerial and nothing on the earth terminal. So far I have logged the following stations:—

N.S.W.: 2BL, 2FC, 2GB, 2KY, 2UW, 2UE, and one or two trawlers.
VIC.: 2LO and 3AR.
S.A.: 5CL.
Q.LAND: 4QG.
TAS.: 7ZL.
N.Z.: 1YA and 2YA.

Also I find that this one valve receiver works without any B battery, so it is very economical. Wishing success to "Wireless Weekly" and "Radio."

Yours, etc.,

A. NICHOLSON.

Hunter's Hill.

A La Russe.

From Ural, a town in Soviet Russia, this little note has reached us:—

"Gentlemen, I should be thankful to you for sending me a trial number of your honorable Journal to order it in future."

Incidentally, our Russian friend's letter was simply addressed "Wireless Weekly, Australia," but there is, of course, no difficulty in locating a journal so honorable and well known.

DANCE TIME.

Dear Sir,—Turning to the "Safety Valve" in this week's "Wireless Weekly" I read "Disappointed," by E. F. Taylor, on 2BL's dance night. Looking through the various back numbers for a short wave set, I found what I wanted in the issue of the 8th July, and on the "Safety Valve" page I again read of "Dance Night," by A. S. Woods. One complains of a wrestling match, and the other of a fight, when the programme calls for a dance.

When 2BL was located in Fullers Building, I called on Uncle Jack and tried to show him that from my observation Saturday night is party night. No matter where you go, Saturday night is always dance night and although he admitted it, we appear to get less dance music now on Saturday night than before. Some months ago, I picked a Saturday night for a house warming and needless to say, no one was interested in the wireless because a "fight" was on. While the present programmes continue, I have, for sale at a cheap price, a good 3 valve set.

Yours, etc.,

R. ROBERTS.

Bankstown.

ONE VALVE.

Dear Sir,—Having constructed the Extraordinary One Valve set as published in "Wireless Weekly" on Friday, July 1st, 1927, and tested the set, I find that I receive the following stations at good earphone strength:—5CL Adelaide, 4QG Brisbane, 3LO Melbourne, 2BL Sydney. 2FC Sydney comes in at nice earphone strength at about 3.30 p.m., and is also good at night. I live about 255 miles from Sydney, and I am sure that anybody with a multi-valve set should be able to pick up station 2FC in their day time transmissions.

I would recommend this set to anyone wanting a small set with a big performance at a cost of £1/10/6. It is more suitable to the beginner than an expensive crystal set.

Yours, etc.,

G. E. SHARMAN.

Jugiong, N.S.W.

3LO Applies for Broadcast Chain over Four States

ONE of the most significant items of wireless news since 3LO, Melbourne, got its licence is the announcement that the Broadcasting Company of Australia is applying for licences in South Australia, West Australia and Tasmania.

It is intended to operate these stations, if the licences are granted, on the same lines and just as efficiently as 3LO, Melbourne. It is undoubtedly to the advantage of these States to have stations installed and operated by skilled and successful operators with such experience behind them as have those of 3LO, Melbourne.

The applications of licences, when one comes to consider the matter, are a logical development of the recommendation of the Wireless Commission that 3LO and 2FC should assist the weaker States with portion of their revenue. It is obvious that to take, say, £10,000 out of the coffers of a successful company like 3LO, Melbourne, and hand it, without conditions or guarantees, to a weak and inexperienced station in another State, would be neither wise nor expedient. To assist in organizing a station equal to the task of making wireless popular is praiseworthy, but the grant of money is only one factor in success. 3LO, Melbourne, has come to the conclusion that it is infinitely better both for itself and the States in question, for it to assume the responsibility of administering its own funds, if it is to be charged with the duty of aiding the weaker brother. Two birds will then be killed with the one stone. The other States will get the help they want, but 3LO, Melbourne, will not lose by granting it.

3LO MELBOURNE EXPANDS. Important Wireless Development.

Applications by 3LO Melbourne for broadcasting licences for South Australia, West Australia and Tasmania have been lodged with the Post Master General's Department. This is one of the most important wireless developments since the inception of broadcasting in Australia, and if the applications are granted, 3LO Melbourne will establish a chain of stations throughout the states mentioned, each of which will provide a broadcasting service of equal efficiency to that of 3LO Melbourne.

Relay Stations

IT is the aim of 3LO, Melbourne, to give a satisfactory broadcasting service throughout Victoria.

It is licensed as a 5000 watt station with a wavelength of 371 metres. With this power and wavelength it is impossible to give the desired service outside of the metropolitan area both in signal intensity and free of fading and distortion.

Signal Intensity.

Standards of satisfactory signal intensity have been stated by the experts of both the British Broadcasting Company and of the Radio Corporation of America. The statements of these experts are as follows:—Mr. Eckerley, of the British Broadcasting Co., states in the "Wireless World" of 13th July, 1927:—

Field Intensity Millivolt metre.	Class	Description.	Radius of zone from centre of 3LO London.
Above 50	Wipe out	The reception of other stations is difficult, but is perfectly possible.	6 miles
10 to 20	A	An uninterrupted service is practically certain.	12 to 14 miles
5 to 10	B	Crystal reception possible, more subject to interference.	18 to 20 miles
2.5 to 5	C	Service subject to interference by atmospheric electric power plant, etc.	24 to 32 miles

The figures below apply to other British Stations, e.g., Manchester, Bournemouth, Belfast, etc.

The record of measurements of 3LO's field strength indicates it has a somewhat higher intensity than that given in the last column of the table below.

Mr. Goldsmith, of the Radio Corporation of America, says: "1 millivolt/metre signal is unreliable and poor in summer, and signals below 10 millivolt-metre are fair to good but poor at times."

It may be taken that a signal strength of less than 2.5 millivolt/metre, or the signals at a distance of over 30 to 40 miles from 3LO, Melbourne, are unreliable at times, being subject to atmospheric disturbances in summer, and in country towns to power plant and other disturbances. So long as the power of 3LO, Melbourne, is 5000 watts, it cannot give a continuously reliable service, or a service which can be received on a crystal set with a normal aerial at distances greater than 30 or 40 miles.

Fading.

The distances at which night fading and distortion become serious defects in the service of a broadcasting station have not been laid down with authority. The distance is known to depend on factors which vary in different parts of the world, and it is known to be greater for long than short waves. Observations show that signals are subject to some fading and distortion at about 65 miles. It is to be expected from the evidence available that at night, all stations will be subject to fading and distortion. This fading will begin at about 60 or 70 miles from Melbourne. While the wavelength of 3LO, Melbourne, has advantages in the metropolitan area

THE 3LO TRIP TO TASMANIA.

That delightful form of mania now being advertised as Tas-Mania is being sedulously fostered by 3LO, Melbourne's goodwill, and the latest is that to enable the winners of the T. to T. Competition to spend Xmas at home, the date of the Free Trip has been put forward to December 27th, and the return home to January 11th. Would - be successful competitors, please note!

it will be more subject to night fading than a longer wave. To sum up, listeners situated at distances from Melbourne are being given a broadcasting service which is subject to the following defects:—

- (1) Its low signal intensity makes reception on a crystal set difficult at distances over 40 miles or impossible and makes expensive multi-valve sets essential.
- (2) Interference by atmospherics in summer will be frequent and interference caused by power plants, etc., will often occur.
- (3) Night fading and distortion will seriously mar reception at night at distances over 70 miles.

In the country broadcasting is much less a luxury and much more an essential service than in the metropolis, yet the service which is being given can only be received on expensive sets. In view of these facts 3LO, Melbourne, proposed over a year ago to rectify the defects in its service by establishing a system of relay stations. These proposals were fully explained to the Royal Commission on Wireless, and it has reported on the desirability of licences being granted for relay stations.

In the Commission's "Summary of Recommendations" No. (5) reads: "That the Australian Wireless Committee should deal with applications for licences for relay stations on their merits, and the Commission does not recommend any obstruction being placed in the way of such proposals, and land lines should be made available at the lowest possible rental."

The Commission came to the conclusion, after hearing much evidence: "that these broadcasting stations that wish to establish relay stations should not be discouraged in their efforts."

The appointment of the Royal Commission on Wireless delayed the consideration of the applications of 3LO, Melbourne, for relay station licences by nearly a year, and broadcasting in Australia in consequence is falling seriously behind that in Europe and America by the delay which is also seriously affecting the reputation of 3LO, Melbourne, for rendering an efficient and up-to-date broadcasting service. The reasons given by the Postmaster General's Department for not granting licences for Relay Stations "that a survey of suitable sites should be first made and the absence of suitable land lines" are not sufficient reasons for refusing the application.

If the Postmaster General's Department proposes to delay issuing a licence until an investigation of field

intensities and fading throughout Victoria has been made, then an urgent development in broadcasting will be held up for possibly a year or more longer. When such information has been obtained the location of the Relay Stations cannot be primarily determined by it. In locating sites for Relay Stations the practice of the British Broadcasting Company in placing them so that they serve the more densely populated regions should be followed. Economic considerations are the dominant ones in the location of relay stations. The following appear to be the factors determining the location of stations:—

- (1) A minimum number of stations consistent with reasonable signal intensity and freedom from fading.
- (2) Location of stations to serve the more densely populated regions.
- (3) Location of a station near an electric power supply if possible.
- (4) Location near a telephone line.
- (5) Location so that the operating staff is not isolated and the means of communication are good.

All these considerations were carefully taken into account in the locations proposed by 3LO, Melbourne, nearly 12 months ago.

It will take some time to complete a contract for the erection of a relay station, and it should be possible for the Postmaster General's Department to have the necessary telephone line completed by the time the station is erected.

The Directors of 3LO, Melbourne, are rather disturbed at not being allowed to complete their plans for giving Victoria a service which would be equal to the best services in other parts of the world, and listeners throughout Victoria are becoming very impatient in consequence of the unreasonable delay.

BANJOIST AND COMEDIAN: The man responsible for many of the comedy effects produced by Joe Aronson's Synco-Symphonists at 3LO Melbourne, is the inimitable Ned Tyrrell, who is such a handy man of many parts that one is not surprised at what he does next. He even astonishes Joe Aronson at times, and it is not an uncommon sight to see that popular conductor with a look of expectant anxiety on his face when Ned Tyrrell goes on the air—but Ned is always safe to carry on unrehearsed patter in such a way that the Syncopated Symphonies are not upset and thrown out of their beat.

Items of Interest from 2UW.

2UW has lately made vast strides towards entertaining, pleasing and maintaining an efficient service to the listening public. The future policy of 2UW will be to offer something of a different nature to the general character of the average programme now being put over the air. One step towards the fulfilment of this policy is the extension of their sessions from four to five, this last being from 12.15 p.m. to 12.45 p.m., instituted to give to factory and store hands, where wireless sets have been installed, a luncheon session.

The special features of existing programmes consist of the wide selection of items, vocal, instrumental, elocutional and its speakers. Some of the vocalists are well known in Sydney's musical circles, being Madame Hickie-Bauer, operatic soprano; Madame Lillian May, soprano; Madame Evans and Mr. Boswell Robinson, not to mention numerous others. Chief amongst 2UW's instrumentalists stands Professor C. Sauer and Madame Sauer. Professor C. Sauer is a prominent authority in the teaching world. Professor C. Sauer received his musical education exclusively in Europe, receiving his first instruction at the age of six, and is now master of the organ, piano, violin, and cello. Amongst his teachers, Professor Sauer names Reinecke, Israel, Rubinstein, Lion and Garcia, special interpretation of classics being given by Wilkalmj, one of the world's greatest violin virtuosos. Professor C. Sauer has given great assistance, not only in musical works, but by hard labour, to 2UW, and greatly assists the Studio Manager, by supervising all musical artists. Madame Arline Sauer is also a most talented pianist, and is official accompanist to 2UW.

Amongst its speakers, 2UW proudly boasts Mr. Bagnell, Director of the Australian-Made Preference League, who can be heard any Thursday evening at 7.30, speaking on the Significance of preference to Australian-Made Goods. Mr. E. E. Salmon, Managing Director of Road Signs Ltd., and a speaker of some note, has been delighting his listeners with various talks from 2UW on "Commercial Art," "Life Saving," "The Riddle of Industry," and "The Future of the New Legislature." He is shortly to give a further series of talks upon "Commercial Art."

For lectures of a classical nature, one should tune into 2UW every Tuesday evening, when Mr. George F. Manuel gives a short biographical sketch of the lives of the various composers, together with vocal and instrumental items from the operas.

It's All in the Air

"PRINCESS CAPRICE": That very live body, the Misman Musical Society, will produce "Princess Caprice" at Misman Town Hall on Saturday, 19th November, by arrangement with J. C. Williamson, Limited. The 1st Act will be broadcast by 2FC, and on Monday, 21st November, Acts 2 and 3 will be put on the air.

CONDUCTOR AND COMPOSER: It may safely be said that no musician has done more to elevate band music to the position it now occupies in Australia than Percy Code, the well-known conductor and composer who is now with Joe Aronson's Synco-Symphonists at 3LO, Melbourne. Ever on the look out for the best musicians procurable, Mr. Aronson gladly availed himself of Mr. Code's services when a fortunate opportunity arose some months ago, and he is now regarded as indispensable at 3LO, Melbourne.

Mr. Gladstone Bell, cellist and member of the Sydney Instrumental Trio, appearing regularly at 2FC

A.J.C. MEETING: 2FC's popular racing commissioner, M. A. Ferry, will describe the A.J.C. meeting at Randwick on Saturday afternoon, 19th November, in running.

MISS ADA BROOK: Have you heard her play? Then you have missed a treat. Listen in to Theosophical Station. She will play on the 18th November piano solos: "Prelude" (Bach), "Gardens in the Rain" (Debussy). She is a favourite with listeners.

M. FAKOLA, a novelty pianist who has many attractions to offer, will present a bright little act at 2FC Studio on Thursday night, 17th November. LINN SMITH is back in town, too, and has booked up with 2FC during his short stay here.

Coming Features in the Broadcasting Programs

THEOSOPHICAL STATION presents Mr. F. J. Todd, who has greatly assisted in the work of the station. It is with much pleasure that listeners tune into his vocal work. On 21st November the Rev. E. B. S. Hammond will give a short address of exceptional interest to men.

SUNDAY, 20th NOVEMBER, at 10.30 am, Morning Service from St. Alban's, Redfern. Lectures from Adyar Hall at 7 p.m. A special programme by Mr. Clement Hosking's pupils at 8 p.m. from Studio. Mr. Hosking, who is well known in Sydney, has received many requests for repetition of his own vocal work and that of his students.

"WIZARD AT THE PIANO": Les Richmond, who is known as Joe Aronson's "Wizard at the Piano," has achieved considerable fame throughout Australia and the East, where he has toured extensively with Joe Aronson's Synco-Symphonists. Mr. Richmond is well known to wireless listeners for his remarkable piano-forte solos with orchestral effects at 3LO, Melbourne.

JOE ARONSON'S DRUMMER: A most important man in Joe Aronson's Synco-Symphonists is Charlie Aronson. Although only in his teens Charlie is recognized as the foremost drummer and producer of syncopating effects in Australia. He is an expert xylophonist and cymbalist, and his performances at 3LO, Melbourne, always delight listeners.

CLEVER YOUNG INSTRUMENTALISTS: The Leoni Quartet, members of the old Leoni family of noted musicians, are now appearing at 2FC Studio. The oldest member of the quartet is not more than fifteen, and their career to date certainly augurs well for future progress. Listeners will have an opportunity of hearing them on Sunday evening, 20th November.

SOUSAPHONIST: One of the silent men in Joe Aronson's Synco-Symphonists at 3LO, Melbourne, is Andrew Robertson—a Scotchman—but, typical of his race, when he does make a noise, it is indeed "some noise"—not on the bagpipes but the Sousaphone—that big instrument which booms out the deep bass notes with such beautiful mellowness so noticeable in the syncopations of Joe Aronson's Symphonists.

CHARLIE LAWRENCE is going away for a holiday in December, but 2FC listeners will be glad to know his broadcasting activities will not be curtailed, prior to his departure. In fact, he is going to make up for his absence, during the next two or three weeks.

MONTGOMERY STUART is arranging for broadcasting several of Con Drew's clever sporting yarns. Certainly when Con wrote them, he did not take into consideration broadcasting rights. His books have been read by hundreds, but to-day thousands of listeners have the opportunity of laughing over his drolleries. "A Gamble in Hats" and "The Cockney and the Prince" were given from 2FC Studio on Melbourne Cup night, and the second of the series will be programmed for Tuesday, 22nd November.

"STUDIUM AND STADIO": It is not often that Alf Andrew, the well-known announcer at 3LO, Melbourne, gets tongue-tied, but recently during an evening's programme he had to announce some Welsh numbers with titles impossible of pronunciation excepting by a Welshman. Anyhow he made a brave attempt, but his tongue refused to function in crude English afterwards with the result that when he announced the change over to the wrestling he said, "The studium time is so and so and we are now changing over to the Studio."

"YE IDLERS" MINSTREL TROUPE: Responding to the request of over 700 listeners who wrote to the station, and doubtless pleasing twice 700 listeners who are numbered among those who never write, "Ye Idlers" Minstrel Troupe, under the able guidance of H. Marshall, Chief of "The Four Waifs," will give a repeat programme at 2FC Studio on Saturday night, 19th November. The same band will contribute us on the previous occasion, but, of course, there will be plenty of fresh laughter-provoking material.

MR. HEATH BURDOCK, who is constantly heard over the air from Station 2GB, in recitals and sketches, hails from the old country. He was educated at an English public school, and Cambridge University. Since his arrival in this country in 1913 he has been associated with various theatrical managements, including J. C. Williamson, Hugh J. Ward and Oscar Asche. At the termination of those engagements, Mr. Burdock joined the well-known Allan Wilkie Shakespearean Company, and toured the Commonwealth for a number of years, playing important roles in no less than twenty-five of Shakespeare's masterpieces.

Rare Bird at 3LO Melbourne.

3LO Melbourne is a sort of Bureau for all kinds of enquiries and some very extraordinary requests are received from time to time. Recently a neat packet arrived by mail, and upon being opened, it was found to contain a dead sea bird of some rare species hitherto unseen on our Coast. It was sent to 3LO Melbourne for identification, and a place has been found for it in The National Museum.

NEW RACING EXPERT.

Listeners who regret the cessation of "Muskett's" racing descriptions, will be glad to know that "Newbury" of "The Argus" has taken on the job. Mr. Priestley ("Muskett" of the "Sporting Globe") has been translated to a seat on the racing bench, one of the High Court of Flemington, and he can hardly judge and describe races at the same time. "Newbury," however, is filling his place with distinction.

"NOW IF I WERE KUROPAT-KIN.....":

It is usually the narrowness of the viewpoint of the individual which prompts him to destructive criticism. There is always the "....." if I were Kuropatkin strain in all of us. Now, Flotsam has very decided opinions of his own, and so has Jetsam. So on Thursday night, 17th November, they have decided to meet in 2FC Studios, and over the mellowing influence of a good cigar, they will debate current topics of the day. "Mike" is referee, to see they don't come to blows.

"PERFUMES AND THEIR ORIGIN":

Mr. W. F. Jones will speak on this unusual and intriguing subject from 2FC Studio, on the evening of 16th November. "To find the origin of the use of perfumes, one has to go back to the very dawn of civilization," says Mr. Jones. "Their use seems to have first been reserved for religious ritual, either because it was thought their odour was pleasing to the gods, or because a certain number of these perfumes (the earliest known perhaps), being found in nature, were used to embalm and preserve the bodies of the dead. The very word perfume seems to indicate that odiferous substances were burned before the altar of the gods (per fumum), probably on the heart that burned perpetually in the temples. In any case, the use of incense is found in Vedic liturgy, in the religious laws of Zoroaster, as well as in the Hebrew ritual, and particularly the religious ceremonies of Egypt, which seems to have played, in the use of perfumes, a large part." The talk which Mr. Jones has prepared covers a wide field, and should prove of considerable interest.

NOW THAT the bowling season is once again with us, and hundreds of devotees of the game are following the climate sphere, the series of talks on Bowls, given by Mr. E. M. Pascoe from Studio 3LO, Melbourne, are arousing wide interest. There is no one in Australasia more qualified to give instruction in the Royal and Ancient Game than Mr. Pascoe—for by holding the proud title of Champion of Champions five years in succession, he has established a world's record. For many years Mr. Pascoe has been collecting data for these talks, and during his search through ancient manuscripts dealing with the game, he discovered that it is the earliest sport on record—and was coupled with archery. It is interesting to note that the first bowling green at Plymouth Hoe—whereon Sir Francis Drake was playing when the news of the advance of the Spanish Armada was brought to him—is still in use at the present day, and the turf, although trodden by thousands of feet down through the centuries, is still as "spry" as ever.

A STUDY IN "JACKS":

The Christening Fairy must have been having a gay time with the good old-fashioned knuckle bones, when the arbiters of 2FC's mechanical fate were named. On Monday night last, no less than five engineers boasting that Christian name were on duty—one at Pennant Hills, two at the Haymarket Theatre, one at Warringah Hall, and one at Baptist Hall.

"JACKY" helped to make history and also caused some fun on the occasion of the Third Empire Broadcast at 2FC Studio on Monday morning, 31st October. He lifted up his old brown head and sent his ringing laugh over 13,000 miles of ether, to natives of his dear homeland in England, and their hearts thrilled and ached at the magic of his call. When the "Coo-ee" was given who can tell what primeval instinct awakened in his breast? Probably he had never heard the national call of Australia, but the blood of a long line of feathered ancestry quickened to that call, as old as Australia, and he laughed again and again, just as his forefathers did, back in the days when Sydney town boasted no broadcasting stations, and kookaburras responded scornfully to the penetrating "Coo-ee" of marauding blacks.

But Jacky very nicely disgraced himself before the broadcast was over. Miss Gwen Selva was announced, and as her golden notes went out on the air, the announcer heard an irrepressible chuckle behind him. His face became thunderous, and he swung round with a half-formed "S-s-s-h," when he discovered the culprit. Jacky cocked a contemplative eye at him, opened his beak again, then thought better of it, and buried himself in a puff of brown feathers.

LAMPE'S GLASSES: Mr. H. E. F. Lampe, who is well known for his broadcast talks from 3LO, Melbourne, on "Diamonds" and "Timepieces," has a reputation among his friends—particularly on the bowling greens—of neglecting or forgetting his glasses. His predicament was great the other evening when he arrived at Studio 3LO, Melbourne, to read a paper for broadcasting, and discovered that he had left his glasses at home. Fortunately the announcer, Mr. Andrews, had his "specs" with him, which Mr. Lampe borrowed, and to explain the delay in getting them fixed Mr. Andrews apologised and said that "Mr. Lampe had forgotten his glasses." "How like Lampe," was the natural remark made by his wide circle of listening friends, who affectionately know of his little weakness.

Studio Draperies at 3LO, Melbourne

3 LO, Melbourne, is unique among the broadcasting studios of Australia, and almost so among those of the world, in that it affords to numbers of its broadcast audience the opportunity to "look in" as well as listen-in. Its larger studio will accommodate comfortably quite two hundred visitors, who are thus enabled to look on at performers in the very article of facing the microphone, and in their very habits as they live.

Cutting Out Unwanted Vibration.

A great deal of scientific study has been made of late years in the question of resonance in occupied rooms. Besides the effect of the audience, above referred to, there is also the big problem of furnishing, carpets, and wall coverings. Everyone knows that the old-fashioned idea of using the drawing room piano as a pedestal for vases, books and the general collection of modern ornaments is not over-conducive to good music, as they have a way of vibrating for themselves, sometimes in an audible and distressing manner. In a broadcasting studio, with a sensitive microphone and amplifier attached, the engineers have to be meticulously careful even about pictures on the walls, nay even of the very stuff the walls are made of and its windows and general drapery.

The Audience as a Damper.

Besides adding interest, however, to the audience, this procedure has a scientific sanction. Those who occupy the comfortable cushioned wicker settees become themselves part of the broadcasting mechanism, and take their share in the actual performance. That is to say, being in a studio designed to give the best effect of resonance to the sound waves picked up by the microphone on the elevated platform at one end, the audience is also of use as a resonance regulator. A "full house" at Studio No. 1 Melbourne Place, produces definite technical effects, and the management are always sorry if the audience dwindles, particularly when singing or delicate instrumental effects are being broadcast. It is not only rude to leave the room during the performance of a number, but it is actually injurious, if only in a minor degree to the excellence of the broadcasting.

Drapery and Color Effects.

At 3LO, Melbourne, this has been the matter of many prolonged experiments, and at present the "business end," so to speak, of the big Studio is swathed in an ornate draping of heavy black material relieved to the eye by brilliantly colored "jazz" designs that remind one somewhat of pictures of the auto-da-fé or other medieval spectacles! Over the central doorway is an effective and colorful portrayal of a parti-colored clown in red, blue and gold, and other decorations depict hunting incidents in a more or less symbolic manner.

The object of this drapery and its designs heavily loaded with color is to deaden the disturbing resonances produced by the unadorned smooth walls adjacent to the performers and the microphone, and the efficiency of the arrangement is being closely studied by observers with whom 3LO, Melbourne, is in touch.

Controlling Band Acoustics.

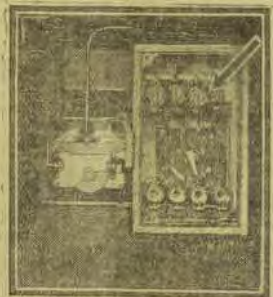
With the same end in view, carpets of a heavy pile are laid on the platform of the larger studio and cover the floor of the smaller studio at its rear, whence band performances are usually broadcast. This smaller studio has also been draped, and is under study in the same exhaustive manner.

IN THE FUTURE.

Wonders will never cease, they say,
And as to wireless wonders,
Why, wireless even joins to-day
Far lands that ocean sunders;
Nay, sense prophetic has it got
By which to-night we borrow
News from Australia of what
Has happened there to-morrow!

TO THOSE LISTENERS with a studious turn of mind will appeal the latest competition about to be launched by Studio 3LO, Melbourne, for it will consist of the broadcasting of a number of well-known quotations culled from some of our finest English poets. These will be read by skilled elocutionists over the air, and the listener, who, over a series of readings, succeeds in "placing" the greatest number of quotations correctly, will be awarded a valuable prize. Among other things, this competition will serve to show how many oft used phrases have originally sprung from the pen of a distinguished poet. For instance, how many listeners are aware that some of our most repeated phrases—sentences that are on the lips of everyone several times a day—came from the pen of the great Keats!

WHEN IT COMES to being a candidate in a novel competition that is "in the offing" at Studio 3LO, Melbourne, the old-fashioned girl will indeed have the best of it, and stand a better chance of carrying off a valuable prize than her up-to-date sister. This is the explanation of it all. Convinced that somewhere in Victoria there are beautiful heads of hair that have not yet made the acquaintance of the tonsorial artist, a competition is being arranged to persuade the owners of these luxuriant tresses to permit them to be photographed and classified, when a prize will be awarded for the most beautiful "crown of glory." The fortunate prize winner will then rejoice with Haydn, that she listened to her mother's counsel to "bind her hair" and did not join in the general stampede to the nearest shingling parlour.



The Crystals which control the broadcasting of the National Broadcasting Company's principal station in New York. Arrow points to crystals which maintain a stabilized frequency of 610 kilocycles. There are three Crystals shown, although one is used at a time, the other two being held for emergency.

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The Emmo, 5 or 3½ to 1	17	0
Forno, 3½ to 1	16	0
Jefferson, Type 41	15	0
Karas Harmonik	34	9
Bizby, 3½ to 1	11	9
Patent Super Audio	45	0
Resistance Coupling Kits	24	0
Gridleak Holders	1	0
1 Megohm Gridleaks	1	0
Econotron High Mu. Valves	11	3

This Week's Three Valve Set

1 Polished Hard Rubber Panel, 18 x 7 x 3-16	6	6	2 Cardboard Formers, 3in. diam., 6in. long	1	0
2 New Certified Straight Line Condensers, 0005	19	6	1 Wetless Mica Condenser, plain, 00025	1	6
1 Advance Straight Condenser, 00025	9	6	1 Wetless Mica Condenser, plain, 001	1	6
3 Standard 201A Sockets, with black base, 1/8	4	6	1 Crescent Audio Transformer, 6 to 1	13	6
2 Super 30 ohm. Rheostats, 2/6	5	0	1 Standard Terminal Board	2	9
1 Brachstat, to Suit Valves	4	9	3 4in. Black Engraved Dials, 2/3	4	6
1 lb. 22 D.C.C. Wire	2	5	2 Radiokes R.F. Chokes, 8/6	17	0
			1 Doz. Square Buswire	0	10

TOTAL, £4/14/9

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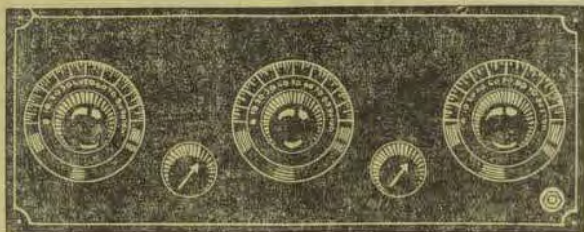
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The Three Valve Filadyne.

A variation of the circuit published last week plus a stage of audio and a stage of radio frequency amplification.

THE Filadyne one valve receiver described in last week's issue of "Wireless Weekly" functioned so remarkably well that the writer is tempted to try further variations. Even with the one valve the volume was so good that it seemed unnecessary to add a further stage of audio, but just to satisfy inherent curiosity, a stage of audio was added, and the result exceeded all expectations. Not only was the volume of the local stations increased enormously, but inter-State stations could be heard very satisfactorily. The potentiometer system of reaction control proved extremely interesting, but did not altogether seem absolutely necessary. Therefore, the circuit was varied different ways and results noted.

While the audio frequency stage proved of immense value in inter-State reception, the thought naturally occurred in the writer's mind that some form of radio frequency would be of decided advantage. Now just what form this radio frequency stage should take was one that required considerable thought. The addition of radio frequency amplification in the average receiver frequently involves several complications which result invariably in a doubtful advantage. To say the least, another control is usually necessary, and this other control as a rule is so difficult to handle that it is questionable whether it is worth while adding it. Then again, the space factor enters into consideration. The manner in which the average radio frequency stage interferes with the other stages is too well known to discuss at length here. To overcome this it has always proved necessary and advisable to

separate this additional stage from the existing stages in such a way that magnetic coupling for interaction does not take place. It has been proved essential to place the coils at different angles to one another to lessen this difficulty in the average receiver, and when it comes to the question of a peculiar receiver, such as the Filadyne, greater consideration must be given to this subject.

Looking at the circuit diagram in last week's paper, it will be seen that only the anode or plate bias is applied to the plate of the valve itself,

the B battery seemingly flowing to the grid of the valve. Here lies a very strong resemblance to the four electrode valve, but one will be pardoned for saying that the results are decidedly superior. Glance now at the circuit diagram of this week's receiver.

Here again it will be found that the plate potential of the middle valve is supplied from a separate battery known as the anode or plate bias battery. This battery varies between 13 and 9 volts, according to the particular valve used in this stage. One more, there will be found the two inductor-chokes in the filament leads of the middle valve, these two chokes being tuned by a 6005 variable condenser in parallel.

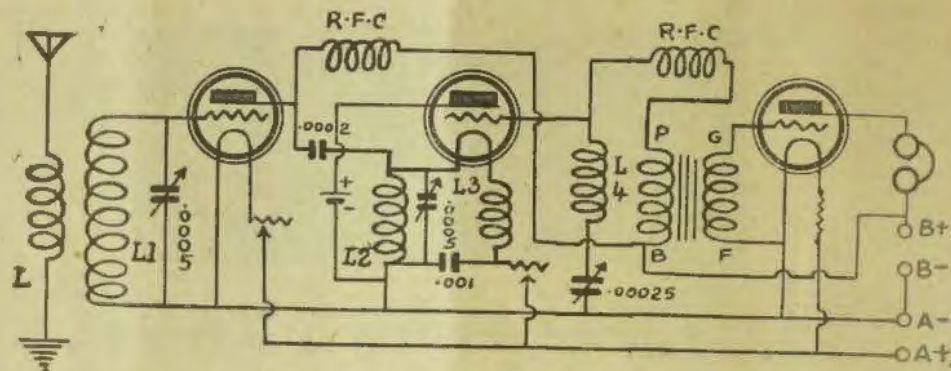
We, therefore, have the tuned chokes common to all Filadyne circuits, or perhaps it should be said, common to the later type of Filadyne circuits. The mission of the radio frequency chokes is to block the passage of radio frequency currents, and the better the choking effect, the more efficient does the receiver become. Maximum efficiency in choking is arrived at when this choking effect is at its greatest point, for the wavelength being received. To achieve this, it naturally follows that the circuit should be tuned, which it is, as may be gathered from the circuit diagram.

Don't confuse these tuned chokes with the two other chokes, one of which will be found in the plate lead of the first valve and the other in the grid transformer primary lead, the *wid* of the second valve of course. Both these chokes are absolutely necessary, and their sizes depend on the particular valves used in their

Although the parts listed below and mentioned throughout the articles 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 nature should function quite satisfactorily.

- 1 Dilecto or Hard Rubber Panel, 18 x 7 x 3-16.
- 2 .0005 Emenco Variable Condensers.
- 1 .00025 Emenco Variable Condensers.
- 3 4in. Dials.
- 1 S.C. Jack.
- 1 Battery Switch.
- 2 Advance 30 ohms. Rheostats.
- 3 Valve Sockets.
- 2 3in. diam. Cardboard Formers, Rezs. No. 22 D.C.C. Wire.
- 1 A.W.A. 9 to 1 Super-Audio Transformer.
- 2 Grodon or Radioloka Chokes.
- 1 Amperite or Brachstat.
- 1 Terminal Board.
- 1 .00025 Wetless Condenser.
- 1 .001 Wetless Condenser.



respective circuits. The Grodan chokes used have a tapping taken of portion of the total inductance, and it is the province of the constructor to try the different combinations for the best results. The success of the radio frequency stage depends largely on the choke in the plate lead of the first valve. It should have a large inductance with a small self capacity. The Grodans just fit in here nicely, but the writer also tried substituting different sizes of honeycomb coils, and found that the best results were obtained in the honeycomb coil bread of choke by using one as big as 1500 turns. The Grodan choke is worth the investment, as 1500 turn coils are scarce, and when located, are very expensive.

The radio frequency valve is one that certainly earns its keep, provided the choke is alright. Not only does it bring in the weak distant station, but the local stations are increased in volume to a very marked extent. Actually when using the first two valves only loud speaker results were possible from the locals. And no mean speaker results at that. Then again, the selectivity is improved. Coil L1 was first tried with the well known system of auto coupling similar to that in force with the one valve described last week. It proved quite selective, but to gain that last little ounce of selectivity an aperiodic aerial coupling coil was wound to advantage. This coil is wound on the same former as the grid coil of the first valve, separated from the grid coil by a small space of three-eighths of an inch. More or less turns than is specified may be used to suit the particular locality in which this receiver has to operate. This is a matter for trial by the individual.

Reaction is introduced by means of coil L4, which is coupled to coils L1,

L2. This reaction is controlled by the 0.0025 mfd. variable condenser. It is very smooth in its action, none of the fierce pops associated with the standard form of reaction being present. This capacity reaction is of particular value for searching for inter-State stations.

The audio frequency stage employs a transformer with a ratio of 9 to 1. Contrary to all expectations, this does not bring along in its trail any distortion. This may be brought about by virtue of the fact that a low impedance valve was used in the audio stage, although when the standard UX201A valve is substituted, little difference could be found in either the volume or the purity. A Mullard PM6 valve in the stage also proved of extreme value.

The appearance of the set is very pleasing, and, indeed, might be called very neat. From the front panel view there will be seen three variable condensers spaced equi-distant from each other. The two rheostats are in between, yet below these condensers. The rheostat on the left hand side governs the radio frequency valve, while the other one is used to control the filament of the Filadylne valve. Plain 4 inch dials were used during the test, but it may be advantageous with the two larger variable condensers to press into service two vernier dials. The reaction condenser is not nearly so critical in this action as are the other two.

Looking at the plan view the spacing of the baseboard components will be seen. It will be noticed that a Brachstat or an Amperite dispenses with the necessity of the rheostat for the audio valve. In every one of these articles where Brachstats or Amperites are specified, attention has

always been paid to pointing out to the uninitiated, that there is a filament ballast of this type for every type of valve, and it is up to the constructor to see that he gets the correct one from his dealer. Tell him just what valve you wish to use the Brachstat with, and he will see you get the correct one.

Actually, there can only be seen two coils on the baseboard, although four are shown on the circuit diagram. This is brought about by winding the two filament chokes on the one former. Inside the former on which these filament chokes are wound, place the reaction coil, and it should be made in such a fashion that it can slip along the inside of this former in order to determine just where the best place is for it. This is a very simple matter.

Still, let us now deal with the construction of this excellent receiver. Firstly, the coils are to be wound. For this purpose, the two 3in. diameter cardboard or Dilecto formers are required. One of them has wound on it the grid coil, and the aperiodic aerial coil, as before mentioned. The grid coil consists of 60 turns of No. 22 gauge D.C. wire. As a matter of fact, all the coils are wound with the gauge wire, in order that the minimum of extra D.C. resistance is introduced into the filament circuit; if smaller gauge wire is used, particularly for the filament chokes and the constructor uses, 6 volt valves in the middle socket, it is possible that the correct filament current will not be allowed to flow on account of this extra D.C. resistance. This is a point well worthy of noting.

Begin the winding of the grid coil, by piercing two holes $\frac{1}{4}$ of an inch away from one end of the former, and

threading through these holes, the beginning of the wire, so it is held securely. Then wind on the 60 turns, this taking up an approximate space of 2½ inches, finish off by securing through two more holes as previously. Three-eighths of an inch away, provide for two more holes, and wind the periodic aerial coil in the same direction. This coil may consist of, say, 15 turns for a start, but note the previous remarks. Leave about an inch of the former left over at this end, then cut off the balance if desired.

Now comes the task of winding the two filament chokes, which are double wound, that is to say, two separate reels of wire are required. One strand from each is taken and both are wound at the same time alongside of each other, along the former. This is known as double winding. As altogether there are two coils of wire on the same former, one turn from each been adjacent to each other. Al-

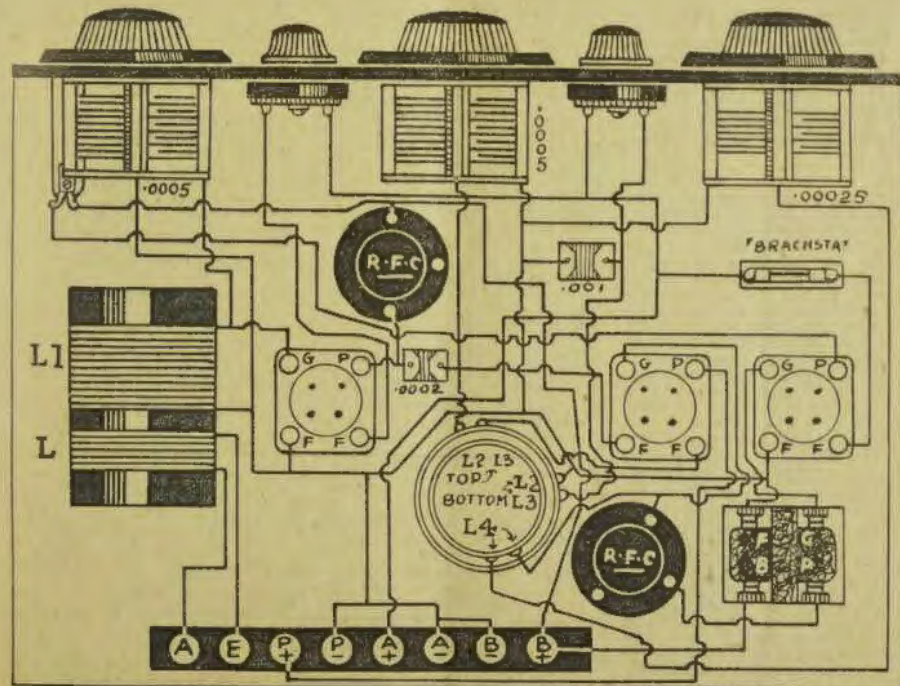
together, 60 turns of wire are required for each coil, which means that the second former has altogether wound on it 120 turns. Now winding the reaction coil is only a matter of a moment. Here a small portion of eardboard former approx. 2½ inches in diameter is required. It may be two inches long. If this size of former is not readily obtainable, a portion of three inch tubing may be cut and made this size. On this reaction former, wind 30 turns of wire.

All these coils may be given a coat of nice, thin shellac which has the advantage of rendering them impervious to moisture. Also incidentally it increases the self capacity somewhat slightly, but not sufficient to interfere with the efficiency of the receiver in any way.

Next, mark out the panel following the dimensions given in the panel drilling diagram. Drill the holes after

centre punching and countersink those holes which are used for fixing the condenser to the panel. If vernier dials are to be employed, then at this stage provide the hole for the catch screw. Mount all the apparatus and then prepare the baseboard by trimming off the edges and treating the surface to a coat of shellac. Now fix the panel in position to the baseboard, and layout the various baseboard parts as shown in the plan view. Remember to fix the two different coil formers at right angles to one another, to avoid any interaction, and adhere to the positions of the chokes shown in the illustrations. Now commence the wiring.

Stiff busbar or soft point to point wiring may be resorted to just to suit the taste of the constructor. Actually speaking, there is a slight advantage





In the spaghetti covered point to point wiring, and Aemc Celatsite is very good soft wire, which is obtainable in different colors of insulation. Wire up the filament circuits first. It will be noticed that the negative lead of the A battery is common to all three filaments. This should be borne in mind when it comes to the double wound choke, that is the filament choke,

In order to determine which wire is which, connect one end of the bottom turn of the choke to one side of a small battery—one strand only, mark you, not the two—and touch both the other ends at the bottom to the remaining terminal of the battery. One will give a spark when so touched and the other will not, that one which sparks is the beginning of the winding which is for the moment connected to the testing battery. Mark both these ends for wiring purposes. The wiring diagram is sufficiently clear so that we may dispense this week with the written instructions. Follow out this diagram carefully, checking off as you proceed and when finished, a final run over with a circuit diagram will reveal the truth of your work.

This circuit is somewhat peculiar and differs in many respects from the average circuit. Care should be exercised in the wiring of the leads to the middle valve. Instead of a terminal board, construct the simply used flexible leads from the circuit to the batteries. There is available to-day a multi colored cord of 5 and 7 strands

which allow for battery connection without resort to a terminal board.

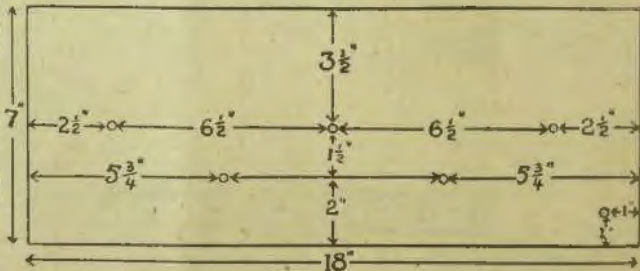
Testing a new receiver is always extremely interesting. Be careful when connecting up the batteries, so that no wrong connection takes place. The B battery voltage for the radio and audio valve may be between 60 and 90 volts. Connect up these batteries correctly, hook on the aerial and earth, and plug in the 'phones for a start. Don't wear the 'phones clamped close to your ears, but drape them around your neck, as when a station is located the volume will be found terrific. Keep the reaction coil up toward the top of the filament choke coils, and turn the dials governing the .0005 variable condensers slowly. They will read almost alike. Soon the local station will be heard. Bring it up to its loudest pitch, by moving the reaction coil lower down or further up inside the other coil. Incidentally, don't forget the anode bias; this varies from $1\frac{1}{2}$ to 9 volts, accord-

ing to the valves used. With a Cosmar Point One red band valve the positive anode bias on the plate will be found in the regions of 43 volts, less being used with a Mullard PM3. A little experiment will determine the exact anode bias required.

The reaction condenser is very smooth in its operation, and a decided increase may be had with distance stations when used judiciously.

At Marrickville, after a couple of hours' play with this receiver, 3LO and 4QG nearly burst the speaker, so great was the volume, and the selectivity was of such an order that no local station interfered. The aerial used was 70 feet overall in length, and 90 volts B battery was applied to the plates of the two amplifying valves. There are many possibilities in this receiver, and those who are of an experimental turn of mind will find much to encourage them in using this remarkably good set. It takes a little bit of understanding for a start, but once mastered will always prove of extreme interest to everyone who builds it. I shall be glad to have reports from readers on this set, each will be replied to.

TIME PASSES very quickly with most of us these days, and before we will be able to look round, Christmas will be upon us. This, especially at Studio 3LO, Melbourne, will be a time for much rejoicing among the children, and already very special arrangements are being made for the youngsters. It would spoil everything to have plans unfolded at such an early date, but the young people may rest assured that something very special is in store for them—two parties have been arranged—and what is to take place at each, will, for the time being, be left to the fertile imagination of the kiddies. All we can say is that the Children's Christmas Treat this year promises to be bigger, brighter, and better than ever.



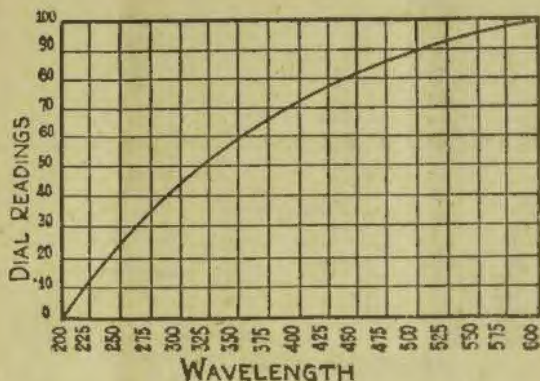
When We Receive and When We Don't

An Explanation of the Peculiar Phenomena surrounding Reception in its many Phases.

Of all factors governing reception location is the most important. Without a naturally favorable location the best of sets give mediocre results, and likewise mediocre sets in a good location give fine results. Large cities are particularly poor locations, as witness the varying results within a small area of New York city. Set manufacturers do not design their products to cope with all the freak conditions met with in various sections. If they did we would have sets as big as a trunk and would require engineers to run them, for they would be extremely complicated and difficult to handle, and not only that, but we would not have any quality, for there would be considerable side band suppression. The best they can do is to design a set to meet average conditions and at the same time make it the simple to operate and give good volume and quality with the proper accessories.

Many do not know that the actual transmitter is generally a considerable distance from the broadcasting studio. The station address is generally announced as being at a certain location, but in most cases we are not receiving the programme from that spot but from one many miles away where the actual transmitter is located. This has caused considerable confusion to many as they did not realize they were actually receiving from a point many miles away instead of the location at which the studio was. We can realize just how much of a difference this makes when we learn that 2FC has its studio in Market Street, Sydney, but the actual transmitting apparatus is located at Pennant Hills, some 14 miles distant. The studio of 3LO is at Forty-second Street, while the actual transmitter is located at Braybrook. This is typical of most of the big stations and is becoming more so each day, due to the effect of bridges, tall buildings, etc., in the vicinity of the transmitter, all of which absorb the energy radiated from the antenna.

These structures can absorb so much of the energy that an absolutely dead spot is created in some sections, and it is no wonder that we cannot receive stations in certain directions. The wonder is that we can receive



anything at all. In the suburban sections this condition can also exist, even though there are no bridges or tall buildings. The influencing factor there is often due to ore deposits under ground. Loop sets are sometimes difficult to get operating, especially with a stucco house. This is because the stucco in most cases is laid on a wire mesh, which acts as a complete shield for the incoming radio waves, very little energy reaching the loop. Therefore we should not blame or condemn a set as being a poor one until we have given it a chance to work. The solution for this trouble on loop sets is to place the set near a window or on a porch where the loop has a chance to pick up some energy. The same applies to loop sets in steel frame apartment houses or locations surrounded by such.

The season of the year is the third factor. Radio reception is always better in autumn and winter than in summer. While the range of a set in winter might be eight hundred miles, the range in summer will fall off to three hundred miles or less. This is not true of all sets or locations, as it is possible to get very fine results in summer. Conditions are variable and must be taken as they come.

Weather Affects Reception.

The fourth factor is the variation of the daily weather conditions. Crisp, clear nights are generally good for radio, while stormy and rainy nights are poor. Snow, hail and rain will sometimes cause a poorly guyed and insulated antenna to leak so much that

the set receives very little or no energy, most of it passing to the ground via defective and leaky insulators. From this we will realize the importance of putting up a good aerial instead of the slanted arrangements so numerous these days. Every service man has plenty of tales to tell about poor antennas. The condition of the weather is no indication of what results we actually will get, for many people have received their best DX on nights which would seem to indicate poor reception.

The efficiency of our apparatus and accessories is the fourth factor. A good antenna, properly guyed to prevent rattling due to swinging and properly insulated to prevent leakage, is the first thing to consider. Care should be taken to secure a good ground of low resistance. For this reason the cold water pipe is the best. Gas, hot water and steam pipes are not recommended. In the case of gas pipes we have many joints of high resistance between the set and the ground.

Batteries Cause Trouble.

Run down and neglected A and B batteries are also a source of many troubles. As a rule, the A or storage battery should be charged about every two weeks for small sets of four or five valves, and more often for larger sets. B batteries will last about four months if used on five valve sets, but for larger ones they will not last as long. For this reason a B battery eliminator would be a good investment and would pay for itself within a short time. At the same time you

will always have a constant and dependable source of power. As the C battery does not consume much energy it does not require as much attention as the other batteries. The C battery should be changed once every six months.

If properly used the valves should last a long time, but after being used a year they should be tested for their efficiency. If attention is given these little details your set should function with no difficulties. As mentioned in a previous paragraph, a loop set if used in a stucco or steel frame house should be placed near a window or opening to give the loop a chance to pick up sufficient energy. Steam pipes and radiators will sometimes have a tendency to absorb energy from the loop if it is very close to them. Likewise telephone wires, etc., will sometimes act as antenna and cause loop sets to tune broad. For this reason do not put loop sets near a telephone wire.

Tuning Skill is Essential.

Your familiarity with your set and skill in tuning it will play a big part in its proper operation and the securing of good results. Most of the factory-made sets to-day are of two types, tuned radio frequency with neutralized stages, or with controlled oscillation. The former is characteristic of neutrodyne.

In the neutrodyne sets we generally have three dials to tune to resonance before we hear a station. There is no whistle to guide us, as in the case of sets with controlled oscillation, the stations just coming in without any whistle or other means of knowing when we have a station. Therefore, we must turn the dials slowly. Otherwise we will pass over stations. Oscillation when under proper control is an asset. The nearer we are to the oscillation point without having oscillation occur the more sensitive our set and the more volume and distance we will get. But oscillation not under control is one of radio's worst conditions. Uncontrolled oscillation, if strong enough, makes our sets act as miniature transmitting stations. Therefore, we interfere with our neighbors and spoil their reception. We can tell when our set is interfering with other sets, as the whistles and squealing will be heard in the loud speaker. Superheterodyne sets improperly handled will cause the same results.

How to Tune.

The tuning dials should be slowly and carefully turned, otherwise many stations will be passed over. Extreme care should be taken when tuning for distant stations, especially on sets with three tuning dials. As one goes down the scale the stations are

sharper and great care will be necessary. The best way to go about hunting for distance is to first go over the scale and log the local stations. These will be loud and strong and can be tuned in without much difficulty. By referring to the programme in "Wireless Weekly" we can easily locate the wave lengths of these stations. With the wave length and dial readings for all local stations now on hand, we can make a chart similar to that in Figure 1. The horizontal lines will represent wave lengths and the vertical lines the dial settings. By properly locating the dial setting and wave length for any local station on this chart and drawing a curve joining all these points we now have a tuning chart which will give the correct dial setting for these stations and will also give the approximate dial settings for any other wave length. This chart is helpful in several ways, one being to show the variation of the different dial settings. As all dials will not log on the same number on each dial this chart will show these discrepancies. It is also helpful in locating distant stations. By referring to the chart we will get an approximate dial setting for any wave length.

For two dial superheterodyne sets and three dial neutrodyne sets we can either make a separate chart for each tuning dial or show all readings on one chart. In the latter case each dial is designated in a different manner. For instance, the first dial can be a solid line and the second dial reading can be a broken line, while a long and short dash line can be used to designate the third dial. Different colored lines will accomplish this also. After the dial readings of a number of DX stations of different wave lengths have been secured a new chart made with various colored lines will serve as a permanent chart.

Interference Always Present.

Interference in some form is always present. One of the most troublesome things the fun encounters is to distinguish the difference between set noises and outside interference. Many a set has been blamed when the cause of the noise, etc., was due to an exterior influence. Almost any electrical device is a source of interference, depending upon its proximity to the set and the power of the apparatus. Sensitive sets will generally pick up more of this noise than ones not so efficient. This is as it should be, for the more sensitive the set the greater the response to be had from a signal. In other words, the more sensitive the set the more volume and DX, provided other factors mentioned previously do

not affect it. Vacuum cleaners, battery chargers, heating pads, trolley lines and subways, elevators, leaky power transformers, violet ray and X-ray machines are only a few of the many forms of man-made interference. The violet ray and X-ray machines are two of the worst offenders. In the case of the latter they sometimes cause interference for a mile around. A constant squeal or an intermittent squeal accompanied by the music being garbled and distorted is caused by oscillating sets and is beyond the control of the listener. The only solution for this is to locate the offender and have him learn how to properly tune his set, a thing we should all remember in order not to cause unnecessary interference with our neighbors. Another type of interference very much prevalent on the air is the constant whine and whistle on or near certain stations. This is due to the air being so crowded there is not a rough separation between stations and their waves clash, causing this whine. Nothing within our means can correct this condition. It is purely a transmission problem.

Static is always with us, that type of interference which sounds like a ton of coal being dumped. So far no real solution has been found for static elimination, although some methods now in use minimize its effects. The loop is one of these devices, and for that reason loop sets will not pick up as much static as an antenna set. As much of the static originates in the tropics or South the directional properties of the loop will aid in reducing this source of trouble, due to the fact that the loop receives best in the plane in which it is pointed and poorest from sections at right angles to the loop. From this we can see that if the loop is pointing east and west most of the static originating in the South is rejected and Western stations come through with great volume, while stations in the South and North are not received. A shifting of the plane of the loop will shift the direction of greatest response.

Noisy B Batteries.

Run down B batteries and loose connections will cause a noise similar to static. To test for loose connections disconnect the antenna. If the noise stops it is probably due to static, but with the antenna disconnected and the noise still present we may conclude the trouble to be within the set or accessories. While on the subject of troubles and their causes it will be in order to suggest that you do not try to be your own radio expert. More factory made sets have been ruined from tinkering by inexpert hands than one would realize. If you want

Most Radio Action is Invisible

"SHOW me another big industry built around an invisible force which remains invisible from producer to consumer and I'll save you the trouble of listening to what I have to say," said the Old Timer between broadcasts. "In the meantime, I'm going right ahead with my thoughts.

"Let's begin right back at the mike. The cold staring but unmovable personality of that strainer-on-a-stick, as some one has called it, has ruined the stage presence of more sweet sopranos and slick voiced tenors than all the opening nights in history. If the thing would only wag its head once in a while or let fly a wicked spark or talk back to the second raters the atmosphere in the studio would seem more homelike. But no! A singer talks to it and all the time he or she doubts that the words are getting anywhere. No action there, you see.

Waves Are Out of Sight.

"Then take the transmitting room, and the aerial above it. You know very well that you can stand beneath that stretch of wire and gaze till doomsday and you'll not see a single wave looping its way off into space. It just isn't done. More invisibility.

At the Receiving Set.

"Now we come to the receiving set. There we can see the valves light up when the battery switch is closed, but that isn't really action. We turn the condensers to get a station, but the funny thing about that particular action is that we can't hear anything as long as we make the action, but the minute we find a good spot on the dial we stop turning it and lo! the sound arrives.

"In the R.F. end we get amplification, but we can't see it, feel it, or smell it. If the amplification isn't there we can correct the fault if we are good engineers, but we can't examine the wheels to see if or where the spokes are missing. No, the action there is absent again.

The Genial Detector Tube.

"In its bare functions the detector valve does more than any other valve in my opinion, but it is as quiet as the others. It sometimes acts like a wild man in a straitjacket, what with its howling and screeching, but it can't move about any more than that unfortunate human.

"And finally in the A.F., what have you? Nothing but the R.F. all over again, but somewhat more civilised. No matter how much you amplify signals from the detector the set

doesn't jump around any more than when it was in the dealer's showcase. Of course, if it is overworked, it expresses itself in the loud speaker, but only vocally, never physically.

"So there you are, I've gone all the way through and I haven't found a single visible action with the doubtful exception of the lighted filaments. That's why I say I'd like to have you show me another big industry that depends entirely for its sustenance on unseen action. I don't believe there are any."

VOLUME CONTROL FOR R.C. AMPLIFIERS.

NOW that power valves are universal use with B eliminators furnishing the B and C supply, it is becoming more and more usual to dispense with switches for amplification stages. Generally speaking, this tends towards simplicity and freedom from stray couplings, and is therefore a step in the right direction.

When a radio frequency stage is used volume may be sufficiently reduced by simply turning down the rheostat of the B.P. stage, but when no R.F. amplification is used the problem becomes a difficult one, and in most cases leads to distortion. Reducing regeneration control is fairly satisfactory in the hands of an expert and therefore is not recommended for sets of the family type. One drawback of reducing regeneration control is that it broadens tuning.

Perhaps the worst method—as advised by some manufacturers—is to include a variable resistance across the loud speaker. It is certainly very effective for controlling the amount of noise produced, but cannot possibly prevent distortion due to tube overloading. In fact, as far as this is concerned, it merely amounts to shutting the stable door after the horse has escaped.

Tapped plate resistances, tapped chokes and tapped transformers all provide simple and satisfactory means of control and can be strongly recommended. Unfortunately, it is often desirable to use transformer coupling for the first stage and two stages of resistance coupling.

A circuit which has given very satisfactory service is shown in the accompanying diagram. This volume control is really a potentiometer with one fixed and one movable arm, the latter being an ordinary variable high resistance.

to be an expert radio man get some parts and assemble a new set which you can tear apart and change as much as you wish. Until you have reached the stage of an expert have your set looked over by some one who knows his business, for the same reason that you go to your doctor instead of the shoemaker when you are ill.

In conclusion, we have learned here are six factors which affect our reception, as follows:

1. Location.
2. Season of the year.
3. Daily weather conditions.
4. Efficiency of our set and accessories.
5. Our skill in tuning.
6. Interference.

Now that we know some of the conditions under which our sets operate we should be more tolerant with them and should not condemn them until they have had a fair trial, for in order to determine the efficiency of a set we should base our opinion on its performance over a period rather than one night's results. Likewise in judging the relative merits of two sets they should both be tested in the same location, on the same antenna, with the same tubes and accessories by the same operator before we can determine which is the better. For this reason when you hear people bragging about the wonderful results they get on such and such a set do not become discouraged with your own, but try and have such a set tested under the same conditions that your set is operating. If this is done you might be surprised to find that you have a better set than you thought after you witness the results of the so-called wonder set working in your location and under your conditions.

ONE HEARS a lot these days of the "Slinky Figure," but how to acquire it is the difficulty. However, the lady with the middle-aged spread need no longer worry. All that is required is, listen-in to Mr. Adams' talks on "Diet and Health," given every Tuesday morning during the Women's Session of 2RL. Mr. Adams' Diet sheets are in great demand, and already Broadcasters have sent out over a thousand of them. If instructions are faithfully carried out, the weighty person will lose one pound of superfluous flesh each week. So when you see a lady with a slyph-like form these days, you can depend upon it that she possesses a wireless set.

A Section for the Trade

THE RADIOLA FOUR.

THE four valve receiver, by reason of the fact that its initial cost is comparatively low and its range sufficient for the reception of inter-continental broadcasting, has always been popular with listeners. However, the demand for a selective receiver has resulted in the scrapping of many early four

battery connections are taken from the rear of the set. The aerial and earth connections are made through the rear of the cabinet to terminals mounted on the sub-panel. The "B" and "C" batteries are contained in the cabinet in which the receiver is housed, but the "A" battery is kept outside so that the fumes will not affect the receiver.

DETECTOR WITH SEVENTY CATWHISLERS.

A new type of trouble proof Crystal Detector has made a welcome appearance on the Australian Market.

This should be good news to all Crystal and Crystal Reflex users, as a really good and adjustable detector will fill a long felt want.

The new G. and S. Silk-core Crystal Detector is practically permanent, each Crystal being chemically treated by an exclusive and secret laboratory process, which guarantees its life indefinitely. Adjustable spring tension maintains and insures even and constant contact at all times.

A Single wire or Catwhisker cannot transmit the necessary electrical energy through it, without destroying the contact point or the Crystal face. To remedy this condition, use has been made of a silk core brush, composed of seventy strands, which distributes the energy equally, thus making it impossible to burn out either the Crystal or Contact points.

The silk brush used in the G. and S. Silk Core Crystal Detector is constructed of seventy silk cords, minutely wrapped with flat bronzed tinsel, making contact on the full Crystal face, preventing burning out of Crystal and resulting in louder music.

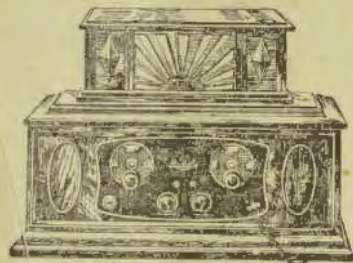
This detector is easily fitted to your panel, by drilling one 7-16 inch hole.

The G. and S. Silk Core Crystal Detector can be obtained from the Economic Radio Stores, of 25, New Royal Arcade, Sydney; 509 Hunter Street West, Newcastle, or corner Church and Macquarie Streets, Parramatta, N.S.W.

INTRODUCING TWO NEW RADIO "B" BATTERIES.

The popularity of Ever-Ready Radio Batteries will be further increased with the introduction of two new "B" Batteries. After months of experimenting at the great Ever-Ready works in London, these latest additions to the wonderful list of products of this great organisation underwent a series of tests which proved beyond doubt that they were far superior as a "B" Battery. Of 45 volts, they are called "Super-Service" and "Heavy Duty" respectively, and combine trouble-free service and long life with a purity of tone in reception, which every radio enthusiast seeks.

If your radio dealer has not yet obtained stocks of the above, communicate with THE EVER-READY COMPANY (Gt. Britain), LTD., 163 Pitt Street, Sydney, who will fulfil your needs immediately.



RADIOLA FOUR

1 Stage Radio Frequency,
Detector and Two Stages of
Transformer Coupled Audio
Frequency.

valve sets which were not selective enough to separate the local stations so that distant stations could be received.

In the last year or so considerable attention has been paid to radio frequency amplification, and it is now possible to obtain receivers in which the radio amplifier has reached a stage of efficiency and selectivity not previously thought possible.

It is to the credit of Amalgamated Wireless (Australia) Ltd., that such a circuit has been included in this firm's latest four valve receiver marketed under the trade name of The Radiola Four.

This interesting receiver embodies all the latest improvements in radio, not the least of which is simplicity of operation. Tuning is controlled by means of two vernier dials, an "intensifier" control keeping the set in its most sensitive state. This control is really on the reaction of the detector valve, and the smoothness with which it acts allows a very fine control of regeneration. This is a great aid in searching for weak and distant stations.

The only other control on the panel is the battery rheostat for adjusting the filament voltages of the valves. As is usual with the A.W.A. receivers, connections for a pin-jack voltmeter have been provided. Although the meter is not supplied with the receiver, its use is manifest, and the provision for mounting such a meter is indicative of the fact that nothing which modern practice has shown will increase the efficiency of any receiver has been overlooked.

The loud speaker jack is mounted on the front panel, whilst the cabled

The circuit of the Radiola Four is a variation of the Browning Drake, and comprises one stage of radio frequency amplification, a regenerative detector, and two stages of transformer coupled audio frequency amplification. The latter are coupled by the well-known A.W.A. transformers, and give remarkable volume and clarity. Ballast resistors are used to control the audio frequency amplifiers, the master rheostat previously mentioned taking care of the elements of the detector and radio frequency amplifier.

On test the Radiola Four behaved excellently, and no trouble was experienced in bringing in all the Australian "A" class stations on the loud speaker. The "B" class stations were also tuned in, but, of course, the volume in this case was slightly less. Donning the phone, a search was made for real "D.X.," and the operator's efforts were rewarded with New Zealand stations at good strength.

When it is remembered that the aerial system in use during the tests of the Radiola Four was remarkable by reason of its inefficiency, an idea can be gained of the efficiency of the receiving aet. Tuning was found to be easy, and the excellent control of regeneration made it possible to bring in even the weakest of stations without recourse to the regenerative "howl" which is such a source of annoyance to neighbouring listeners.

Our sample of this excellent receiver was received from the manufacturers, Messrs. Amalgamated Wireless (A/sia), Ltd., of York St., Sydney.

AMPLION. A SIA. LTD., announce removal of premises to "Bradbury House," 63 York-street, Sydney, where fine office and show-room accommodation have been opened. Dealers and the general public are invited to call and hear demonstrations of the Amplion Loud Speakers and also of the now famous Amplion Public Speech and Band Repeater Equipment. Future correspondence for the firm should be addressed as above.

RADIOKES STANDARD REINARTZ COUPLER.

This recent product of "Radiokes" laboratory was submitted by the manufacturers, The Metropolitan Electric Co., Ltd., of King Street, Sydney.

This unit is of conventional design, being composed of three coils, two and three-quarters in diameter, and arranged for convenient bedside or sub-panel mounting, and easily accessible wiring.

The windings are carried out in brilliant green silk covered wire, according to the distinctive Radiokes Low Loss method, which employs practically no dielectric in the coil field, which on test prove to be the most efficient form of winding yet devised, thus making for sensitivity and selectivity.

This instrument is equipped with six connections so that it may be used in either of the many adaptations of the Reinartz circuit. The blue print enclosed with unit illustrated the single control Reinartz receiver recently featured in "Radio."



In addition to the now well known Radiokes "solder all the way" soldering lugs this unit is equipped with screw terminals for the experimenter who prefers not to use soldering outfit in constructing his receiver.

As the Reinartz method of regeneration control is becoming so popular, this instrument should prove of considerable interest to all fans anticipating construction of receivers employing this well known principle.

The instrument arrived in excellent packing, complete with mounting brackets and blue print of circuit,

THE NEW COSSOR VALVES.

To-day the British manufacturers are in the forefront with their radio components. Some years ago this could not be said truthfully, but typical of the race, every battle is lost but the last.



With valves in particular does this apply. Messrs. A. C. Cossor, Ltd., of London, have an entirely new range of valves, which promise to be world beaters. Mechanically they are wonderfully strong. The plate is firmly attached to the grid by means of a ceramic insulator. Not even the hardest blow can disturb its alignment. There is a long Kalenised filament which ensures a terrific emission at a low temperature, thus making for long life. This filament is firmly secured in five positions.

All the three elements—the filament, the grid and the plate—are locked in permanent alignment, true to one hundredth part of an inch. Therefore, Cossor valves possess a uniformity of characteristics so that all Cossor valves of the same class are identical; the slightest variation is impossible. To Neutrodyne and Super Heterodyne owners, where valves of uniform characteristics are essential in the radio frequency stages this is of vital importance. No other valve boasts of this wonderful Kalenised filament.

They are made in ranges to suit 2 volts, 4 volts and 6 volts, and are all special purpose valves, this being the modernised method of production to give maximum efficiency.

AIRPLANE RADIO.

Latest advices from F. H. Schoell, Chief of the Experimental Radio Laboratories of the Burgess Battery Company, United States, America, indicate that the company is directing its activities extensively towards air-plane radio. A very small receiver and transmitter has just been designed and built, the total outfit, including Burgess batteries, weighing approximately 60 pounds. The first tests with the plane in the air showed that communication was held for a distance of 47 miles. The wavelength was about 79 metres.

We expect to have full particulars of this airplane transmitter and receiver in the near future, when they will be placed before our readers.

WIRELESS VALVES.

We are advised that by consent of the parties in the Equity suit of Philips Lamps (Australia), Ltd., against A. P. Price, trading as "Price's Radio Stores," Angel Place, Sydney, a decree was made by Mr. Justice Harvey, perpetually restraining the defendant, during the continuance of letters patent, covering Philips and Mullard wireless receiving valves, from selling, or offering these goods for sale, at other than the retail price imposed and fixed by the plaintiff company.

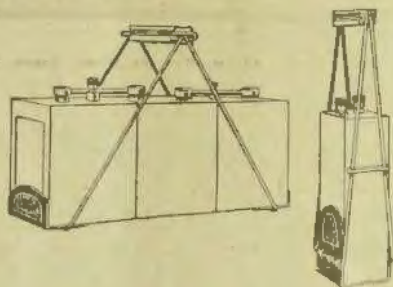
Defendant is to pay the costs of the suit.

It was alleged that the defendant had infringed the plaintiff's letters patent by selling the valves below the fixed price.

Mr. C. D. Monahan (instructed by Messrs. A. J. McLachlan, Westgarth and Co.) appeared for the plaintiff; and Messrs. Minter, Simpson and Co. for the defendant.

APART from unearthing much latent literary talent by their recent "One Act Play Competition," Studio SLO, Melbourne, are affording listeners much pleasure in having the winning plays broadcast. In the capable hands of that very clever producer and popular announcer, Mr. Maurice Dudley, the playlets are being broadcast in a very masterly fashion, and no trouble is being spared to render the author every assistance. Not a few of the manuscripts submitted showed a remarkable amount of promise, and, as there is a great demand for plucky radio plays, writers of the winning playlets should feel encouraged to embark on this new road of literary work.

Carry Your ACCUMULATORS in Comfort and without Risk with the "ENTLEY" Battery Carrier



It is an ingenious, but simple device, will grip securely all the usual type of accumulators and entirely overcomes the trouble and inconvenience usually associated with carrying heavy and cumbersome Batteries.

STRONG—LIGHT—DURABLE.

Made of metal with non-corrosive coating and rubber handle.

Adjustable from 1 to 15 inches.

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We are Distributors for the famous Batteries and have fresh stocks arriving from the factory almost daily.

"B" BATTERIES.

Small size, for 1 and 2 Valve

WP 30—30 Volts 9/6

WP 40—42 Volts ... 12/6

WP 60—60 Volts ... 18/-

Heavy Duty size, for 3 or more Valves.

XP30—30 Volts 16/-

XP40—42 Volts 21/-

XP60—60 Volts 31/6

"A" BATTERIES.

Standard, 4½ Volts ... 9/6

"C" BATTERIES.

No. 126—1½, 3 or 4½ Volts,
2/9.



METERS FOR BATTERY TESTING.

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0/10 and 0/100 Volts, Pocket Type, 7/6.

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BRANCH:

384 Pitt Street,
Near Goulburn Street.

BROADCASTING PROGRAMMES

for the COMING WEEK

Friday, Nov. 18

2FC, SYDNEY.

Farmer's Broadcasting Service.

Waves Length, 442 Metres.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

- 7 a.m.—"Big Ben" and programme announcements.
 7.5 a.m.—Studio music.
 8.10 a.m.—Local minute sporting information by the 2FC Racing Commission.
 8.15 a.m.—"Sydney Morning Herald" summaries.
 8.30 a.m.—Studio music.
 8.45 p.m.—A reading.
 8.55 a.m.—Studio music.
 9 a.m.—"Big Ben." Marching music for school children.
 9.15 a.m.—A.P.A. and Foster's Cable Service.
 9.30 a.m.—Studio music.
 9.45 a.m.—A talk on home cooking and recipes by Miss Ruth Foote.
 10 a.m.—Close down.

MIDDAY SESSION.

- 10 noon—"Big Ben" and announcements.
 10.30 p.m.—Stock Exchange, first call.
 10.45 p.m.—Official weather forecast, rainfall.
 11 a.m.—Studio music.
 11.15 p.m.—Summary of "Sydney Morning Herald" news service. Rugby wireless news.
 11.30 a.m.—Studio music.
 11.45 p.m.—Marching music for school children.
 12 a.m.—Clara Fethergill, Dramatic soprano.
 12.15 p.m.—"The Valley of Laughter" (Hosier).
 12.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 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.
 1.30 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 1.45 p.m.—Stock Exchange, second call.
 1.50 p.m.—Marching music for school children.
 1.55 p.m.—Clara Fethergill, dramatic soprano.
 2 a.m.—"The little banjo" (Richardson).
 1.45 p.m.—Studio music.
 1.55 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 2.15 a.m.—"Big Ben" and announcements.
 2.30 p.m.—A recital.
 2.45 p.m.—From The Studio, End King, contralto.
 "Song of Florina" (Gardner).
 2.55 p.m.—Continuation of the Record recital.
 3.10 p.m.—Guzzevici Eppel soprano:
 "Angels Guard Thee" (Gardner).
 3.20 p.m.—Marching music for school children.
 3.30 p.m.—From Farmer's Tea Rooms, Florence Graust, soprano:
 "Moonlight Elys" (Temple).
 3.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.

- 3.55 p.m.—From The Studio, Jack Dunne, baritone:
 "Nepes Yellow Toss" (Hosier).
 4 p.m.—"Big Ben." From Farmer's Tea Rooms
 Nea Hallett, mezzo.
 4.15 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 4.30 p.m.—End King, contralto; From The Studio:
 "Requiem" (Hosier).
 4.40 p.m.—From The Farmer's Tea Rooms,
 Florence Graust, soprano:
 "The Moonlit road" (Squire).
 4.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
 4.55 p.m.—From The Studio, Genevieve Eppel, soprano:
 "Down in the Forest" (Ronald).
 5 a.m.—Farmer's Tea Rooms, Nea Hallett, mezzo.
 5.15 p.m.—From The Studio, Stock Exchange, third call.
 5.47 p.m.—Jack Dunne, baritone:
 "Fading in Love" (Mayer).
 5.50 p.m.—From The Studio, Musical Items.
 6 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 a.m.—"Big Ben." Dalrymple's market reports (vegg, wheat, stock).
 7.3 a.m.—Fruit and vegetable markets.
 7.40 p.m.—Weather and shipping news.
 7.45 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 7.30 p.m.—Programme announcements.
 7.45 p.m.—Orickating reminiscences. A talk prepared by Mr. Frederick Harper.
 7.47 p.m.—Madame Vera Tasma, soprano:
 "He was not one of mine" (Hall).
 7.51 p.m.—Ad Cree, Scotch, Canadian.
 8 p.m.—"The Ben." Frank McEachern, basso.
 8.1 p.m.—"Learn" (Bennett).
 8.2 p.m.—"Rolling down to Rio" (German).

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

- 2FC—Farmer's Broadcasting Station, Ltd., Sydney, wave-length 442 metres, power 2600 watts.
 2BL—Broadcasters' Ltd., Sydney, wave-length 315 metres, power 5000 watts.
 2GB—Theosophical Broadcasting Station, Ltd., Sydney, wave-length 315 metres, power 2000 watts.
 2KI—Trades and Labor Council, Sydney, wave-length 290 metres, power 1500 watts.
 2UW—Ditta Sandel, Sydney, wave-length 267 metres, power 1500 watts.
 2MX—Medlar Bros., Bathurst, wave-length 215 metres, power 250 watts.
 2UX—Electrical Utilities Supply Co., Sydney, wave-length 293 metres, power 250 watts.
 2BE—Bergin Electric Co., Sydney, wave-length 315 metres, 100 watts.
 2BD—H. A. Douglas, Newcastle, wave-length 288 metres, 100 watts.

- 8.8 p.m.—Win and Windie, English Entertainers.
 8.10 p.m.—Jack Lumsden, songs at the piano.
 8.25 p.m.—Madame Vera Tasma, soprano:
 "La Serenata" (Tosti).
 8.30 p.m.—Scott Alexander will present an all-world Irish Comedy adapted for Radio by Colington Hall, entitled:
 "The Boy from over the Hill."
 Mr. Alexander as the old General.
 8.40 p.m.—Frank McEachern, basso:
 "Drake goes West" (Sanderson).
 8.45 p.m.—Win and Windie, English entertainers.
 8.55 p.m.—Madame Vera Tasma soprano:
 (a) "Little Shepherd" (Donald Ford).
 (b) "Loch Lomond" (by request).
 9 p.m.—"Big Ben." Latest weather forecast.
 9.1 p.m.—Ad Cree, Scotch comedian.
 9.7 p.m.—Jack Lumsden, songs at the piano.
 9.18 p.m.—Frank McEachern, basso:
 "Devotional Crown and Ode" (Sanderson).
 9.22 p.m.—From Her Majesty's Theatre (by permission of J. C. Williamson, Limited):
 Act Two of

"CASTLES IN THE AIR"

- Musical numbers:
 Opening the Chorus.
 Latvian Dance, Leo Franklyn, Chorus and Ballet.
 Song, "Baby," Gus Hieatt and Chorus.
 Song, "My Latvian," Roy Russell and Full Chorus.
 Song, "Land of Romance," Rowena Ronald, Hieatt, "What a Wonderful Day," Rowena Ronald and Roy Russell.
 The Latvian Chorus, Full Chorus.
 Dance, Pine Allen.
 Finale, Principals and Ensemble.
 10.20 p.m.—From The Studio:
 Ad Cree, Scotch comedian.
 10.30 p.m.—From Her Majesty's Theatre:
 The Third Act of

"CASTLES IN THE AIR"

- Musical numbers:
 Opening Ensemble, Chorus.
 Song, "The Glimpse," Gus Hieatt.
 Song, "Home Again," Cecil Bellaway.
 Finale, Principals and Ensemble.
 10.45 p.m.—Late news and announcements, from the Studio.
 11 p.m.—"Big Ben." Dance items.
 11.10 p.m.—Len Maurice, popular baritone.
 11.15 p.m.—Dance Music, interspersed with vocal numbers, by Len Maurice, until 11.30 p.m.
 11.30 p.m.—National Anthem.

2BL, SYDNEY.

Broadcaster's Ltd.
 Wave Length, 353 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 studio.
 10.40 a.m.—News from the "Daily Telegraph" (Pictorial).
 10.50 p.m.—Musical programme from the Studio.
 11 a.m.—G.P.O. Clock and chimes. Announcements.

11.6 a.m.—Musical programme from the studio
 11.16 a.m.—Talk on "Camping" by Miss Varley, Broadbeach Women's Sports Authority
 Social Notes. Replies to correspondents by Mrs. Jodan.

Talk on "Sweetmaking" by Priscilla.
 12 p.m.—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, Mail, Shipping, and post directory.
 12.11 p.m.—Booth to call by wireless.
 12.13 p.m.—Fruit Market report.
 12.16 p.m.—Yemenite Market report.
 12.17 p.m.—London Metal Market reports.
 12.19 p.m.—Dairy and Farm Produce Market report.
 12.21 p.m.—Orange Market report.
 12.24 p.m.—Fish Market report.
 12.26 p.m.—Rabbit Market report.
 12.29 p.m.—Stock Exchange report.
 12.30 p.m.—B.M.M., Gramophone Hospital.
 12.31 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 p.m.—G.P.O. Clock and chimes. Close down.

AFTERNOON SESSION.

Basic information broadcast immediately after each race by courtesy of the "Sun."
 3 p.m.—G.P.O. Clock and chimes.
 News from the "Sun."
 4.15 p.m.—Civil Service Stores Tea, direction, Miss de Courtenay Hunter.
 4.30 p.m.—G.P.O. Clock and chimes.
 Talk on "Among Tropics Isles" by Mr. Basil Kirke.
 2.40 p.m.—Talk on "Homocentric" by Priscilla.
 4 p.m.—G.P.O. Clock and chimes. Civil Service Stores Tea.
 4.15 p.m.—Special Story.
 4.30 p.m.—Musical programme from the studio
 4.45 p.m.—News from the "Sun."
 4.55 p.m.—Resume of night programme.
 4.57 p.m.—Dancing Resume.
 4.59 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.
 5.40 p.m.—Musical programme from the studio
 SPECIAL COUNTRY SESSION.
 7 p.m.—G.P.O. Clock and chimes.
 Australian Mercantile Land and Finance Co's Report.
 Weather report and forecast by courtesy of Govt. Meteorologist.
 Produce Distributing Society's Fruit and Vegetable Market report.
 Stock Exchange reports.
 Grain and Fodder report ("Sun").
 Dairy Produce report ("Sun").
 7.10 p.m.—Country News from the "Sun."
 7.20 p.m.—Talk by Mr. Gregory of the N.R.M.A.
 7.40 p.m.—Talk on "Gardening Science" by Mr. Cooper Park, Superintendent City Council.
 Special Sporting Evening.
 8 p.m.—G.P.O. Clock and chimes.
 Broadcasters' Topical Chorus.
 8.10 p.m.—Broadcasters' Light Orchestra under the direction of Mr. J. Knight Barrett.
 8.11 p.m.—Mr. Leslie Herford, (bassoon).
 8.18 p.m.—Mr. Bob Harrison, (conductor).
 Humorous Songs.
 8.25 p.m.—Miss Mabel Fotheringham (soprano).
 Sobriette Numbers.
 8.33 p.m.—A description by Mr. Basil Kirke of the light at the stadium.
 8.40 p.m.—Broadcasters' Light Orchestra.
 Musical Comedy Selection.
 8.49 p.m.—Broadcasters' All Sports expert will talk on "Cricket."
 8.55 p.m.—Mr. Leslie Herford.
 8.57 p.m.—The Sporting Editor of the "Sun" will talk on the prospects of Saturday's races.
 10.22 p.m.—Mr. Bob Harrison (Humorous songs).
 10.25 p.m.—Dance music broadcast from the ballroom of the Royal Casino.
 10.30 p.m.—Miss Mabel Fotheringham.
 10.40 p.m.—Resume of following day's programme.
 10.45 p.m.—Dance music broadcast from the ballroom of the Royal Casino.
 11 p.m.—G.P.O. Clock and chimes.
 National Anthem.

2GB, SYDNEY

Theosophical Broadcasting Service.

Wave Length, 316 Metres.

Friday.

MORNING SESSION.

9 a.m.—Music.
 9.5 a.m.—"Cheerio" Talk.
 9.15 a.m.—Music.
 9.25 a.m.—Musical (Special Class).
 9.40 a.m.—Music.
 9.55 a.m.—Health and Diet.
 10 a.m.—Close down.

AFTERNOON SESSION.

3.30 p.m.—Music.
 3.37 p.m.—Address by Professor E. Wood.
 3.38 p.m.—Music.
 4 p.m.—Address.
 4.22 p.m.—Music.
 4.30 p.m.—Close down.

EVENING SESSION.

7 p.m.—Music.
 7.15 p.m.—Benediction Service.
 7.40 p.m.—Address.
 7.55 p.m.—Instrumental Trio:
 HAN SULLY, MURIELLE LANG,
 ADA BROOK.
 8.5 p.m.—Address by Professor E. Wood.
 8.20 p.m.—Songs by Miss Kathleen Ryan.
 8.28 p.m.—Violin solos.
 8.35 p.m.—Songs by Rupert Marshall:
 1. "The Blind Foughman" (Clarke).
 2. "If I Might Come to You" (Sacre).
 8.43 p.m.—Instrumental Quartette:
 DAN SULLY, MURIELLE LANG,
 ADA BROOK.
 9 p.m.—Address by Mr. J. K. Powell.
 9.15 p.m.—Piano solos: Emily Burke.
 9.25 p.m.—Songs by Miss Kathleen Ryan.
 9.33 p.m.—Cells solo: MURIELLE LANG.
 1. "Spring Brunesen" (Davidoff).
 2. "Beauce" (D'Hardelle).
 9.40 p.m.—Songs by Rupert Marshall:
 1. "In An Old Fashioned Town" (Squire).
 10 p.m.—Talk.
 10.30 p.m.—Close down.

INTERSTATE "A" AND "B" CLASS BROADCASTING STATIONS.

1LO.—Broadcasting Company of Australia, Ltd., Melbourne, wavelength 371 metres, power 3000 watta.
 2AR.—Associated Radio Co. Ltd., Melbourne, wavelength 484 metres, power 3000 watta.
 4G6.—Queensland Radio Service, Brisbane, wavelength 261 metres, power 4000 watta.
 4CL.—Central Broadcasters' Ltd., Adelaide, wavelength 395 metres, power 500 watta.
 4WF.—Western Australian Radio, Ltd., Perth, wavelength 1250 metres, power 4000 watta.
 7ZL.—Tasmanian Broadcasters, Ltd., Hobart, wavelength 510 metres, 3000 watta.
 3DB.—The 3DB Broadcasting Co. Pty., Ltd., Capital House, Melbourne, wavelength 265 metres, power 500 watta.
 5UZ.—O. J. Nilsen & Co., Melbourne, wavelength 318 metres, power 100 watta.
 4GR.—Cold Radio Electric Service, Tasmania, Queensland, wavelength 294 metres, power 180 watta.
 4KA.—Sport Radio Broadcasting Station, Adelaide, wavelength 359 metres, power 1000 watta.
 4SD.—D. P. Pty., Ltd., Adelaide, wavelength 213 metres, 500 watta.

2 UW, SYDNEY

Sandel Radio, Ltd.

Wave Length, 267 Metres.

Friday.

MORNING SESSION.

9 a.m.—News; Shipping; Markets; Studio Items.
 9.45 a.m.—Women's Session.
 9.50 a.m.—Resume of Forward Programme.
 10 a.m.—Close Down.
 12.15 p.m.—Special Employees' Luncheon Service.
 12.16 p.m.—Close Down.

AFTERNOON SESSION.

2.0 p.m.—Studio Items.
 2.50 p.m.—Resume of Forward Programme.
 3.0 p.m.—Close Down.

EVENING SESSION.

8.0 p.m.—Studio Items.
 8.50 p.m.—Resume of Forward Programme.
 9.0 p.m.—Close Down.

NIGHT SESSION.

7.0 p.m.—"Senora" Selection.
 7.4 p.m.—Where to Go.
 7.40 p.m.—Pianoforte Selection, "Our Miss Gibbs."
 7.16 p.m.—Songs at the Piano: Miss Ailene O'Connor.
 7.20 p.m.—Miss Janet Kelly, Comedianette Selected.
 7.25 p.m.—"Sonora" Selections.
 7.35 p.m.—Cecily Ella, Mezzo Soprano Selected.
 7.39 p.m.—Harry Atfield, Jazz Invention.
 7.40 p.m.—Miss Janet Kelly, Comedianette Selected.
 7.50 p.m.—Miss Ailene O'Connor, Songs at the Piano.
 8.0 p.m.—Commercial Art, by E. E. Salmon.
 8.16 p.m.—George F. Manuel, Tenor: "When Song is Sweet."
 8.20 p.m.—Reg Hill, Pianoforte Solo Selected.
 8.25 p.m.—"Sonora" Selection.
 8.35 p.m.—George Manuel, Tenor: "When Song is Sweet."
 8.39 p.m.—Miss Cecily Ella, Mezzo Soprano Selected.
 8.43 p.m.—Miss Janet Patterson, Pianoforte Solo Selected.
 8.48 p.m.—Miss Ailene O'Connor, Songs at the Piano.
 8.54 p.m.—Harry Atfield, Jazz Invention.
 9.0 p.m.—Weather Forecast and News Bulletin.
 9.10 p.m.—George F. Manuel, Tenor: "Invanno."
 9.14 p.m.—Miss Janet Patterson, Pianoforte Solo Selected.
 9.18 p.m.—Songs at the Piano.
 9.20 p.m.—Resume of Forward Programme.
 9.25 p.m.—God Save the King.

3LO, MELBOURNE

Broadcasting Co. of Aust.

Wave Length, 371 Metres.

Friday.

MIDDAY SESSION.

12.0 noon—Melbourne Observatory Time Signal, Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day; British Official Wireless News from Rugby; Reporter's and the Australian Press Association Cables; "Herald" News Service.
 12.20 p.m.—REGENT GRAND CONCERT ORCHESTRA:
 March, "Gallant" (Songs).
 12.57 p.m.—REGENT GRAND CONCERT ORCHESTRA:
 Entrée, "Incidental Music—Faust" (Col. Taylor).
 12.30 p.m.—YETTY LANDAU, Recitations: "The Lost Me Dore" (Kiddie Story), "The Flapper at Greballs and Gaps."

- 12.37 p.m.—Stock Exchange Information.
 12.40 p.m.—REGENT GRAND CONCERT
 ORCHESTRA:
 Overture, "Seventh Abroad" (Rollinson).
 12.50 p.m.—MADOLINE KNIGHT, Contralto:
 "Cockles and Mussels" (Irish).
 "The Irish Emerald" (Irish).
 1.0 p.m.—Melbourne Observatory Time Signal.
 1.17 p.m.—Meteorological Information: Weather
 Forecast for Victoria, Tasmania, South
 Australia and New South Wales: Green
 Forecast; River Reports for Victoria, Tas-
 mania, South Australia and New South
 Wales.
 1.40 p.m.—MARIE LAWTON, Soprano:
 "Oh Lovely Night" (Lanson Ramsdell).
 "The Hills of Donegal."
 1.52 p.m.—REGENT GRAND CONCERT
 ORCHESTRA:
 Selection, "Bon Marie" (Friml).
 1.50 p.m.—MRS. ERNEST LEVINSON will
 speak under the auspices of the Health
 Association of Australasia on:
 "Children's Fears in Relation to Health."
 1.10 p.m.—SENIA CHOSTIAKOFF, Tenor:
 "Cecilia Nikitch"—a legend, arr. by
 K. Jaroff.
 "La Donna e Mobile" from "Rigoletto."
 1.47 p.m.—REGENT GRAND CONCERT
 ORCHESTRA:
 "The Boos' Wedding" (Waldteufel).
 "The Skaters."

AFTERNOON SESSION.

- 2.0 p.m.—Melbourne Observatory Time Sig-
 nal. STUDIO QUARTETTE:
 Selection, "Kid Boots."
 2.10 p.m.—MISS FRANCES FRASER:
 "The Knight King Arthur."
 2.20 p.m.—DORATHEA MACMASTER,
 Alto:
 Sonata Appassionata—1st movement (Bee-
 thoven).
 "Valse in D Flat" (Chopin).
 "Ballade in A Flat" (Chopin).
 2.35 p.m.—MARIE LAWTON, Soprano:
 "Oh, Brother" (Dow).
 "Medley of Popular Successes."
 2.35 p.m.—STUDIO QUARTETTE:
 "The Lion."
 "The Lion" (Lion).
 2.45 p.m.—Under the auspices of the Health
 Association of Australasia, MR. E. E.
 BEECOTT will speak on "The Value of
 Vegetables in the Diet."
 2.40 p.m.—STUDIO QUARTETTE:
 New Sullivan Selection.
 2.45 p.m.—MARIE LAWTON, Soprano:
 "By the Waters of Minnesota" (Lieser-
 berg).
 "Fad In Jeller wid his Maam's Eyes"
 (Clouston).
 2.50 p.m.—MRS. H. CALLAWAY MAHOOD,
 Personalities in Art:
 "Dante Gabriel Rossetti."
 2.55 p.m.—Herald News Service.
 3.0 p.m.—Results of the Associated Public
 Schools of Victoria Cricket Matches.

EARLY EVENING SESSION.

- CHILDREN'S LETTERS AND BIRTHDAY
 Greetings by "BILLY BUNNY."
 6.0 p.m.—STUDIO QUARTETTE:
 Music Pictures—Evening in the Theatre (Foulds).
 8.10 p.m.—Under the auspices of the Health
 Association of Australasia, CHILDREN'S
 HEALTH PLAY, by North Brunswick
 State School:
 "From Danger Valley to Safety Hill."
 6.35 p.m.—STUDIO QUARTETTE:
 Music Pictures—Evening in the Forest
 (Foulds).
 6.40 p.m.—Herald News Service; Weather
 Synopsis; Shipping Movements.
 6.47 p.m.—Stock Exchange Information.
 6.55 p.m.—Fish Market Reports by J. R.
 Barrett, Ltd.; Rabbit Prices.
 6.55 p.m.—River Reports.
 6.58 p.m.—Newmarket Sheep Sales by the
 Associated Stock and Station Agents,
 Bourke Street, Melbourne; Market Reports
 by the Victorian Producers Co-operative
 Co., Ltd.; Poultry, Grain, Hay, Straw,
 Jute, Dairy Produce, Potatoes, and Onions.
 7.12 p.m.—Market Reports of Fruit by the
 Victorian Fruitgrowers' Association; Retail
 Prices of Fruit Market Reports; Wholesale
 Prices by Wholesale Fruit Merchants' As-
 sociation; Ballarat Fruit Market Reports by
 the Ballarat Stock and Station Agents.

EVENING SESSION.

- 7.15 p.m.—Under the auspices of the Depart-
 ment of Agriculture:
 MR. A. B. HACKWELL, Estate Field
 Officer, will speak on:
 "Conservation and Use of Stable Manure."
 7.30 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 March, "Bona Sobel."
 "Orange, 'Boughs et Noir."
 7.40 p.m.—YETTY LANDAU, Recitations:
 "Waiting for Something to Happen."
 "Crossing the Bar" (Tennyson).
 7.47 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 Tenor Solo, "Your Eyes Have Told Me
 'Tis True."
 "Humoresque."
 7.54 p.m.—MR. H. K. LOVE:
 "Technicalities."
 Mr. Love will be glad to attend to your
 wiring difficulties, and we ask you to
 write to him for any advice that you may
 require.
 8.4 p.m.—MOANA LEO DUO:
 "Hawaiian Melodies."
 8.11 p.m.—E. MARION WOOD, Baritone:
 "Even-Braved Heart."
 "Old Barty."
 8.18 p.m.—MISS MARY CAMPBELL, will
 speak on the Million Shilling Fund.
 8.23 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 Waltz, "Angelia Mio."
 8.23 p.m.—SENIA CHOSTIAKOFF, Tenor:
 "Beautiful Eyes"—A risqué romance.
 "Come Back to Sorrento"—Serenade from
 Romeo and Juliet (E. de Curtis).
 8.40 p.m.—MR. C. J. WILLIAMS will speak
 on:
 "Tomorrow's Stadium Event."
 8.50 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 "Ballad, D'Amour."
 "Singing Chorus from Madam Butterfly."
 9.0 p.m.—Description of Progress of Dan-
 low Grand Prix—relayed from Warram-
 boo.
 Under the auspices of the Health
 Association of Australasia, the HEALTH MES-
 SAGE for today is:
 "The prime duty of a statesman is the
 care of the Public Health, Public Health
 is purchasable."
 9.10 p.m.—E. MARION WOOD, Baritone:
 "I Hear a Shepherd's Pipe at Eve" (Wil-
 helm).
 "Memories."
 9.17 p.m.—MOANA LEO DUO:
 "Hawaiian Melodies."
 9.23 p.m.—MADOLINE KNIGHT, Contralto:
 "Kilbrannan."
 "Believe Me if All Those."
 9.30 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 Grand Selection, "Memories of Ireland."

- 9.42 p.m.—MR. P. W. PEARCE:
 Under the auspices of the Health Asso-
 ciation of Australasia:
 "Exercise and Digestion."
 9.52 p.m.—SENIA CHOSTIAKOFF, Tenor:
 "A Dream" (Barletti).
 "O Beautiful Night"—A Russian Folk
 Song.
 9.55 p.m.—"Argus" News Service, Road
 Notes; Meteorological Information.
 The Royal Automobile Club of Victoria's
 Safety Message for to-day is for MOTOR-
 ISTS:
 "Don't forget to look to the right and
 left before passing a railway crossing—
 you and your passengers will probably not
 remember much about the collision."
 10.10 p.m.—MOANA LEO DUO:
 "Hawaiian Melodies."
 10.17 p.m.—"CARDIGAN" Mr. H. A. Walter,
 sporting editor of "The Argus" and "Aus-
 tralian," will speak on "Australia's race."
 10.27 p.m.—COLLINGWOOD CITIZENS'
 BAND:
 "Lionelberry Air"—by request.
 "Even Alannah."
 10.37 p.m.—MADOLINE KNIGHT, Contralto:
 "The Harp that Once"
 "The Minstrel Boy."
 10.44 p.m.—International British Wire-
 less News from Rugby; Island Steamer
 Movements.
 10.49 p.m.—JOE ARONSON'S SYNCO-PAT-
 ING SYMPHONISTS:
 Selected.
 11.0 p.m.—OUR GREAT THOUGHT:
 "Oh, music! Thou art brighter than the re-
 sounding waves of Eternity broken to the
 weary heart of man as he stands upon the
 shore and longs to cross over, art thou the
 evening breeze of life or the morning air
 of the future."
 Make Victoria More Musical.
 Subscribe to the Million Shilling Fund.
 11.3 p.m.—JOE ARONSON AND HIS SYM-
 COPATING SYMPHONISTS:
 11.40 p.m.—GOD SAVE THE KING.

3AR, MELBOURNE

Associated Radio Co.
 Wave Length, 454 Metres.

Friday

- MORNING NEWS SESSION.
 11 a.m.—G.P.O. Clock says "Eleven."
 11.1 a.m.—This morning's columns, special
 and selective reports on the morning's
 work in the office. Prepared for 3AR by
 the news editors of "The Sporting Journal."
 11.6 a.m.—"Age" Sports column.
 11.7 a.m.—"Age" Stock Exchange report, market
 market.
 11.10 a.m.—"Age" market reports, farm,
 station and dairy produce, fish, fruit, vege-
 tables and other produce. Fish, fruit, vege-
 tables and other produce.
 11.22 a.m.—"Age" shipping records, ocean
 forecast.
 11.30 a.m.—Mail notices, express train infor-
 mation.
 11.35 a.m.—British Official wireless bulletin.
 11.40 a.m.—"Age" news column, exclusive to
 3AR.
 11.5 a.m.—First weather forecast.
 12 noon—G.P.O. Clock says "Twelve."

MIDDAY CONCERT SESSION.

- Programme selected by Mr. Douglas Milk,
 Conductor from Paratope House, 234
 Collins Street (by exclusive permission of
 With and Paine, Ltd.) the following
 having been programme on the Melbourne
 Paratope.
 12.1 p.m.—H. Maloney's Grandioso Quarta
 Band, Conductor Albert Gus Miller "181"
 Overture (Tschikowsky) in two parts.
 12.9 p.m.—Miss Florence Easton will sing
 solo:
 "Ten years back to Dixie" (White).
 "Lullaby" (Lullaby) in two parts (Hess).
 12.16 p.m.—Signor Manfredo, violin:
 Andantino from Ballet Music "Romantic"
 (Schubert) in movement.
 12.17 p.m.—Dennis Dancy Band:
 "Where do you work a Job?" (Warren).
 "Sam, the old American Men" (Doudman).

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 3000 Watts; Wave-
 length, 420 Metres.
 3YA, Christchurch, The Radio
 Broadcasting Co. of New
 Zealand, Ltd.
 Power 500 Watts; Wave-
 length, 305 Metres. Silent
 Night, Thursday.
 4YA, Dunedin, The Radio
 Broadcasting Co. of New
 Zealand, Ltd.
 Power 750 Watts; Wave-
 length, 463 Metres.

- 12.24 p.m.—Mr. Nick Lucas, The Crooning Troubadour:
"Underneath the stars with you."
"Romy Choccha" (Whitney).
- 12.30 p.m.—Mr. Lew White, Kory Theatre Organ:
"Charmaine" (Lew White).
"Doll Dance" (Lew White).
- 12.32 p.m.—The Merry-makers, Musical Comedy Company:
"Blue Skies" (Berlin).
"Mine" (Hanley).
- 12.45 p.m.—Victrol Mackey's Band:
Waiting for the Rainbow" (Tennent).
"Ca...Oat Parer" (Padilla).
- 12.48 p.m.—Miss Marie Brundall, contralto:
"The Banks of Allan Water" (John Scotch).
"Sink Red Sun" (del Biago).
- 12.54 p.m.—His Majesty's Grenadier Guards, Conductor: Lieut. Geo. Miller.
March, "Cavalry of the clouds" (Aford).
March, "March of Excelsior" (Hettler).
- 1 p.m.—Special "Snap" program report from Newmarket Stock Sales by courtesy of Macnamara's. If incomplete report will be repeated at 2.30 p.m.
- 1.1 p.m.—Close down.

MATINEE SESSION.

DANCE CONCERT.

- 1.30 p.m.—Studio Orchestra:
"In a Persian Garden" (Lisa Lehmann).
"Yashak-Lend" (Thurbal).
- 1.50 p.m.—Mr. Tom White, clarinet:
"Romance" (Wieniawski).
- 2.04 p.m.—Arysz Danconiana:
Fox-trot "I wonder how I look when I'm asleep" (Henderson).
Waltz, "Charmaine" (Pollack).
- 2.16 p.m.—Mr. Hubert Pflieger, violin:
"Hungarian Dance" (Brahms).
- 2.19 p.m.—Studio Orchestra:
"Three African Dances" (Rim.).
"La Feria" (Lacom).
- 2.30 p.m.—Health Week. Under the auspices of the Health Association of Australia. Matron Macleand, Twiddle Homes, Footscray, will speak on "Baby Welfare."
- 2.40 p.m.—Mr. Gilbert L. Cameron, entertainer:
"The Miner's Story."
- 2.48 p.m.—Arysz Danconiana:
Fox-trot "Down Kentucky Way" (Gibbons).
Waltz, "Yesterday" (White).
- 3.0 p.m.—G.P.O. Clock says "Four."
- 3.1 p.m.—Season's weather forecast.
- 3.5 p.m.—Announcements.
- 4.0 p.m.—Inveral talk, Miss Emily Noble. Looking demonstrator of the Metropolitan Ice Company will advise on "Small Dinners for Afternoon Tea."
- 4.21 p.m.—Miss Ethel Brazier, piano:
"Soring Song" (Mendelssohn) by request.
- 4.25 p.m.—Mr. Mr. Gilbert L. Cameron, entertainer:
"Buying a Tie."
- 4.33 p.m.—Studio Orchestra:
"Le Chant Des Boulevers" (Zamenick).
"Adieu" (Zamenick).
- 4.45 p.m.—Arysz Danconiana:
Fox-trot, "Moonbeam kiss her for me" (Wood).
- Fox-trot, "High St. Africa" (Lynton).
- 4.55 p.m.—Tonight's entertainment.
- 5 p.m.—G.P.O. Clock says "Five."

CHILDREN'S SESSION.

- 5.30 p.m.—The Farmers' Eve, transmitted from Kookaburra Gully, the BAK up-country Station. Jimmy Jackeroo and his pals, Sammy Sundown and his acrobatics, Tony Towne and his little gramophone, Yerra the white cockatoo, Darlie the black kelpie dog. All the fun of the farm for folk from five to fifty-five.

EVENING SESSION.

"BACK TO CLUNES."

- Studio Master: Mr. V. Upton-Brown. Personal Accompanist: Mr. Walter Quirk.
- 7.30 p.m.—Mr. George Heattie, Principal of the Dentie College of Physical Culture, Physical Fitness.
- 7.45 p.m.—Field Glasses' Special Review and tips for to-morrow's races.
- 7.50 p.m.—Newmarket Stock Sales.
- 7.55 p.m.—Week-end Tourist Guide.
- 8.0 p.m.—G.P.O. Clock Says "Eight."
"BACK TO CLUNES." To-night is an important one at CLUNES.

- 10.55 p.m.—Brunswick-Sewitts' Entertainment from the Studio.
- 10.55 p.m.—"As" News Bulletin, exclusive to S.A.R.
- 10.55 p.m.—To-morrow's Entertainment.
- 10.58 p.m.—Final Weather Forecast.
- 10.59 p.m.—Our Australian Good-night goode is taken from the poem, "Auld Lang Syne," by Will H. Ogilvie.
We have sung it over the last glass when the moon was breaking gray.
Hands crossed and double chorus in the old-time honoured way.
We have sung it in our exile till the heart-
leap and the croon
Brought us back the brown hills' whisper
and the nodding blue-bell's tune.
And the old, old loves are toasted in the
cups of brimming wine.
While our hearts beat out the mair to the
words of Auld Lang Syne.
- 11.0 p.m.—G.P.O. Clock Says "Eleven." God Save the King.

4QG, BRISBANE

Queensland Radio Service

Wave Length, 365 Metres.

Friday.

MIDDAY SESSION.

- 1 p.m.—Market reports; weather information; "The Daily Mail" and "The Daily Standard" news.
- 1.20 p.m.—Lunch hour made.
- 1.51 p.m.—Standard time signal.
- 2 p.m.—Close down.

AFTERNOON SESSION.

- 3.30 p.m.—A Programme of music from the Studio.
- 4.15 p.m.—"The Telegraph" news.
- 4.50 p.m.—Close down.

EARLY EVENING SESSION.

- 6 p.m.—"Daily Standard" news; weather information; announcements.
- 6.15 p.m.—Lecturette: A Law Talk: "Elements of the Law of Simple Contract" — Mr. L. E. Stanger.
- 6.30 p.m.—Bedtime stories by "The Sandman."
- 7 p.m.—Market reports; stock reports.
- 7.30 p.m.—Weather news; announcements; "Daily Standard" news.
- 7.48 p.m.—Standard time signal.

- 7.45 p.m.—A Queenslanders' impressions of rural Europe (second of a series). Mr. J. F. Reid (Editor, "Queensland Agricultural Journal").

NIGHT SESSION.

A RADIO PLAY "OUR RELATIONS"

(Written and Produced by Miss Thelma Champion.)

- "Our Relations" is a radio play in two scenes. In it the adventures of a normal family are depicted.
- 9.0 p.m.—Metropolitan weather forecast.
- The second portion of to-night's programme has been arranged by Mr. Arthur Shurman, I.A.B.
- Pianoforte: "Rigoletto Paraphrase" (Liszt).
Miss Pearl Burgess, I.A.B.
- Mezzo-soprano solo:
"Give Me Youth and a Day" (Drummond).
Miss Alice Pryor.
- Elocution:
"Queen Catherine's Defence" (Shakespeare).
Miss Laura Ludgate, A.T.O.L.

- Baritone solos:
(a) "Lola" (Lohr).
(b) "My Love, the Swallow" (Lohr).
Mr. Bryn Evans.

- Pianoforte:
"Sonata in E-Minor," 1st Movement (Grieg).
Miss Marie King, L.R.A.M.
- Soprano solo: "I Go My Way Singing" (Breville Smith).
Miss Iris Foote.

- Pianoforte:
"Study in G-Flat" (York Bowen).
Miss Pearl Burgess.
- Elocution:
"The Bride's First Visit to the Butcher" (Jones).
Miss Laura Ludgate.

- Pianoforte: "Cradle Song" (Brahms)—arr. Percy Grainger.
Miss Marie King.
- Baritone solo:
"Chorus Gentlemen" (Lohr).
Mr. Bryn Evans.

- Pianoforte solos:
(a) "Waltz in E-Major, E-Major and E-Minor" (Mozart).
(b) "Eccosante" (Hosoni-Beehween) (Brahms).
Mr. Arthur Shurman.
- 10.30 p.m.—"Daily Mail" news; sporting news.
Close down.

5CL, ADELAIDE

Central Broadcasters, Ltd.

Wave Length, 395 Metres.

Friday.

MORNING SESSION.

12 noon to 2 p.m.

AFTERNOON SESSION.

- 2 p.m.—G.P.O. Chimes.
- 3.1 p.m.—Orchestral selections from Maple Leaf Cafe.
- 3.45 p.m.—Selection on Studio Reproducer.
- 4 p.m.—G.P.O. Chimes.
- 4.1 p.m.—Orchestral selections from Arcadia Cafe, Vocalist, Miss Gwenn Collett.
- 4.55 p.m.—Station announcement.
- 5 p.m.—G.P.O. Chimes and close down.

EVENING SESSION.

- 6 p.m.—G.P.O. Chimes.
- 6.1 p.m.—Dinner Music from Coburn Gardens.
- 6.20 p.m.—Bedtime Stories.
- 7.25 p.m.—S. G. Ward and Co.'s Stock exchange report. Market reports.
- 7.35 p.m.—Windbags Sporting Service.
- 7.50 p.m.—"Willow" will talk on "Cricket."
- 8 p.m.—G.P.O. Chimes.
- 8.1 p.m.—Orchestral selections by Malcolm Reid and Co's Orchestra.
- 8.20 p.m.—Baritone Solo, Mr. Clem Crisp.
- 8.25 p.m.—Selection, Malcolm Reid's Orchestra.
- 8.30 p.m.—Baritone Solo, Mr. Clem Crisp.
- 8.47 p.m.—Selection, Malcolm Reid's Orchestra.
- 9 p.m.—G.P.O. Chimes.
- 9.1 p.m.—Weather report.
- 9.2 p.m.—Daigety's wheat report.

FOREIGN BROADCASTERS.

JOCK—Nagaya Radio Broadcasting Co., Nagaya, JAPAN: 260 metres, 1000 watts. (Announcement in English and Japanese).

JORK—Osaka Central Broadcasting Co., Osaka, JAPAN: 355 metres, 1000 watts. (Announcement in English and Japanese).

JOAK—Tokyo Broadcasting Co., Tokyo, JAPAN, 375 metres, 1000 watts. (Announcement in English and Japanese).

JFC—Batavische Radio Vereeniging, BATAVIA, 220 metres, 48 watts.

EZEM—Manila, PHILIPPINE ISLANDS: 413 metres, 1000 watts. (Announcement in English and Philippine).

EGU—"Honolulu Advertiser," Honolulu, HAWAII, 270 metres, 500 watts.

EGO—Oakland, CALIFORNIA: 351.2 metres, 3000 watts.

KFI—Los Angeles, CALIFORNIA, 467 metres, 5000 watts.

KOA—Denver, COLORADO: 322.4 metres, 5000 watts.

You can Recharge a Philco for a few pence.

- 9.4 p.m.—Selection, Messrs G. Smith & J. Williams.
- 9.10 p.m.—Dance Solo, Harold Durkin.
- 9.15 p.m.—Comedy, Wm. Runge.
- 9.18 p.m.—Dance Duo, Messrs G. Smith and J. Williams.
- 9.20 p.m.—Mr. H. J. Apps (Sings Dairy Instructional on "Hints on the Production of Clean Milk").
- 9.25 p.m.—Dance Solo, Harold Durkin.
- 9.30 p.m.—Comedy, Wm. Runge.
- 9.35 p.m.—P.O. Chimes.
- 9.41 p.m.—News Service.
- 10.10 p.m.—Windups Sporting Service.
- 10.15 p.m.—Dance Duo, Messrs G. Smith and J. Williams.
- 10.21 p.m.—Comedy, Wm. Runge.
- 10.26 p.m.—Relay from the Maçon De Danse, France.
- 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, 4250 Metres.

Friday.

- 12.30 p.m.—Tune In.
- 12.35 p.m.—Maritime, News and Chimes.
- 1 p.m.—Time signal from Perth Observatory.
- 1.10 p.m.—Weather notes, furnished by the Meteorological Bureau of Western Australia.
- 1.15 p.m.—Studio Gramophone, conducted by Mr. Val Smith.
- 2 p.m.—Close down.
- 2.50 p.m.—Tune In.
- 3.00 p.m.—Organ Music, relayed from the Grand Theatre, Murray Street.
- Vocal interludes from the Studio.
- 4.00 p.m.—Close down.
- 4.45 p.m.—Tune In.
- The Sporting Section is broadcast on 104.5 Metres as well as the usual wavelength.
- 6.00 p.m.—Musical evening for the kiddies, by Misses Henry and Duffy.
- 7.00 p.m.—Stocks, Markets, News.
- 7.45 p.m.—Reading talk by the Sporting Editor of "Truth" Newspaper Coy.
- 8 p.m.—Time signal from Perth Observatory.
- 8.1 p.m.—Weather notes.

POPULAR NIGHT

- 8.2 p.m.—Musical programme from the Studio, including vocal and instrumental articles, items by the Misses Sutton and Foley, instrumental duet of the vs. Karola.
- 9 p.m.—Talk: "Gardening Notes," by Mr. E. A. Hughes, representing Messrs. Dawson and Tarrision, Limited.
- 9.40 p.m.—Description of the Boxing Match by the Sporting Editor of "Truth" Newspaper Coy., relayed from the Unity Stadium, Fremantle; Messrs. Keys and Lewis.
- 10 p.m.—Late news items, by courtesy of "The Daily News" Newspaper Coy. Sings winter camp announcement.
- Weather Report and Forecast.
- 10.50 p.m.—Close down.

7ZL, HOBART

Tasmanian Broadcasters, Ltd.

Wave Length, 510 Metres.

Friday

MORNING SESSION.

- 11 a.m. to 12 noon.
- AFTERNOON SESSION.
- 3 p.m.—G.P.O. Clock chimes.
- 3.1 p.m.—Time in selection.
- 3.4 p.m.—Hobart Stock Exchange Quotations. Weather information.
- Home of interest-announcements.
- 3.15 p.m.—Studio selections by 7ZL studio.
- 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."
- 7.15 p.m.—Young Folks gardening chat by Mr. George Nation.
- NIGHT SESSION.
- 7.30 p.m.—FruitFandry and produce reports through the courtesy of Roberts and Co., Ltd. Hobart.
- 7.35 p.m.—Weekly gardening talk by Mr. George Nation—(then News)—(Landscape).
- 7.50 p.m.—"Mercury" special Tasmanian news service. Railway writing produce sales. Hobart Stock Exchange Quotations.
- 8 p.m.—G.P.O. Clock chimes.
- 8.1 p.m.—Society Bulletin, supplied by Mr. H. W. Newton of Hobart, Sports Depot, Hobart.
- 8.3 p.m.—Concert from the studio: Mrs. Eric Knight (soprano), Miss Bertha Marshall (soprano), Miss Ruth Pierce (soprano), Miss Edith Henry (soprano), Mr. Harry Swater (baritone), Mr. Victor Marshall (bass soloist), Mr. G. Reardon (baritone).
- 9.20 a.m.—Circles chat by "Mickoff."
- 9.40 p.m.—British Official Wireless news.
- 9.50 p.m.—"Mercury" special Interstate news service. Sings winter wireless range. Tasmanian District Weather reports. 9 p.m. Weather forecast. British announcements. Travellers' week-end information. National Anthem.

Saturday, Nov. 19 2FC, SYDNEY

EARLY MORNING SESSION—10 to 9 a.m.

- MORNING SESSION.
- 10 a.m.—"Big Ben" and programme announcements.
- 10.5 a.m.—Studio music.
- 10.55 p.m.—"Sydney Morning Herald" news service.
- 10.50 a.m.—Studio music.
- 10.55 a.m.—A talk by the 2FC Racing Commissioner.
- 10.45 a.m.—Studio music.
- 11 a.m.—"Big Ben" Studio music.
- 11.05 a.m.—A.P.A. and Router's Cable Service.
- 11.10 a.m.—Studio music.
- 11.15 a.m.—A Talk on Gardening, by Mr. C. J. Luckley ("Redfern").
- 11.30 a.m.—Close down.

MIDDAY SESSION.

- 12 noon—"Big Ben" and programme announcements.

Short Wave Broadcaster

Schedules and Wavelengths Subject to Change.

- EG-ENM, Gerald Marcess, Caterham, England, 24 and 25 metres (B.B.C. Programmes).
- EN-PCJJ, Philips' Experimental Station, Eindhoven, Holland, 20.2 metres (B.B.C. Programmes).
- NU-2XAF, General Electric Co., Schenectady, New York State, U.S.A., 25.7 metres (W.G.Y. Programmes).
- NU-2XAG, General Electric Co., Schenectady, New York State 14, 26 and 22 metres (W.G.Y. Programmes).
- NU-KDKA, Westinghouse Electric Co., Pittsburgh, Penn., U.S.A., 23.3 and 14 metres.
- NU-WLW, Crosley Radio Corporation, Cincinnati, Ohio, U.S.A., 32 metres.
- NU-2XAL, "Radio News," New York City, U.S.A., 39.91 metres (WRNY Programmes).
- FO-JH, Johannesburg Broadcasting Company, South Africa, 19 and 25 metres.

- 12.3 p.m.—Stock Exchange first call.
- 12.4 p.m.—Studio music.
- 12.25 p.m.—"Sydney Morning Herald" news service.
- 12.32 p.m.—Rushy wireless news.
- 12.35 p.m.—Studio music.
- NOTE: Local items will be given at Handicap will be described in the running by the 2FC Racing Commissioner.
- 1 p.m.—"Big Ben" Weather intelligence.
- 1.3 p.m.—"Evening News" midday news service.
- 1.20 p.m.—Studio music.
- NOTE: During racing intervals the following musical items will be given: From the Crystal Palace Theatre, George Street, Sydney: Orchestral Items. From the Studio: 5yd. Musical, special numbers, and other popular numbers.
- 4.30 p.m.—Complete resume of the day's sporting events.
- 5 p.m.—"Big Ben" Close down.

EARLY EVENING SESSION

- 4.40 p.m.—The Chimes of 2FC.
- 5.45 p.m.—The "Hello Man" talks to the children.
- 6.00 p.m.—Sings time for the young folks.
- 6.40 p.m.—Studio music.
- 7 p.m.—"Big Ben" Weather intelligence.
- 7.15 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 7.30 p.m.—Programme announcements.
- 7.30 p.m.—A Pleasure Recital by Mr. Howard Chapman.
- 7.50 p.m.—From the Museum Town Hall the arrangements with J. C. Williamson, Limited; The Comic Opera.

"PRINCESS CAPRICE"

- Produced by the Museum Medical Society and broadcast for the first time. Late weather forecast.
- 8.10 p.m.—From the studio: Re-appearance of "Ye Idiots" "Mindful Things" whose previous performance created so much enthusiasm. Musical numbers: 1. "Ye Idiots (not) Are We," The Company. 2. "Here comes the Chocolate Mager," Syd. Binyaw and Company. 3. "Mamma in the Cold, Cold Ground," The Company. 4. Song, "What a Mouth," The Serpents. 5. "Old Kentucky Home," The Company. 6. Recitation, "James's Bath," Ted Wright. 7. Song, "Jolly Good Fellow," Wally Baynes. 8. "De Old Bachelor," J. Cooke and Co. 9. Song, "Swing Low," Tom Dugmore. 10. Quartette, "The Four Walls." 11. Song, "Don't You Cry," Sam Lyons and Company. 12. "My Ducky Row," The Best and Company. 13. "Aspen in the Deep," H. Marshall and Company. 14. Song, "Rondal' Polka." 15. "Pennywhistle," The Company. 16. Song, "Mars," J. Maynard and Co. 17. "Shine Shine, Moon," The Company. 18. Chorus, "Ivory all Are We," The Company. 10.30 p.m.—From the Ambassadors: The Ambassadors Orchestra in popular dance music conducted, Mr. Al Hammett. 10.57 p.m.—From the Studio: Late news and announcements. 11 p.m.—"Big Ben."
- The Ambassadors Dance Orchestra, interspersed with musical items from the Studio, until 11.45 p.m.
- 11.45 p.m.—National Anthem.
- Close down.

2BL, SYDNEY

- Friday.
- EARLY MORNING SESSION.
- 7 a.m. to 9 a.m.

Burgess Went Over the Pole with Byrd.

MORNING SESSION.

- 11.4 a.m.—G.P.O. Clock and chimes.
- Medical programme from studio.
- 11.15 p.m.—Social notes by Mrs. Jordan.
- Talk on "Simple cooking for children" by Miss Jordan.

AFTERNOON SESSION.

- Having information broadcast immediately after each race by courtesy of the "Sun."
- 12 noon—G.P.O. Clock and chimes.
- Special Ocean Forecast and weather report.
- 12.15 p.m.—Musical programme from the studio.
- 12.30 p.m.—News from the "Sun."
- 12.35 p.m.—Sporting and athletic fixtures.
- 12.45 p.m.—Whats on at the Pictures and Theatre.
- 12.50 p.m.—Musical programme from the studio.
- 12.55 p.m.—News from "Sun."
- 1.00 p.m.—Having resume.
- 1.05 p.m.—Musical programme from the studio.
- 1.15 p.m.—G.P.O. Clock and chimes.
- Musical programme from the studio.
- 1.20 p.m.—Sporting talk and athletic fixtures for the day.
- 1.25 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.
- 1.35 p.m.—G.P.O. Clock and chimes.
- Having resume.
- 1.40 p.m.—Serial Story.
- 1.45 p.m.—Musical programme from the studio.
- 1.50 p.m.—G.P.O. Clock and chimes.
- News from the "Sun."
- During the afternoon sporting information interspersed with musical items will be broadcast by courtesy of the "Sun."
- 1.55 p.m.—G.P.O. Clock and chimes.
- Having resume.
- 1.58 p.m.—Close down.

EARLY EVENING SESSION.

- 6.42 p.m.—G.P.O. Clock and chimes.
- Children session.
- 7.30 p.m.—Musical programme from the studio.
- 7.45 p.m.—Round of the week sporting.
- 7.50 p.m.—Country News from the "Sun."
- 8 p.m.—G.P.O. Clock and chimes.
- Broadcasters' Vocal Chorus.
- 8.5 p.m.—Broadcasters' instrumental Trio.
- Ernie Blair, violin.
- Bryce Carter, cello.
- G. Venn Barnett, piano.
- 8.15 p.m.—Dance music by Cyril Kaye and The Wentworth Cafe Orchestra.
- 8.45 p.m.—The Thomas Kibbells' Ball Trio.
- Spectators of Hawaiian and jazz melodies played solo guitars and ukuleles.
- 8.55 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra.
- 9.00 p.m.—Broadcasting Musical comedy show under the direction of Mr. Harry Court.
- 9.05 p.m.—Review of the week results, grey-hatted country, Epping.
- 9.15 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra.
- 9.55 p.m.—Review of following day's programme.
- 10 p.m.—G.P.O. Clock and chimes.
- 10.1 p.m.—Selections by Broadcasters' Instrumental Trio.
- 10.15 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra. During the intervals between the dances, news items from the Star's news service will be read from the studio.
- 12 p.m.—G.P.O. Clock and chimes.
- National Anthem.

2 UW, SYDNEY

Saturday.

EVENING SESSION.

- 7 p.m.—"Banana" selection.
- 7.4 p.m.—Where to go.
- 7.10 p.m.—Pianoforte selection: "The Arcadians."
- 7.18 p.m.—Soprano selection.
- 7.28 p.m.—Victor Catly, violin solo: Selected.
- 7.32 p.m.—Miss Joan Edwards, soprano: "Violent" (Wright).

- 7.37 p.m.—Studio selections.
- 7.47 p.m.—Harry Cavill, baritone: Selected.
- 7.51 p.m.—Miss Ray O'Brien, soprano: Selected.
- 7.55 p.m.—Miss Dora Fitzmaurice, cello: Selected.
- 8.2 p.m.—Pianoforte solo, Professor C. Sauer: Selected.
- 8.7 p.m.—Miss Phyllis Packer, mezzo soprano: Selected.
- 8.11 p.m.—Harry Attkick: Jazz instrumental.
- 8.21 p.m.—Lucy Cavill, baritone: Selected.
- 8.27 p.m.—Victor Catly, violin solo: Selected.
- 8.32 p.m.—Joan Edwards, soprano: (a) "Serenade" (Schubert); (b) "Musette's Valse Song" (Phuoc); (c) "Miss Dora Fitzmaurice, cello: Selected.
- 8.43 p.m.—Miss Phyllis Packer, mezzo soprano: Selected.
- 8.51 p.m.—Pianoforte solo, Professor C. Sauer: Selected.
- 8.55 p.m.—Weather forecast and news bulletins.
- 9 p.m.—Harry Attkick: Jazz instrumental.
- 9.10 p.m.—Studio selections.
- 9.25 p.m.—Review of forward programme.
- 9.40 p.m.—God Save the King.

3LO, MELBOURNE.

Saturday.

MORNING SESSION.

- 11 a.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "In the Grand Garden" (Laguna); "No Blue in the Mountains" (Ruska); "So Blue" (De Siva).
- 11.10 a.m.—YRITA LANDAU, Vocalist: "We Want Art Proud of It" (Conductor Study); "Art's Jim" (Character Study).
- 11.20 a.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "Blue Skies" (Berlin); "Town of Tomorrow" (Green); "Kiss Lee" (Ald).
- 11.30 a.m.—MARIE LAWTON, soprano: "Michelle's Song from Carmen"; "Love is Just a Little Bit of Heaven" (Bart).

Short Wave Broadcasters

Schedules and Wavelengths Subject to Change.

- 2NM, Gerald Mackenzie, Caterham, England, 25 and 54 metres (B.B.C. Programme).
- PJLJ, Philips' Experimental Station, Riddoway, Holland, 70.2 metres (B.B.C. Programme).
- 2XAF, General Electric Co., Schenectady, New York State, U.S.A., 32.27 metres (W.G.Y. Programme).
- 2XAG, General Electric Co., Schenectady, New York State, 14.20 and 92 metres (W.G.Y. Programme).
- KDKA, Westinghouse Electric Co., Pittsburgh, Penn., U.S.A., 93.5, 74 and 42 metres.
- WLW, Cradley Radio Corporation, Cincinnati, Ohio, U.S.A., 52 metres.
- 2XAL, "Radio News," New York City, U.S.A., 30.05 metres (WRNY Programme).
- JU, Johannesburg Broadcasting Company, South Africa, 25 and 33 metres.
- 4SW, Marconi Company, Chelmsford, England, 34 metres.
- RPN, Moscow, U.S.S.R., 23 metres.

- 11.37 a.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "Ah! She is" (Yellen); "Gay World, Crazy Town" (Yellen); "Heresy" (Trunk); "Picking a Check, Chick, Chicker" (Tulnik).
- 11.47 a.m.—Under the auspices of the Health Association of Australasia MR. J. H. LOCK will speak on: "Food and Health."
- 1.05 a.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "Love is Just a Little Bit of Heaven" (Bryan).

MIDDAY SESSION.

- 12 noon—MELBOURNE OBSERVATORY TIME SIGNAL.
- 12.1 p.m.—Aerial prices received by The Australia Mines and Metals Association from the London Stock Exchange this day.
- British official Wireless news from Rugby, Reuters and The Australian News Association cables: "Argus" news service.
- Description of the Progress of the Dunlop Grand Prix.
- 12.30 p.m.—STUDIO QUARTETTE: Selection: "Our Miss Gaiety."
- 12.35 p.m.—MADOLINE KNIGHT, contralto: "Love's Old Sweet Song."
- 12.45 p.m.—Stock Exchange information.
- 12.50 p.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "She's Got It" (Lavin); "Stepping Stone" (Alton); "Winey" (Newson); "Just a Whisk" (Ogert).
- 12.55 p.m.—DOROTHY ROEBURGH, soprano: "Selection" (Grieg).
- 1 p.m.—MELBOURNE OBSERVATORY TIME SIGNAL.
- 1.05 p.m.—GHOSTIAKOFF, tenor: "The Star of the North" (Glinka); "Stenka Razin" (Russian Folk Song).
- 1.15 p.m.—Meteorological information. Shipping information. Weather forecast for Victoria, Tasmania, South Australia and New South Wales. Ocean forecast. Flight reports for Victoria, Tasmania, South Australia and New South Wales.
- 1.15 p.m.—STUDIO QUARTETTE: Selection: "Followers."
- 1.22 p.m.—MADOLINE KNIGHT, contralto: "Will He Come?" "Thinking of Thee."
- 1.30 p.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "Zig Zag" (Piano Solo (Bism)); "Golden Gate" (Lavin); "Kristin in the Spring" (Rais).
- 1.40 p.m.—SENIA GHOSTIAKOFF, tenor: "In Peaceful and Serene" (G. Similes, Ukla); Serenade, "A Night of Love" (Alton).
- 1.47 p.m.—JOE ARONSON AND HIS SYNGOPATING SYMPHONISTS: "Reneville Moon" (Lawrence); "Oullette" (Kahn); "The Hanging Gardens of Babylon" (Carlo); "Sally" (Rais).
- 1.52 p.m.—Description of Cricket Match, Richmond v. Fitzroy, at Richmond, 12 Mr. RUD McGRIGOR.
- 1.55 p.m.—Description of Two-Year-Old Handicap, 4 furlongs, EPSOM RACES, by "Muskiet" of "The Sporting Globe."
- 2.00 p.m.—Close down.
- 2.05 p.m.—Description of Open Handicap, 4 furlongs, EPSOM RACES, by "Muskiet" of "The Sporting Globe."
- 2.10 p.m.—Description of Great Handicap, 4 furlongs, EPSOM RACES, by "Muskiet" of "The Sporting Globe."
- 2.15 p.m.—Close down.

- During the afternoon Progress Reports of the Dunlop Grand Prix, N. Simons, Warrnambool to Melbourne, will be given during the afternoon, and actual finish, transmitted from the Melbourne Show Grounds.
- 2 p.m.—MELBOURNE OBSERVATORY TIME SIGNAL.
- STUDIO QUARTETTE: Selection: "Madame Pompadour."
- 2.15 p.m.—Description of Beach Sweepstakes, 2 miles 15 furlongs, EPSOM RACES, by "Muskiet" of "The Sporting Globe."
- 2.20 p.m.—Description of Cricket Match, Richmond v. Fitzroy, at Richmond, by Mr. RUD McGRIGOR.

- 2.25 p.m.—Description of Cricket Match, Richmond v. Fitzroy, at Richmond, by Mr. RUD McGRIGOR.

- 3.00 p.m.—STUDIO QUARTETTE:
Singing, "The Goodbye Soldier,"
"The Belle of New York."
- 3.45 p.m.—Description of Epson Handicap,
EPSON RACES, 1 1/4 miles, by "Musket," of
"The Sporting Globe."
- 3.50 p.m.—STUDIO QUARTETTE:
Selection, "The Street Singer,"
"Our Mrs. Filizov."
- 4.15 p.m.—Description of Cricket Match, Rich-
mond v. Fitzroy, at Richmond, by Mr. Rod
McGregor.
- 4.45 p.m.—Description of Welter Handicap, 1
mile, EPSON RACES, by "Musket," of
"The Sporting Globe."
- 5.00 p.m.—STUDIO QUARTETTE:
Selection, "The Princess."
- 5.15 p.m.—Under the auspices of the Health
Association of Australia, MRS. HERBERT
BIDDOKES will speak on:
"The Value of Playgrounds."
- 5.45 p.m.—Description of Jumpers' Flat Race,
1 1/4 miles, EPSON RACES, by "Musket," of
"The Sporting Globe."
- 6.15 p.m.—"Herald" news service. Stock ex-
change information.
- 6.5 p.m.—Description of Cricket Match, Rich-
mond v. Fitzroy, at Richmond, by Mr. Rod
McGregor.
- 6.20 p.m.—Close down.
- During the afternoon the finish of the Dunlop
Grand Prix will be transmitted from
the Melbourne Show Ground.

EARLY EVENING SESSION.

- 8.00 p.m.—Sporting results.
- 8.10 p.m.—Answers to letters and birthday
greetings by "LITTLE MISS KOOKA-
BERRA."
- 8.19 p.m.—CAPTAIN DONALD MACLEAN:
"Pirates and More Pirates."
- 8.30 p.m.—ELSIE BRADSHAW:
"Songs at the Piano."
- 8.40 p.m.—"Herald" news service. Weather
reports. Shipping movements.
- 8.45 p.m.—Stock Exchange information.
- 8.50 p.m.—Market reports.
- 8.55 p.m.—River reports.
- 9.05 p.m.—Newmarket sheep sales by the
Associated Stock and Station Agents,
fourth street, Melbourne. Market reports
by the Victorian Froresters' Co., Ltd. Poul-
try, grain, straw, jute, dairy produce, pota-
tes and onions.
- 9.16 p.m.—Market reports of fruit by the
Victorian Fruitgrowers' Association. Retail
prices. Wholesale prices of fruit by the
Wholesale Fruit Merchants' Association.

EVENING SESSION.

- 7.15 p.m.—Under the auspices of the Royal
Life Saving Society of Victoria, Head
Centre, MR. A. P. NEWBY will speak on:
"Life Saving Methods."
- 7.30 p.m.—CAPTIVATING CAMPER-
DOWN, by Mr. A. J. Thomas, President
of Camperdown Traders' Association,
transmitted from Camperdown.
- 7.45 p.m.—MR. E. E. PEACOCK:
"Australian Native Plants that have be-
come Weeds."
- 7.53 p.m.—The winner of the £1000 Dunlop
Grand Prix will speak on his experiences.
- 8 p.m.—CARNIVAL CONCERT from Show
grounds, Camperdown—Introductory re-
marks by Mr. H. J. Armstrong, secretary
Traders' Carnival.
- 8.3 p.m.—Orchestral Selection by Carnival
Orchestra:
"When the One You Love Loves You."
- 8.7 p.m.—MISSES WILSON and FULLAR-
FOXY:
Duet, "In the Sprigatine."
- 8.11 p.m.—MR. HARRY TAYLOR, baritone:
"Dorcen."
- 8.16 p.m.—SYD FANE, comedian:
"Mary Ann."
"O'Reilly."
- 8.27 p.m.—TRADESS' MALE QUARTETTE:
"Off in the Silly Night."
- 8.35 p.m.—"Little Tommy."
- 8.45 p.m.—MISS WILSON, soprano:
"Pal of My Dreams."
- 8.51 p.m.—MR. GEORGE HORSBURGH, barito-
ne:
"Young Tom of Devon."

- 8.54 p.m.—CAMPERDOWN QUARTETTE:
"Buddy Falls the Shadow of Evening."
- 8.59 p.m.—CAMPERDOWN CARNIVAL OR-
CHESTRA:
"Roll 'em Girls!"
"Lesage."
- 9.45 p.m.—A special programme has been
arranged.
- 10.15 p.m.—JOE ARONSON AND HIS
SYNCOPIATING SYMPHONISTS:
"When will we meet again" (Fiorito).
"Jack in the Box" (Nichols).
"Shalimar" (Nichols).
- 10.25 p.m.—The Royal Automobile Club of
Victoria's Safety Message for to-day is for
PEDIESTRIANS:
"Don't hold conversations or read news-
papers in the middle of a thoroughfare—
it is more shady and less dangerous on
the pavement."

THE HEALTH MESSAGE for to-day is:

"The greatest asset of a nation is the
child, and the greatest asset of the child is
sound health."

Announcements. Island shipping move-
ments.

- 10.30 p.m.—JOE ARONSON AND HIS
SYNCOPIATING SYMPHONISTS:
"Marie, Marie" (Brown).
"Just a Rose in Old Killarney" (Swan).
"Julius—You Wonderful Boy" (Meyer).
10.40 p.m.—Late sporting results.
- 10.52 p.m.—SHEILA CHRISTAKOFF, tenor:
"Song of the Volga Boatman," arr. V.
Chavlin.
"Ayulito," from "Pagliacci" (Leoncavallo).
- 11 p.m.—DR. GREAT THOUGHT:
"Music is the outflow of a noble soul, care-
less whether it arises in the presence of
hundreds or for itself in solitude, but al-
ways the expression of an elevated mind."
—Robt. Schumann.
- Make Victoria More Musical. Subscribe to
the Million Shilling Fund.
- 11.1 p.m.—JOE ARONSON AND HIS
SYNCOPIATING SYMPHONISTS:
11.40 a.m.—GOD SAVE THE KING.

3LO MELBOURNE.

Owing to unforeseen circum-
stances the balance of 3LO pro-
gramme for this week had to
be omitted. The complete pro-
grammes will appear next week
as usual.

3AR, MELBOURNE

Saturday.

- MOINING NEWS SESSION.
Studio Master, Mr. Allan Lorraine.
11.0 a.m.—G.P.O. Clock Says "Eleven."
11.1 a.m.—Special Report, Weather Forecast,
Anticipations and Latest Minute Information
for the Espoir Race Meeting, by our special
adviser, G.F.R.
- 11.16 a.m.—Stock Exchange Report, Metal
Market.
- 11.18 a.m.—"Age" Market Report, Farm and
Station Produce, Fruit, Fish, Vegetables,
etc.
- 11.22 a.m.—"Age" Shipping Reports.
- 11.30 a.m.—Mail Notices: Express Train In-
formation.
- 11.35 a.m.—British Official Wireless Bulletin.
11.40 a.m.—"Age" News Service, exclusive
to 3AR.
- 11.50 a.m.—First Weather Forecast.
- 12.0 noon—G.P.O. Clock Says "Twelve."

MIDDAY CONCERT SESSION.

Programme Selector, Mr. Sydney Mills,
Transmitted from Pacificgrove House, 282
Collins Street (by exclusive permission of
Wills and Paton, Ltd.), the following
luncheon-hour programme on the Hranewick
Piano.

- 12.1 p.m.—British Broadcasters' Symphony
Orchestra, Conductor, Mr. Percy Pitt.
Selection from "H. Transgrove" (Verdi), in
two parts.
- 12.8 p.m.—Mr. Frank Mann, Tenor:
"A Lull in Spain" (Lombardi).
"Just an Ivy-covered Shack" (Rupp).
- 12.15 p.m.—Moran and Mack, "The Two
Black Crowns," two comedians in a
comedy sketch in two parts.
- 12.21 p.m.—Mr. Harold Williams, Baritone:
"Hooten" (Richard).
"Lullaby" (Gieseler-Bennett).
- 12.27 p.m.—Fiscobilly Revels Band:
"Perhaps You'll Think of Me" (Stone).
"Back the Mocking Bird" (Simp).
12.33 p.m.—Harry Reisman, Comedian:
"My Idea of Heaven."
- 12.36 p.m.—New Midnight Follies Band, Con-
ductor, Mr. Jay Whidden:
"Sheila O'Hara" (R. Hill).
"Shepherd of the Hills" (Nichols), by
request.
- 12.42 p.m.—Miss Vaughn de Leoth and Mr.
Frank Larriss:
Comedy Duet:
"Water O'Toole" (Bennett).
"Fifty Million Frenchmen Can't be Wrong"
(Baskin).
- 12.48 p.m.—Mr. Phil O'Hman and Victor
Arden, Piano Duo:
"Waltzes of the Old Day."
"Operatic Favorites."
- 12.54 p.m.—Walter B. Rogers' Brass Band:
March, "Forward" (Meinrath).
"Welcome to Our City" (Meinrath).
- 1.0 p.m.—Close down.

NATIVE SESSION.

ORCHESTRAL CONCERT.
Studio Master, Mr. V. Upton-Brown.
Personal Accompanist, Miss Edith Brearley.
Orchestral Director, Mr. Ronald Brearley.
Sports results. During the afternoon the
results of the Epson Races will be broad-
cast immediately each race is run.

- 1.30 p.m.—Epson Races: Result of Two-Year-
Old Handicap.
- 2.31 p.m.—Studio Orchestras:
"Petite Suite Moderne" (Roux).
"Fiorito Ballet" (Hummel).
2.46 p.m.—Studio Orchestras, Soprano:
"Sinfonata" (Malison).
"I Looked Into Your Garden" (Woods).
- 2.49 p.m.—Epson Races: Result of Dyon
Handicap.
- 2.54 p.m.—Studio Orchestra:
"Mimosa-Epilog" (Fovras).
"Oriental" (Lut).
- 3.10 p.m.—Mr. Ronald Brearley, Cello:
"On Wings of Song" (Mendelssohn).
- 3.14 p.m.—Studio Orchestras:
"The Savoy March Medley" (Sovaris).
"Carnegie del Villino" (Schubert).
"Andante Cantabile" (Tschikowsky).
- 3.19 p.m.—Epson Races: Result of Brush
Handicap.
- 3.24 p.m.—Health Week: Under the auspices
of the Health Association of Australia,
Miss Barling will speak on Mental
Hygiene.
- 3.49 p.m.—Miss Vera Thomson, Soprano:
"The Jewel Song" from "Frua" (Gounod).
"The First Cavalry" (Hummel).
- 3.50 p.m.—Studio Orchestras:
"Am Das Meer" (MacDowall).
- 3.59 p.m.—Epson Races: Result of Epson
Handicap.
- 3.52 p.m.—Mr. Harold Williams, Baritone:
"A King's Man" (Muller).
"Dorcen" (Phillips).
- 4.0 p.m.—G.P.O. Clock Says "Four."
4.1 p.m.—Studio Orchestras:
"An Hillside Melody" (Phillips).
"Pas des Fleurs" (Debussy).
- 4.16 p.m.—Epson Races: Result of Welter
Handicap.
- 4.26 p.m.—Mr. Herbert Pettifer, Violin:
"Zingaresco" (Baron).
- 4.31 p.m.—Studio Orchestras:
"Reverie" (Vielstueck).
"Minnesota" (Dan Prevedo).
- 4.38 p.m.—Mr. Harold Williams, Baritone:
"The Three of Brussels."
"Wimpen, Oh! Wimpen" (Phillips), by
request.
- 4.46 p.m.—Studio Orchestras:
"Suite From India" (Fohr).
- 4.48 p.m.—Epson Races: Result of Jumpy's
Flat.

8.45 p.m.—To-night's Entertainment.

9.0 p.m.—G.P.O. Clock Says "Five"; Close Down.

CHILDREN'S SESSION.

9.30 p.m.—Uncle Mac's Entertainment. An hour of music, song and story for all Uncle Mac's nephews and nieces all over Australia and New Zealand. Uncle Mac's Surprise Packet, full of fun and fancy, not forgetting Blue Bell.

EVENING SESSION.

DANCE CONCERT NIGHT.

Studio Master: Mr. Stephen MacDonald.
9.30 p.m.—Evergreen's Garden: Special Week-end Talk by Mr. W. B. Warner, president of the Nurseriesmen's and Seedsmen's Association of Victoria.
9.45 p.m.—Newmarket Cattle Sales; Notices; Today's Sporting Results.

9.45 p.m.—G.P.O. Clock Says "Eight."

9.45 p.m.—Dance Session. Transmitted from Leggett's Ballroom, Prahran.

(Orchestral Conductor, Mr. Harry Nangle.)

9.50 p.m.—Health Week. Under the auspices of the Health Association of Australia.

Mr. A. E. Lovell, F.P.C.V., will speak on "Our Little Known, Wonderful, and Most Powerful Machine."

9.45 p.m.—Dance Session.

9.45 p.m.—Mr. Tom Foster, Tenor:

"The Little Irish Girl" (Lohr);

"Maire, My Girl" (Aitken);

9.45 p.m.—Mr. K. McCauley will speak on "Water and its uses in facts as a curative power for diseases."

9.45 p.m.—Mr. Tom Foster, Tenor:

"The Lilac Tree" (Gartian).

9.50 p.m.—Dance Session.

9.45 p.m.—Miss Beattie Mackinnon, Niece Soprano:

"Down in the Forest" (Landon Ronald);

"Alas, Those Times," from the Opera

Mariana (Wallner).

9.52 p.m.—Dance Session.

10.0 p.m.—G.P.O. Clock Says "Ten."

10.1 p.m.—Semi-Final Weather Forecast.

10.2 p.m.—Brunswickville Entertainment.

During the Dance Interval at the Ballroom.

10.15 p.m.—Dance Session.

10.25 p.m.—Miss Beattie Mackinnon, Niece Soprano:

"Here's to Love" from the "Sunshine Girl" (Rubin).

"The Prima Donna" (Roebel).

10.35 p.m.—Dance Session.

10.35 p.m.—To-morrow's Entertainment.

10.58 p.m.—Final Weather Forecast.

10.59 p.m.—An Australian Goodnight Quote is taken from the Poem, "Kings of the North," by Will H. Ogilvie.

We are heathen who worship an idol

We keep for our pleasure and pride,

We are slaves of the saddle and bridle,

Yet kings of the earth when we ride!

11.0 p.m.—G.P.O. Clock Says "Eleven"; God Save the King.

4QG, BRISBANE.

Saturday.

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

8.30 p.m.—A Matinee for Little Listeners by "Miss Waratah".

8.40 p.m.—Close down.

EARLY EVENING SESSION.

8.30 p.m.—Bedtime stories by "Uncle Ben".

7.15 p.m.—Racing results.

7.30 p.m.—Today's sporting news, described.

7.45 p.m.—Sailing Notes by Mr. F. Smith.

7.15 p.m.—Lecture: "A Gardening Talk: 'Curranthems'—by 'Tecoma'."

NIGHT SESSION.

8 p.m.—FROM THE STUDIO:

Contralto solo:

"Sings My Mother Taught Me" (Derevak);

Miss Clarice Cox.

Baritone solo:

"The Secret Major on Parade" (Longstaff);

Mr. F. C. Lloyd.

Organ solo: Selected.

Mrs. Hilda Woolmer.

Mesocoprano solo: "Love's Valley" (Lockton).

Miss R. G. Husband.

Baritone solo: "To-morrow" (Kael).

Mr. A. N. Falk.

Contralto solo's: "Summer Night" (Goring Thomas);

Miss Clarice Cox.

Baritone solo: "The Ringers" (Lohr);

Mr. P. C. Lord.

Ten Minutes of Humour:

Early and Percy (of Bedtime Story Fame).

Mesocoprano solo: "Until" (Sanderson);

Miss R. G. Husband.

Baritone solo: "The Dearest Lover" (White);

Mr. A. N. Falk.

9 p.m.—Metropolitan Weather forecast.

During the second portion of to-night's programme descriptions of Speedway events will be broadcast from Davies Park, and these will be interspersed with dance music from Lennon's ballroom.

FROM THE STUDIO—

10.30 p.m.—"The Sunday Mail" news; weather news.

Close down.

5CL, ADELAIDE.

Saturday.

MORNING SESSION.

11 p.m.—G.P.O. Chimes.

11.1 p.m.—"Advertiser" News service and special information.

11.25 p.m.—Musical items on Studio Reproduser.

12 noon.—G.P.O. Chimes, and close down.

AFTERNOON SESSION.

3 p.m.—G.P.O. Chimes.

3.1 p.m.—Sporting results, interspersed with Musical numbers on the Studio Reproduser.

5.15 p.m.—Close down.

EVENING SESSION.

6 p.m.—G.P.O. Chimes.

6.1 p.m.—Dinner Music from Covent Garden Restaurant.

8.0 a.m.—Bedtime stories.

7.25 p.m.—Market reports.

7.35 p.m.—Interstate and S.A. Sporting results.

8 p.m.—G.P.O. Chimes.

8.1 p.m.—Relay from Henley Beach Rotunda.

March, Holdens Silver Band.

8.8 p.m.—Tenor solo, Fred Williamson.

8.10 p.m.—Soprano, Holdens Silver Band.

8.20 p.m.—Tenor solo, Fred Williamson.

8.25 p.m.—Mandolin solo, Signor Angelo Demodena.

8.30 p.m.—Talk by Rev. G. E. Hale, P.A.

8.40 p.m.—Selection, Holdens Silver Band.

8.50 p.m.—Soprano solo, Miss M. Wilson.

9.1 p.m.—Daily's wheat report.

9.5 p.m.—Mandolin solo.

Signor Angelo Demodena.

9.10 p.m.—Soprano solo, Miss M. Wilson.

9.15 p.m.—Selection, Holdens Silver Band.

9.25 p.m.—Baritone solo, Harry Warden.

9.35 p.m.—Selection, Holdens Silver Band.

9.40 p.m.—Mandolin solo, Signor Angelo Demodena.

9.45 p.m.—Baritone solo, Harry Warden.

9.50 p.m.—Selection, Holdens Silver Band.

9.55 p.m.—March, Holdens Silver Band.

10 p.m.—G.P.O. Chimes.

10.15 p.m.—Sporting results.

10.25 p.m.—Relay from the Maison de dance Glenelg.

11.15 p.m.—National anthem and close down.

Saturday.

12 noon.—Tune in.

12.5 p.m.—Musical programme, including Piano-forte selections by Miss Evelyn White, A.R.C.M.

12.47 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.—Close down.

3.30 p.m.—Tune in.

SPORTING SESSION.

3.35 p.m.—Racing and Cricket Results.

Vocal and instrumental interludes from the Studio.

6.30 p.m.—Close down.

6.45 p.m.—Tune in.

The Evening Session is broadcast on 104.5 Metres as well as the usual wavelength.

6.50 p.m.—Birthday Greetings for the Kiddies, by Uncle Ben.

7.10 p.m.—Sporting results.

7.20 p.m.—Markets, News, and Cables.

7.45 p.m.—Talk.

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

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

MUSIC AND SONG.

8.3 p.m.—Musical programme from the Studio, including vocal and instrumental arias.

Orchestral music, played by Hoyt's Orchestra (consisting of 15 instrumentalists), conducted by Mr. Harold Tharston, relayed from Hoyt's Regent Theatre, William Street.

Old-time Dance Music, relayed from the Unity Theatre, Beaufort Street.

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

Ships within range announcement.

Weather Report and Forecast.

Sports results.

10.30 p.m.—Close down.

7ZL, HOBART

Saturday

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

1 p.m.—G.P.O. Clock chimes.

8.1 p.m.—Musical items from the studio interspersed with reports of Racing and Sporting events.

1.30 p.m.—Close down.

EARLY EVENING SESSION.

6.30 p.m.—"Uncle Peter" talks to the children.

7 p.m.—"Uncle Peter" half hour.

NIGHT SESSION.

7.30 p.m.—Musical selection.

7.56 p.m.—Talk by Mr. G. R. Davis, Secretary, Hobart Development League; Subject, "Tasmania as a Tourist Resort."

7.50 p.m.—"Mercury" special Tasmanian stock service. Stock Exchange quotations.

Weather information. Sporting results.

8 p.m.—G.P.O. Clock chimes.

8.1 p.m.—Broadcast by direct wire from Imperial Hotel, Hobart, dance numbers by Mrs. Sheppard's dance trio.

9 p.m.—Nature Lesson Book opened by Mr. F. G. Roberts, Tasmanian Nystropophy.

10.20 p.m.—British Official Wireless News. Ships within wireless range. Weather information. Station announcements. National Anthem.

Sunday, Nov. 20 2FC, SYDNEY

MORNING SESSION.

10.55 a.m.—Programme announcements.

11 a.m.—"Big Ben."

From St. Andrew's Cathedral, Sydney: "The Morning Service."

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

12.30 p.m.—Close down.

AFTERNOON SESSION.

2.55 p.m.—Announcements.

Let Your Battery Save Your Purse; Philco.

The Genie in the Sun-Ray carton



IT was a rare and envied thing in the days of old to be able to conjure up a genie capable of laying the world at your feet. To possess a magic lamp or a magic ring was the ambition of emperors.

TO-DAY we can all have our genie. In every ORMOND Sun-Ray Carton is a genie who at the lightest bidding will place the world at your disposal. A form of the famous ORMOND Glow Mirror Dial—made your wish is granted. There's no "missing" with an ORMOND Condenser. No tiresome twiddling to and fro until you almost get raw shins. You're there—in a twinkling of an eye.

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John Arnold, Box B 71,
Degraves Street, Melbourne.

2BL, SYDNEY

6.35 a.m.—"Big Ben"	10.35 a.m.—Organ solo;
From the Lyceum Hall, Pitt Street, Sydney.	"Drink to me only with thine eyes" (Calcutti).
Published Sunday Afternoon Service, arranged by the Central Methodist Mission and conducted by the Rev. F. H. Raward, recently returned from a world tour. Subject: "The Wit, Wisdom and Wonder of a World Tour."	10.45 a.m.—Pianoforte solo;
Music by the G.M.M. Quartette.	"Barcarolle" from Tales of Hoffman.
Note: The Central Methodist Mission Quartette comprising: Miss Daisy Toole (soprano), Miss Barbara Bellrose (contralto), Mr. Frank Forrest (tenor), Mr. Herman Treanor (bass).	10.45 a.m.—Soprano solo;
4.15 p.m.—From the Band, Rotunda, Manly Beach.	"There is a green hill" (Gounod).
The Manly Municipal Band; James Phelan, conductor.	10.52 a.m.—Choir and symphony orchestra accompaniment.
Note: During the afternoon ZFC will endeavour to pick up and relay items from the short wave transmission programme, transmitted by Gerald Maroney, London, including numbers by the well-known Australian soprano, Ross Alba.	"Swan Chorus" from Lobengrin.
6 p.m.—"Big Ben" Close down.	10.52 a.m.—Violin solo.

EVENING SESSION.

- 6.15 p.m.—"Big Ben" and announcements.
- 6.30 p.m.—The Local Instrumental Quartette.
- 6.45 p.m.—EMIL RUSSELLCH (baritone) and Mrs. H. B. Allard (soprano):
 1. Baritone solo:
 - (a) "But You and I" (Chabani).
 - (b) "Harvest" (Del Ring).
 2. Soprano solo.
 3. "Ave Maria" (Schubert).
 4. "Barcarolle" (Chopin).
 5. "The Rose Tree" (Lambert).
 6. "The Rose Tree" (Lambert).
 7. "I Know a Hill" (Whitely).
- 6.50 p.m.—Madame Evelyn Marks:
 1. A Talk on Music and Education.
 2. "The Lullaby" (instrumental quartette).
 3. "The Lullaby" (instrumental quartette).
 4. "The Lullaby" (instrumental quartette).
 5. "The Lullaby" (instrumental quartette).
 6. Baritone solo.
 7. "Come Again" (Desland).
 8. "Four-leaf Clover" (Willeby).
7. Soprano solo:
 - (a) "Spring low, sweet chariot" (Hurligh).
 - (b) "A Shepherd's Creed Song" (Sommerfeld).
8. Duets:
 - (a) "The Day is Done" (Loher).
 - (b) Baritone solo.
 - (c) "O That We Two were Mating" (Noble).
 - (d) "The Rose Tree" (Rondel).
 - (e) "The Rose Tree" (Rondel).
 - (f) "Christmas Song" (Cornelius).

- 7.30 p.m.—The Local Instrumental Quartette.
- 7.45 p.m.—From St. James' Church of Kensington, King Street, Sydney: Evening Service, Preacher, Rev. P. A. Mickett, M.A.
- 8.20 p.m.—From the Band, Rotunda, Manly Beach.
- The Manly Municipal Band, Conductor, James Phelan.
- 8.30 p.m.—From the Studio:
 1. "The Rose Tree" (instrumental quartette).
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- 10.25 p.m.—National Anthem. Close down.

Sunday.

- 10.45 a.m.—G.P.O. Clock and chimes.
- 10.48 p.m.—Special news service.
- 11 a.m.—G.P.O. Clock and chimes.
- 11.15 a.m.—Service broadcast from Newtown Congregational Church, Address by the Rev. Mervyn Massey.
- 12.20 p.m.—Close down.
- 2 p.m.—G.P.O. Clock and chimes.
- 2.15 p.m.—Special session for children.
- 2.25 p.m.—A recital by courtesy of the D.M.V. Gramophone Co.
 - Gold Friday Music from Parsifal (Wagner), played by symphony orchestra.
 - Selection, "Rigoletto" (Verdi) played by the Cecchetti and the Cecchetti Orchestra.
 - Antonio Scotti, baritone:
 - "Prologo" from Pacifico (Leoncavallo).
 - "Marie Mari" (Di Capua).
 - Fritz Kreisler, violinist:
 - "May Queen" (Chopin).
 - "Violence Melody" (Gartner-Kreisler).
 - Symphony Orchestra:
 - "Pomp and Circumstances" (Elgar).
- 3.45 p.m.—Information service.
- 4 p.m.—G.P.O. Clock and chimes. Close down.
- 4.05 p.m.—G.P.O. Clock and chimes.
- 4.31 p.m.—Sunday afternoon service from Central Methodist Church Mission House.
- 4.50 p.m.—From the studio: Bible Class conducted by Mr. W. C. Gray (Bread).
- 5 p.m.—G.P.O. Clock and chimes. Close down.
- 5.45 p.m.—G.P.O. Clock and chimes. Children's Service from studio.
- 6.05 p.m.—Organ and Choral recital from Congregational Church, Newtown.
- 7 p.m.—Evening Service from Newtown Congregational Church, Address by Rev. Mervyn Massey.
- 8.10 p.m.—Broadcasters Instrumental Trio:
 - Miss Dulcie Blair, violin.
 - Mr. Bryce Carter, cello.
 - Mr. G. Vern Barnett, piano.
- 8.40 p.m.—Mr. Frank Hatheway (dramatic recitation).
- 8.47 p.m.—Mr. Gordon Rodda (piano solo).
- 8.54 p.m.—Miss Lesmore, Gotech, announcements.
- Scene from Hurdal and Grot (Hammerstein).
- 8.58 p.m.—Weather report and forecast by courtesy of Mr. C. J. Meyer.
- 9 p.m.—G.P.O. Clock and chimes.
- 9.15 p.m.—Mr. Bryce Carter (cello solo).
- 9.25 p.m.—Mr. Alfred Wilmore, tenor.
- 9.32 p.m.—Broadcasters Instrumental Trio.
- 9.42 p.m.—Mr. Frank Hatheway (dramatic recitation).
- 9.49 p.m.—Mr. Gordon Rodda (piano solo).
- 9.56 p.m.—Mr. Bryce Carter (cello solo).
- 10 p.m.—"The Love Letter" from Tristan and Isolde (Wagner). Presented by Miss Lecturer Gotech and Mr. Alfred Wilmore.
- 10.05 p.m.—Resume of following day's programme announcements.
- 10.10 p.m.—Broadcasters Instrumental Trio.
- 10.11 p.m.—National Anthem.

2GB, SYDNEY

Sunday.

- MORNING SESSION.
- 10 a.m.—Service from St. Alban's Liberal Catholic Church, Beffers.
- 12 noon—Close down.
- EVENING SESSION.
- 6.45 p.m.—Music from Studio.
- 7 p.m.—Lecture from Atlix Hall.
- 8 p.m.—Vocal Recital by the Students from the Clement Hocking Studio.
- 8.40 p.m.—Address.
- 9 p.m.—Close down.

2 UW, SYDNEY

Sunday

- MORNING SESSION.
- 10.15 a.m.—Orchestral selection: "Ave Maria," from "Trovatore."
- 10.34 a.m.—Tenor solo: "If I might only come to you" (Squire).

NIGHT SESSION.

- 7 p.m.—Selections from the Studio.
- 8 p.m.—Len Moran and his "Blackbirds" Orchestral Selection.
- 8.10 p.m.—Golden Duo, steel guitars.
- 8.16 p.m.—Selections from Studio.
- 8.24 p.m.—Golden Duo, steel guitars.
- 8.32 p.m.—Len Moran and his "Blackbirds" Orchestral Selections.
- 8.42 p.m.—Selections from Studio.
- 8.50 p.m.—Len Moran and his "Blackbirds" Orchestral Selections.
- 9 p.m.—Golden Duo, steel guitars.
- 9.1 p.m.—Studio selection.
- 9.28 p.m.—Resume of forward programme.
- 9.30 p.m.—God Save the King.

3AR, MELBOURNE

Sunday.

- MORNING CHURCH SERVICE.
- 11 a.m.—Morning service from Independent Unit, Collins Street, Melbourne, Minister, Rev. J. Ernest James, B.D.

AFTERNOON SESSION.

- STUDIO CONCERT.
- Studio Master: Mr. Stephen MacDonaid. Personal Accompanist: Mrs. Percy Blundell.
- 1 p.m.—Miss Veronica Cox, soprano:
 - "The Shepherd" (Dunhill).
 - "Sing, Sing, Blackbird" (Phillips).
- 1.7 p.m.—Mr. Percy Blundell, tenor:
 - "Songs of Araby" (Clay).
 - "My Old Spinn" (Squire).
- 2.11 p.m.—Miss Etta Cox, contralto:
 - "Mountain Lovers" (Squire), by request.
 - "Thank God for a Card" (Del Ring).
- 2.21 p.m.—Mr. Hamilton Estman, violin:
 - "The Old Refrain" (Kreisler).
 - "Liebesrad" (Kreisler).
- 2.28 p.m.—Miss Bevis Mackinnon, mezzo:
 - "Ave Maria" (Hoban).
 - "Oh, Lovely Night" (Rondel).
- 2.50 p.m.—Mr. Samuel Gardener, baritone:
 - "Beyond the Sunset" (Tourn).
 - "Little White Rose" (Cadmans).
- 3.42 p.m.—Mrs. Percy Blundell, piano:
 - "Nocturne" (Chopin).
 - "Minuet" (Beethoven).

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Type	H.F.	L.F.	D06 H.F.	D06 Det.	D06 L.F.	MD06	D3 H.F.
Filament voltage.	3.2—3.8	3.2—3.8	3.0	2.5—3.0	3.0	3.0	1.0—2.0
Filament current, amps.	0.6	0.6	.06	.06	.06	.06	0.3
Anode voltage . .	30—90	30—90	50—125	20—100	30—100	30—100	30—125
Total emission, m/s.	5	5	8.0	8.0	8.0	8.0	8.0
Impedance, ohms.	90,000	30,000	60,000	17,000	17,000	17,000	60,000
Purpose	Radio, also Resistance Coupling	Audio	Radio, also Resistance Coupling	Detector	Audio	Audio	Radio, also Resistance Coupling
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Type	D3 Det.	D3 L.F.	MD3	DFA0	DFA1	DFA3	DFA4
Filament voltage.	1.6—2.0	1.8—2.0	1.8—2.0	3.5	5.5	5.5—6.0	5.5
Filament current, amps.	0.3	0.3	0.3	0.35	0.2	.06	0.2
Anode voltage . .	20—100	30—100	30—100	50—100	50—100	50—100	75—125
Total emission, m/s.	8	8.0	8.0	20.0	25.0	15.0	15.0
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Mullard

THE MASTER VALVE

- 1.49 p.m.—Miss Veronice Cox, soprano:
"Sonnata" (Gounod).
"The Cloths of Heaven" (Dunhill).
1.56 p.m.—Mr. Percy Cople, baritone:
"Star of the South" (Loehr).
"The Canadian Lament" (El Riego).
1.57 p.m.—Miss Ethie Cox, contralto:
"L'Alcazar" (L. Tschann).
"I heard you go by" (Wood).
1.58 p.m.—Mr. Hamilton Bateman, violin:
"L'Alcazar" (Kreutzer).
"Minuet" (Paderewski).
1.57 p.m.—Miss Housie Mackintosh, mezzo:
"Near My God to Thee" (Garey).
"Danny Boy" (Wesley).
2.24 p.m.—Mr. Basil Gardiner, baritone.
"I heard you Singing" (Garcia).
"Fidel Noy" (MacFadyen).
2.30 p.m.—Close down.

CHILDREN'S SESSION

- 6 p.m.—Special children's hour, conducted by Mrs. Rabbit—stories, letters, holiday greetings, and special Sunday songs and hymns, by Mrs. Rabbit's own choir of little and big brother and sister Mrs. Rabbit.

EVENING LUNCH SESSION.

- 7 p.m.—Special Church Service, and Sacred Cantata, transmitted from the Cairns Memorial Church, East Melbourne.

EVENING CONCERT SESSION.

- Studio Master: Mr. Stephen Macdonald.
8.30 p.m.—Benzwick Panatone entertainment—Broadcast from Panatone House, 222 Collins Street, Melbourne, by exclusive permission of Willie and Patrici, Ltd., under the direction of the Panatone Programme Committee. Chairman, Mr. W. D. S. Taylor; selector, Mr. Sydney Mills; direction, Mr. Thomas Nixon.
8.41 p.m.—His Majesty's Grenadier Guards Band—Conductor, Lieut. George Miller:
Overture, "Figue Dance" (Von Suppe).
8.45 p.m.—Mr. Leopold Godowsky, International pianist:
Two Mazurkas by Chopinade, "Searf Dance" (The Flapper).
8.46 p.m.—Mr. John Thomas, baritone:
"Falling in love with you" (McLure).
8.42 p.m.—Signor Giuseppe Di Silva, tello:
"The Broken Melody" (van Hecke).
8.45 p.m.—Cleveland Orchestra—Conductor, M. Nikolai Sokoloff:
"Songs of India" (Himsy-Korzhakov).
8.44 p.m.—Miss Elizabeth Bethberg, soprano:
"Believe me if all those endearing young charms" (Moore).
8.51 p.m.—Columbia Trio—Violin, flute, harp:
"Off in the Sully Night" (Moore).
8.51 p.m.—Mr. Mario Chamlee, tenor:
"Ain't from Fra Diavolo" (Auber).
8.57 p.m.—Celtic Orchestra—Conductor, Mr. J. H. Squire:
"Spring Songs" (Mendelssohn), by request.
9 p.m.—Mr. Branahy Williams, English soloist:
"The Green Eye of the Yellow God" (Millon Hayes).
9.1 p.m.—Mr. Edgar Cople, baritone:
"Little Grey Home in the West" (Loehr).
9.1 p.m.—New York Philharmonic Orchestra:
Scherzo from Midsummer Night's Dream music (Mendelssohn).
9.11 p.m.—Miss Edna Thomas, the southern singer:
Nerro Spirituals (arr. Galde).
9.14 p.m.—Mr. John Thomas, baritone:
"Calling me back to you" (Sover).
9.17 p.m.—Signor Giuseppe Di Silva, tello:
"The Blind Boy" (Chirgwin).
9.20 p.m.—Cleveland Orchestra—Conductor, M. Nikolai Sokoloff:
"Sleeping Beauty" (Tchaikowsky).
9.23 p.m.—Miss Elizabeth Bethberg, soprano:
"Home, Sweet Home" (Bishop), by request.
9.26 p.m.—Columbia Trio—Violin, flute, harp:
"Simple Aves" (Thome).
9.29 p.m.—Mr. Mario Chamlee, tenor:
"Then you'll remember me" (Lafte), by request.

- 9.32 p.m.—Mr. Branahy Williams, English soloist:
Character sketch: "The Caretaker" (Winter).
9.36 p.m.—Mr. Edgar Cople, baritone:
"Where my caravan has rested" (Loehr).
9.39 p.m.—New York Philharmonic Orchestra:
The famous music by Mendelssohn, depicting the coming of dawn after a still, dark night in the woods. The awakening of the fairy Titania in "A Midsummer Night's Dream" by Shakespeare.
9.43 p.m.—Miss Edna Thomas, the southern singer:
"Carry me back to old Virginia" (by request).
9.48 p.m.—His Majesty's Grenadier Guards' Band, Conductor, Lieut. George Miller:
Overture, "Zampa" (Herold), by request.
9.56 p.m.—"The Age" news bulletin, exclusive 15 M.R.
9.58 p.m.—Tomorrow's entertainment.
10 p.m.—Weather forecast.
10.1 p.m.—Our Australian Good-night song is from the poem "Australia," by Donald O'Reilly:
"What can we give in return
For her beauty and mystery,
Of flowering forest, infinite plain,
Deep sky and distant mountain-chain,
And her triumphant sea,
Thundering old songs of liberty."
10.2 p.m.—God Save the King.

4QG, BRISBANE.

Sunday.

- MORNING SESSION.
10.45 a.m.—FROM ANN STREET PRESBY-
CHURCH:
Organ Recital by Mr. Archie Day, F.T.C.L.;
Hymology 484; Invocation and Lord's Prayer; Invitation to Worship; Hymn 2, "Father of Heaven, Whose Love is Profound," Intimations and Offertory; Anthem, "The King of Love My Shepherd is" (Shelley); solo, "Hold Thun My Hand" (Gounod); Miss Gladys Wainwright; Children's Story; Children's Hymn 844, "There's a Friend for Little Children"; Scriptures and Prayer; Hymn 44, "From Greenland's Joy Mountains"; Sermon by Rev. James Cook, B.A., B.D.; Hymn 324, "O Lord, of Heaven and Earth and Sea"; Benediction; Prelude by Mr. Archie Day.
Close down.

- AFTERNOON SESSION.
3.5 p.m.—FROM THE BOTANIC
GARDENS—Band Concert.
4.30 p.m.—Close down.

- NIGHT SESSION.
8.55 p.m.—FROM ANN STREET PRESBY-
TERIAN CHURCH:
Organ Recital by Mr. Archie Day, F.T.C.L.;
Children's Hymn 569, "The World Looks Very Beautiful"; Children's Story; Children's Hymn 324, "Around the Throne of God in Heaven."
7.30 p.m.—Doxology 434, "Praise God from Whom All Blessings Flow"; Invocation and Lord's Prayer"; Invitation to Worship"; Hymn 325, "As I'ven, 'Ere the Sun Was Set"; Intimations and Offertory; Anthem, "The Heavens are Telling" (Hapsis); violin solo, Mr. Eric Haver; Vocal Duet by Miss Beatrice Pugh and Mr. Fred. Homry, "What Have I to do with Thee, O My God" (Elphig); Prayer; Hymn 442, "From the Eastern Mountains"; Sermon by the Rev. James Cook, B.A., B.D.; Hymn 364, "The Day is Past and Over"; Benediction; Venner Hymn; Organ Postlude by Mr. Archie Day.

BAND CONCERT.

- At the conclusion of the Church service the concert by the Brisbane Municipal Concert Band will be relayed from Wickham Park.
8.30 a.m.—FROM WICKHAM PARK:
Band Concert.
9.30 p.m.—Close down.

5CL, ADELAIDE

Sunday.

- MORNING SESSION.
11 a.m.—G.P.O. Chimes.
11.1 a.m.—Divine Service from the Book of Forebaptism Church, Presbytery, Rev. Keith Steward.
12.10 p.m. (approx.)—Close down.
AFTERNOON SESSION.
2 p.m.—G.P.O. Chimes.
2.1 p.m.—Sacred Concert.
4 p.m. (approx.)—Close down.
EVENING SESSION.
6.30 p.m.—Chimes.
8.31 p.m.—Sunday Service for the Children.
9 p.m.—Divine Service from St. Peter's Cathedral.
8.10 p.m. (approx.)—Sacred Concert.
9 p.m.—Selections by Holden's Silver Band, from the Huxley Beach Bandstand.
9.30 p.m.—Tells by Mr. P. H. Nichols.
9.45 p.m.—Monday's programme: Weather report.
National Anthem. Close down.

6WF, PERTH.

Sunday.

- 10.45 a.m.—Tune in.
11 a.m.—Morning Service, relayed from the Wesley Church, Hay Street, Perth.
Preacher, Rev. J. W. Grove, M.A., LL.B.
12.14 p.m.—Close down.
2.30 p.m.—Tune in.

FROM THE STUDIO.

- 8.35 p.m.—Musical programme, including vocal soloing artists.
4.30 p.m.—Close down.
7 p.m.—Tune in.
The Evening Session is broadcast on 101.6 Metres as well as the usual wavelength.
7.5 p.m.—Children's bedtime stories.
7.30 p.m.—Evening Service, relayed from St. George's Cathedral, Cathedral Avenue, Perth.

A RELAY.

- 8.45 p.m.—After-church service, relayed from Queen's Rail, William Street.
Community singing, solo vocal items and instrumental numbers.

7ZL, HOBART

Sunday.

- MORNING SESSION.
11 a.m.—Special Children's Service from Good-mens Church, Hobart.
12.15 p.m.—Close down.
AFTERNOON SESSION.
3.30 p.m.—Pleasant Sunday afternoon concert from the studio.
4.30 p.m.—Close down.
EARLY EVENING SESSION.
6.50 p.m.—Children's Corner with the "Sunday Lady."
NIGHT SESSION.
7 p.m.—Church service from Memorial Church, Hobart; Preacher, Rev. Arthur C. Nelson; Anthem, "Gounod's Motet," "Gallis" by the Choir Soloist, Miss Daisy Wallers, L.A.E. At conclusion of Church Service Band Concert from St. David's Park in studio concert.
9.40 p.m.—"Mercury" special; Intimate news service. British Official Wireless News. Ships within wireless range 9 a.m. Weather forecasts. Station announcements.
National Anthem.

Monday, Nov. 21
2FC, SYDNEY.

- EARLY MORNING SESSION.
7 a.m.—"Big Ben" and announcements.
7.5 a.m.—Studio music.

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7.15 a.m.—Country Section: Official weather forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, mail services.
 7.25 a.m.—Investment market, mining shares market, metal fluctuations.
 7.35 a.m.—Wood sales, breadstuffs markets, interstate 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 by the BBC Commissioner.
 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.—Daily minute Racing information by the BBC Commissioner.
 10.45 a.m.—Studio music.
 11 a.m.—"Big Ben" studio music.
 11.5 a.m.—A.P.A. and Hunter's Cable Services.
 11.40 a.m.—Close down.

MIDDAY SESSION.

12 noon—"Big Ben" and announcements.
 12.15 p.m.—Stock Exchange, first call.
 12.3 p.m.—Weather forecast, rainfall.
 12.4 p.m.—Studio music.
 12.45 p.m.—Summary of "Sydney Morning Herald" news service.
 12.55 p.m.—Rugby wireless news.
 12.55 p.m.—Studio music.
 12.55 p.m.—Lewin Berrick, baritone: "Anchored."
 12.55 p.m.—The Oak Hall Instrumental Trio.
 12.55 p.m.—Studio music.
 1 p.m.—"Big Ben." Weather intelligence.
 1.2 p.m.—"Evening News" midday news service.
 1.25 p.m.—The Oak Hall Instrumental Trio.
 1.30 p.m.—Stock Exchange, second call.
 1.35 p.m.—Studio music.
 1.40 p.m.—Lewin Berrick, baritone: "O' Star Divin'" (Wagner).
 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 p.m.—"Big Ben" and announcements.
 3.7 p.m.—Daisy Sweet, contralto.
 3.7 p.m.—Studio music.
 3.15 p.m.—Helen Booth, soprano.
 3.15 p.m.—A.P.A. reading.
 3.25 p.m.—Dora Hestlow, soprano: "The Nightingale and the Rose" (Thompson).
 3.30 p.m.—Studio music.
 3.40 p.m.—From Farmer's Tea Rooms: Jeanette Kooze, contralto: "Charismatic Child" (German).
 3.45 a.m.—The Oak Hall Instrumental Trio (Gardner, Mr. Horace Keane).
 3.55 p.m.—From the Studio: Esther Herford, soprano: "When the Almond Blossoms Fall" (Woodford-Finden).
 4 p.m.—From Farmer's Tea Rooms: Irene Dunham, soprano.
 4.05 p.m.—The Oak Hall Instrumental Trio.
 4.15 p.m.—From the Studio: Daisy Sweet, contralto.
 4.20 p.m.—From Farmer's Tea Rooms: Jeanette Kooze, contralto: "The Bird in the Hand Again" (Wildey).
 4.25 p.m.—The Oak Hall Instrumental Trio.
 4.30 p.m.—From the Studio: Diana Booth, soprano.
 4.40 p.m.—From Farmer's Tea Rooms: Irene Dunham, soprano.
 4.45 p.m.—From the Studio: Stock Exchange, third call.
 4.47 p.m.—Doris Hestlow, soprano.
 4.50 p.m.—Studio music.
 4.54 p.m.—Esther Herford, soprano: "Annie Laurie" (Old Scotch Air).
 4.57 p.m.—Studio music.
 5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

5.45 p.m.—The choice of IFC.
 5.45 p.m.—The "Hello Man" talks to the children.

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.—Dulgey'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.—Colman and Harris, instrumentalists:
 (a) "Ain't no maybe" (Kahn and Donaldson).
 (b) "Don't you understand" (Forster).
 (c) "Because I love you" (Irving Berlin).
 7.54 p.m.—Ellis Price, entertainer: "Mrs. Smythe Brown buys a book" (Constanduros).
 8 p.m.—"Big Ben."
 8 p.m.—From the Baptist Hall, Ultimeo: The Sydney Harmonic Society's Choir, conducted by Mr. W. Bourne: Part-song, "Hunting Song" (Benedict). Ladies' chorus, "The Lord is my Shepherd" (Schubert) (request).
 Musical: "All creatures now are merry minded" (Bennet).

8.15 p.m.—From the Studio: Colman and Harris, instrumentalists:
 (a) "Until" (Anderson).
 (b) "Thinking of You" (Donaldson and Ash).
 (c) "Serenade" (Schubert).
 (d) "He's the Last Word" (Kahn and Donaldson).
 8.24 p.m.—Jessie Shmidt, contralto, from S.I.O. Melbourne:
 (a) "The Bitterness of Love" (Dunn).
 (b) "Elegie" (Massenet).
 8.30 p.m.—Ellis Price, entertainer: "Jim" (Maidin) (Beloe).
 8.35 p.m.—From the Baptist Hall, Ultimeo: The Sydney Harmonic Choir, conducted by Mr. W. Bourne: Part-song, "Hymn to Music" (Buck) (by request).
 Male chorus:
 (a) "The Gondoliers' Serenade" (Schubert).
 (b) "Comrades in Arms" (Adam).

8.5 p.m.—From the Studio: Ellis Price, entertainer: "Major Foot" (Squires).
 9 p.m.—"Big Ben." Late weather forecast.
 9.2 p.m.—From the Maccas Town Hall: Act Two of the Musical Comedy, "PRINCESS CAPRICE," broadcast for the first time (by permission of J. C. Williamson, Limited), and produced by the Newmans Musical Society.

10.10 p.m.—From the Studio: Harrison White, banjo solo: "Humoresque" (Dvorak).
 10.15 p.m.—Cyril Coy and his Dance Band.
 10.22 p.m.—From the Newmans Town Hall: Act Three of the Musical Comedy, "PRINCESS CAPRICE," Produced by the Newmans Musical Society.
 10.30 p.m.—From the Studio: Harrison White, banjo solo: Fox trots:
 (a) "As long as I have you" (Simon).
 (b) "Ukulele Dream Girl" (Lew).
 (c) "If all depends on you" (Donaldson).
 10.35 p.m.—Late news and announcements.
 11 p.m.—"Big Ben."
 Cyril Coy and his Dance Band.
 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 chimes.
 Musical programme from the studio.
 10.40 a.m.—News from the "Daily Telegraph" pictorial.
 11 a.m.—Musical programme from the Studio.

11 a.m.—G.P.O. Clock and Chimes. Announcement.
 11.5 a.m.—Musical programme from studio.
 11.10 a.m.—Women's Session: Miss Green Varley will talk on "Asthetics." Society Notes and Replies to correspondents by Mrs. Jordan and talk on "Preservers."
 12 noon—G.P.O. Clock and chimes.
 Special Ocean forecast and weather report.
 12.3 p.m.—Musical programme from the studio.
 12.5 p.m.—Information: Mails, Shipping and port directory.
 12.12 p.m.—Boats in call by wireless.
 12.14 p.m.—Fish Market report.
 12.16 p.m.—Vegetable market report.
 12.18 p.m.—Dairy and Farm Produce Market Report.
 12.22 p.m.—FORAGE Market report.
 12.24 p.m.—Fish Market report.
 12.26 p.m.—Rabbit Market report.
 12.30 p.m.—Stock Exchange report.
 12.5 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 p.m.—G.P.O. Clock and chimes. Close down.

AFTERNOON SESSION.

Variety 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.
 3.10 p.m.—News from the "Sun."
 3.20 p.m.—Musical programme from the studio.
 3.30 p.m.—News from the "Sun."
 3.40 p.m.—The Dugowan Dance Band.
 4 p.m.—G.P.O. Clock and chimes.
 News from the "Sun."
 4.8 p.m.—Musical programme from the studio.
 4.10 p.m.—Serial Story entitled: "Made of Money" (Peter B. Kyne).
 4.30 p.m.—The Dugowan Dance Band.
 4.50 p.m.—News from the "Sun."
 4.55 p.m.—Resume of night's programme.
 4.55 p.m.—Racing results.
 4.55 p.m.—Special Ocean Forecast.
 5 p.m.—G.P.O. Clock and chimes. Close Down.
 EARLY EVENING SESSION.
 5.45 p.m.—Children's Session.
 6.30 p.m.—Musical programme.

SPECIAL COUNTRY SESSION.

7 p.m.—G.P.O. Clock and chimes.
 A.M.L. and F. Co.'s report.
 Weather report.
 Producer's Distributing Co's reports.
 Stock Exchange report.
 Grain and Fodder report ("Sun").
 Dairy Produce report.
 7.15 p.m.—Country news from the "Sun."
 7.30 p.m.—Talk on "The Motor Car" by Mr. Martin.

EVENING SESSION.

8 p.m.—G.P.O. Clock and Chimes.
 Broadcaster's Topical Chorus.
 Act I Hour Programme, presented by Linda and Mrs. Wilson.
 8.3 p.m.—Hives' Banjo Troupe.
 8.10 p.m.—Miss Grace Saville (contralto).
 8.17 p.m.—Violin solos, by Henri de Lizar.
 8.24 p.m.—St. Andrew's Male Quartette (Portsmouth).
 8.31 p.m.—May Kelleit and Jack Trent (entertainers): Humorous interlude.
 8.46 p.m.—Newtown Band, broadcasting from the Industrial Hall, Newtown.
 9.6 p.m.—Weather Report and Forecast by courtesy of Mr. C. Maree, Government Meteorologist.
 9.7 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra, transmitting from the Ballroom of the Wentworth.
 0.17 p.m.—From the Studio: Hives' Banjo Band.
 9.24 p.m.—From the Industrial Hall, Newtown: Selections by the Newtown Band.
 9.44 p.m.—Dance Music by Cyril Kaye and the Wentworth Cafe Orchestra.
 9.54 p.m.—From the Studio: Miss Grace Saville.
 10.1 p.m.—Violin Solos, by Henri de Lizar.
 10.8 p.m.—St. Andrew's Male Quartette.
 10.15 p.m.—Dance Music, by Cyril Kaye and the Wentworth Cafe Orchestra.



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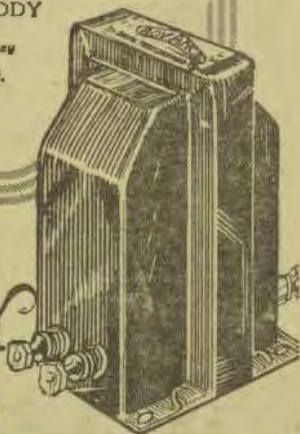
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10.25 p.m.—Resume of following day's programme.
 10.30 p.m.—Dance music, by Cyril Kaye and the Westworth Cafe Orchestra. During intervals between dances new items, by courtesy of the "Star" Newspapers will be read from the Studio.
 11.30 p.m.—G.P.O. Clock and Chimes. National Anthem.

2GB, SYDNEY

Monday.

MORNING SESSION.

9 a.m.—Music.
 9.5 a.m.—"Cherico" Talk.
 0.18 a.m.—Music.
 0.29 a.m.—Psychological Class.
 0.40 a.m.—Music.
 0.45 a.m.—Health and Diet.
 10 a.m.—Close down.

AFTERNOON SESSION.

3.10 p.m.—Music.
 3.37 p.m.—Address.
 3.53 p.m.—Music.
 4 p.m.—Address: Mr. A. E. Bennett.
 4.22 p.m.—Music.
 4.50 p.m.—Close down.

NIGHT SESSION.

7 p.m.—Music.
 7.5 p.m.—Address by Ms. R. E. Bennett.
 7.15 p.m.—Music.
 7.50 p.m.—Address by Mr. J. K. Powell.
 7.50 p.m.—Music.
 7.55 p.m.—Recital by Mr. Heath Burdock.
 8.55 p.m.—Instrumental Trio:
 Dan Scully, Murielle Lang, Ada Brock.
 9.3 p.m.—Address by Dr. P. H. Ross.
 9.30 p.m.—Songs by Mr. F. J. Todd.
 9.55 p.m.—Instrumental Quartet.
 Dan Scully, L. Brewer, Murielle Lang, Ada Brock.
 8.59 p.m.—Songs.
 9 p.m.—Address by Rev. E. B. S. Hammond:
 "Mending Broken Men."
 9.15 p.m.—Violin solos.
 9.25 p.m.—Violin Duets with piano accompaniment.
 Dan Scully, L. Brewer, Ada Brock.
 9.33 p.m.—Songs.
 9.41 p.m.—Violin solos: Dan Scully.
 9.55 p.m.—"Cherico" talk.
 10 p.m.—Close down.

2 UW, SYDNEY

Monday.

MORNING SESSION.

9.0 a.m.—News: Shipping; Mails; Studio Items.
 9.45 a.m.—Women's Session.
 9.50 a.m.—Resume of Forward Programme.
 10.0 a.m.—Close Down.
 12.15 p.m.—Special Employees' Luncheon Session.
 12.45 p.m.—Close Down.

AFTERNOON SESSION.

2.0 p.m.—Studio Items.
 2.10 p.m.—Resume of Forward Programme.
 2.50 p.m.—Close Down.

EVENING SESSION.

8.0 p.m.—Studio Items.
 8.50 p.m.—Resume of Forward Programme.
 9.0 p.m.—Close Down.

NIGHT SESSION.

7.4 p.m.—"Senora" Selection.
 7.40 p.m.—Where to Go.
 7.10 p.m.—Pianoforte Solo: Selected.
 7.14 p.m.—Senora Selection.
 7.18 p.m.—Miss Ethne Davison, Elocutionist:
 "The Song of the Marshes Place."
 7.25 p.m.—Miss Phyllis Packer, Mezzo Soprano: Selected.
 7.30 p.m.—Miss Ruth Bardeu, Contralto:
 "Robin Adair."
 7.35 p.m.—Mr. Minder, Whistler: Selected.
 7.50 p.m.—Miss Jean Edwards, Soprano:
 "Allah"—Persian.

7.45 p.m.—Madame Josephine Fellows, Contralto: Selected.
 7.45 p.m.—Pianoforte Solo, Madame Arline Sauer: Selected.
 7.55 p.m.—George Livermore, Baritone:
 Selected.

7.57 p.m.—G. H. Hooper, Flautist:
 "La Felona." Gradier.
 8.1 p.m.—Photographic Chat: Messrs. Harrington.
 8.3 p.m.—Miss Phyllis Packer, Mezzo Soprano, Selected.

8.7 p.m.—Miss Ethne Davison, Elocutionist:
 "The Lady Who Cries."
 8.18 p.m.—Miss Ruth Bardeu, Contralto:
 "Kilbarney" (Ballad).

8.19 p.m.—Madame Lillian May, Soprano:
 "Sink Red Sun" (Del Reigo).
 8.25 p.m.—Mr. Minder, Whistler: Selected.
 8.27 p.m.—Madame Josephine Fellows, Contralto: Selected.

8.28 p.m.—George Livermore, Baritone:
 Selected.
 8.36 p.m.—G. H. Hooper, Flautist:
 "O Star of Eve" (Wagner).

8.41 p.m.—Miss Jean Edwards, Soprano:
 "Sometimes at Dawn" (Hadyn-Wood).
 8.46 p.m.—Madame Josephine Fellows, Contralto: Selected.

8.50 p.m.—Pianoforte Solo, Professor C. Seger: Selected.
 8.55 p.m.—Madame Lillian May, Soprano:
 "Christmas" (Percy).

9.0 p.m.—Weather Forecast and News Bulletin.
 9.5 p.m.—Selections from the Studio.
 9.55 p.m.—Resume of Forward Programme.

10.0 p.m.—And Sore the King:
 Madame Arline Sauer, Official Accompanist.

3AR, MELBOURNE

Monday

MORNING SESSION.

Studio Master: Mr. Allan Lorraine.
 11 a.m.—G.P.O. Clock says "Eleven."
 11.1 a.m.—This morning's gossip. Special and exclusive reports on this morning's work on the tracks. Prepared for 3AR by the racing experts of "The Sporting Judge."
 11.5 a.m.—Age's sport calendar.
 11.7 a.m.—"Age" Stock Exchange report: Metal market.
 11.10 a.m.—"Age" Market reports: farm and station produce, fruit, fish, statistics, etc.
 11.20 a.m.—"Age" shipping records: Ocean forecast.
 11.30 a.m.—Mail notices: express train information.
 11.35 a.m.—British official wireless bulletin.
 11.40 a.m.—"Age" news service, exclusive to 3AR.
 11.50 a.m.—First Weather forecast.
 12 noon.—G.P.O. Clock says: "Twelve."

MIDDAY CONCERT SESSION.

Programme: Selma Panatier's House, 232 Collins Street (by exclusive permission of Wills and Paton, Ltd.), the following Luncheon-Hour programme on the Brunswick Programme.
 12.1 p.m.—The Silver Stars Band, Conductor: Mr. A. W. Estelby. Selection from "Madame Butterfly" (Puccini), in two parts.
 12.5 p.m.—Mr. Alfred O'Shea, tenor:
 "Think to me only with thine eyes" (Old English).
 "Fascinating" (Furcell), by request.
 12.15 p.m.—Celeste Octet, Conductor: Mr. J. H. Squire. "Serenade" (Kowakowski-Sera).
 12.21 p.m.—The Columbians Dance Band:
 "He and My Shadow" (Rose).
 "Moultou Moultou" (Lawrence).
 12.25 p.m.—Palskiki and Paaliki, Hawaiian Guitars:
 "Missouri Waltz" (Logan).
 "Till We Meet Again" (Whiting).
 12.32 p.m.—Mr. Wendell Hall, popular singer:
 "There's a Trick in Picking a Chick, Chick, Chicken."
 "Headin' Home" (Hall) by request.
 12.35 p.m.—Dress Dance Band:
 "A Lane in Saffron" (Leonardo).
 12.41 p.m.—University of Wisconsin Glee Club, Conductor: Mr. Earl Swinney.
 "Revelry of College Songs" (arr. Swinney).
 "Bells of St. Mary's" (Adams).

12.47 p.m.—Mr. Frederic Franklin, violin:
 "The Last Rose of Summer" (Mouze-Aust).
 12.50 p.m.—H. Mallet's Grandeur Guitars Band, Conductor: Lieut. George Miller, March Melody: "Laural Memorial" in two parts.
 1 p.m.—Newmarket Stock Sales. Special "Sun" programme report from Newmarket by courtesy of Macnamara's.
 1.2 p.m.—Close down.

MATINEE SESSION—ORCHESTRAL CONCERT.

Studio Master: Mr. Allan Lorraine.
 Orchestral Director: Mr. Ronald's Brerley.
 Personal Accompanist: Miss Ethel Brerley.
 2.0 p.m.—Studio Orchestra:
 "Selection of Popular Songs" (Lehn).
 Walse (Petersa Carreus).
 2.45 p.m.—Miss Julia Russell, soprano:
 "The Swallows" (Gower).
 "Love, I Have Won You" (Ronald).
 2.54 p.m.—Studio Orchestra:
 "Merrie England" (Gutman).
 "The Eagle" (MacDowell).
 "Moonshine" (MacDowell).
 3.5 p.m.—Miss Ethel Brerley, piano:
 "Argentine" (Hiller).
 3.12 p.m.—Studio Orchestra:
 "Hungarian Dance" No. 2 (Brahms).
 "An Once in Happier Days" (Popper).
 "Scandinavian Suite" (Jusi-Fredelstein).
 3.25 p.m.—Miss Julia Russell, Soprano:
 "One Fine Day" (Puccini).
 "Down in the Forest" (Ronald).
 3.56 p.m.—Studio Orchestra:
 "Suite Melodique" (Primi).
 "Romance" (Tchikowsky).
 3.58 p.m.—Mr. Herbert Pfeiffer, Violin:
 "La Precedence" (Couperin-Kreutzer).
 4.0 p.m.—G.P.O. Clock says "Four."
 4.1 p.m.—Second Weather Forecast.
 4.3 p.m.—Announcements.
 4.5 p.m.—Studio Orchestra:
 "Serenade d'Amal" (Bece).
 4.18 p.m.—Mr. Edward Pipe, Tenor:
 "My Darling" (Bantel Wood).
 "Wild Rose" (Main).
 4.18 p.m.—Studio Orchestra:
 "Scene Passions" (Bece).
 "Indian Summer" (Lake).
 4.35 p.m.—Mr. Edward Pipe, Tenor:
 "Cavatina" from Opera "Faust" (Gounod), by request.
 "M'Appari tutt' Amur" from the opera "Marta" (Plotow).
 4.41 p.m.—Studio Orchestra:
 Dance Suite, "The Rose" (Ansell).
 4.50 p.m.—To-night's Entertainment.
 4.55 p.m.—Special Reading Report: Acceptances and Barrier Positions for Bendigo Cup Day, by "Dyck" (see Opera "Faust").
 5.0 p.m.—G.P.O. Clock Says "Five." Close Down.

CHILDREN'S SESSION.

6.00 p.m.—The Farnyard Jive, transmitted from Kookaburra Gully, the 3AR in-country Station, Jimmy Jaskerco and his pals, Sammy Sanderson and his concertina; Tommy Tooty and his little gramophone; Yerra Tooty and his little gramophone; the White Cockatoo; Duffie the black terrier dog. All the fun of the farm for folk from five to fifty-five.

EVENING SESSION.

SCHUBERT SERIES.

Studio Master: Mr. V. Upton-Crowe.
 7.30 p.m.—Amateur Sport, Special Topical Sporting Talk, arranged by Mr. H. R. Weir, Hon. Sec. of the V.A.A.A.A.
 7.45 p.m.—Newmarket Stock Sales.
 8.0 p.m.—G.P.O. Clock Says "Eight."
 8.1 p.m.—Miss Vera Bradford, Solo Pianist:
 "Mauzka" (Scriabin).
 "Orientale" (Amani).
 8.5 p.m.—Madame Elva Rogge, Contralto:
 "Remembrance" (Lya Filippini).
 "Such a Hit Fellow" (Dichmond).
 8.12 p.m.—Miss Violet Woodcock, Mrs. Sec. Violin:
 "Scherzo Tarantelle" (Wieniawski).
 "Dresden Files" (Nathan Low).
 8.20 p.m.—Mrs. F. Bernford-Jones. A further instalment of this splendid series about "Prison Work Among Our Women."
 8.30 p.m.—Mr. Norman Lee, Musical Comedy Actor:
 "Behind the Clouds" (Davis).
 "He Used to Sing in His Class" (Adams).

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4QG, BRISBANE

Monday.

8.37 p.m.—Radio Game: "Australian Towns." The Solution, and the names of the winners of the Australian Town Radio Competition Broadcast from 3AR on Monday night, 14th November.

8.51 p.m.—Half Hours With Famous Composers.—A short programme of the works of the famous composer, Schubert.

8.52 p.m.—Instrumental Trio: Miss Violet Woolcock, Mrs. Isaac, Violin; Miss Elizabeth Lester, Cello; Mrs. Vera Bradford at the Piano.
"Trio in B Flat" Movement 1 (Schubert).

9.2 p.m.—Mr. Arthur Kempton, Baritone: "Impatience" (Schubert).
"The Trout" (Schubert).

9.10 p.m.—Madame Elva Rogers, Contralto: "My Resting Place" (Schubert).

9.17 p.m.—Instrumental Trio: "Trio in B Flat" Movement 2; "Andante in poco mosso" (Schubert).

9.22 p.m.—Mr. Paul Mikkelson, Tenor: "Who is Everybody" (Schubert).

9.22 p.m.—Petition for all Mr. Alfred Firman, Chief Librarian of Maitland, calls on his multitudinous radio audience to have pencils and paper ready for his rapid reviews on books of yesterday, to-day and to-morrow.

9.28 p.m.—Mr. Norman Lee, Musical Comedy Actor: "Trick in Pickin' a Chicken" (Tobias).
"Somebody's Lonely."

9.55 p.m.—Miss Elizabeth Lester, Cello: "Kol Nidrei" (Max Bruch).

10.4 p.m.—G.P.O. Clock Says "Ten."

10.1 p.m.—Semi-final Weather Forecast.

10.2 p.m.—Yes, Australia! Know Australia! Vivid and interesting news of our own country. This one deals with a Walking Tour Along the Coast between Peterborough and Lorne, specially prepared for 3AR Melbourne by Mr. William Gladstone, of Perth, who, with a friend, made this romantic trek some time ago.

10.12 p.m.—Instrumental Trio: "The Army's Trio."
"Etienne," two movements (Arensky).

10.42 p.m.—Mr. Arthur Kempton, Baritone: "Home" (Strauss).
"Beauty" (Maurice Herbert).

10.45 p.m.—Radio Play: A thumb-nail radio comedy specially written for 3AR: "Think Soup" (V. Upton Brown).
Scene: A neat dining-room in a flat, with a little table set for two people.
Cast: Bruno, the husband, Mr. Geoffrey Mack Margaret, the Wife, Miss Dorothy Redding Alphonse the butler, Mr. Gordon Graham Dickens, the Maid, Miss Alice McGillivray.

10.59 p.m.—Radio Play: "Think Soup" (V.U.R.).
A thumb-nail radio comedy specially written for 3AR (revised by request).
Character:

Bruno, the Husband Geoffrey Mack Margaret, the Wife Dorothy Redding Alphonse, the Butler Gordon Graham Dickens, the Maid Miss Alice McGillivray
Scene: A cosy little dining-room in a flat. The table is laid for two people. Time: Dinner Time (of course).

10.58 p.m.—Miss Vera Bradford, Solo Pianiste: "Waltz from Moll's" (Debussy-Dokanoff).

10.47 p.m.—Mr. Paul Mikkelson, Tenor: "Pale Moon" (Logan), by request.

10.50 p.m.—"Ave" News Bulletin, exclusive to 3AR.

10.55 p.m.—To-morrow's Entertainment.

10.58 p.m.—Final Weather Forecast.

10.59 p.m.—Our Australian Good-night Quote is taken from the Poem, "Our Flag," by John Dryden:

As waves as the winds that caress her.
As wide as her plains art wide.
In the love of the sea, who possess her
Australia, whatever beides!
Our country, in sorrow or laughter,
Our country, range, river and craze!
Our country, from here to hereafter,
And ever it is, Our Flag!

11.5 p.m.—G.P.O. Clock Says "Eleven"; God Save the King.

Mr. H. Jackson (accompanied by Studio Orchestra).

Ross Solo: Selected.
Mr. Stanley Tamblin.

Feature: "Fleur D'Amour" (Pavilly).
The Studio Orchestra.

Contralto Solo:
"Kathleen Mavourneen" (Crouch).
Miss Jessie McInnes.

Soubrette: "Lullaby."
"Twilight in Alabama" (Cahill).
The Studio Orchestra.

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

5CL, ADELAIDE

Monday.

MORNING SESSION.
10 noon to 2 p.m.

AFTERNOON SESSION.

3 p.m.—Chimes.
3.1 p.m.—Orchestra! Selections from the Maple Leaf Cafe.

3.45 p.m.—Musical numbers from the Studio.
4.15 p.m.—Stagland Talk.

4.1 p.m.—Orchestra! Selections from the Arcadia Cafe.
4.58 p.m.—Market reports.
5 p.m.—Chimes and close down.

EVENING SESSION.

8 p.m.—Chimes.
8.1 p.m.—Dinner music from the Garden Gate Orchestra.

8.39 p.m.—Bedtime stories.
7.23 p.m.—Market reports.
7.58 p.m.—Stagland Talk.

7.45 p.m.—Talk by Mr. J. A. McKay of the Aborigines Protection League.
8 p.m.—Chimes.

8.1 p.m.—The Twinkler (Mr. F. J. Millly).
8.20 p.m.—Tennor solo: Broadland Hoops.

8.25 p.m.—Selection: O. Durnell's Band.
8.35 p.m.—Comedy: Milton Imhans.
8.45 p.m.—Tennor solo: Broadland Hoops.

8.50 p.m.—Selection: O. Durnell's Band.
9 p.m.—Chimes.
9.1 p.m.—Weather reports.

9.3 p.m.—Dalgely's Wheat report.
9.5 p.m.—Contralto solo: Jean Klinger.

9.10 p.m.—Comedy: Milton Imhans.
9.15 p.m.—Humorous Recitation: Geo. Whittle.
9.28 p.m.—Contralto solo: Jean Klinger.

9.30 p.m.—Comedy: Milton Imhans.
9.35 p.m.—Selection: O. Durnell's Band.
9.45 p.m.—Humorous Recitation: Geo. Whittle.

9.52 p.m.—Bass solo: Gerald Rogers.
9.54 p.m.—Selection: O. Durnell's Band.
10 p.m.—Chimes.

10.1 p.m.—"Advertiser" news service.
10.15 p.m.—Bass solo: Gerald Rogers.

10.20 p.m.—Selection: O. Durnell's Band.
10.27 p.m.—Recitation: Geo. Whittle.
10.35 p.m.—Relay from the Maison de Danse Orchestra, Geelong.

11.10 p.m.—Tuesday's programme and weather report.
11.15 p.m.—National Anthem and Close Down.

6WF, PERTH.

Monday.

12.30 p.m.—Tune in.

12.35 p.m.—Market, News, and Cable.
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 Quintette, conducted by Mr. Val Smith.

2 p.m.—Close down.
3.30 p.m.—Tune in.

3.35 p.m.—Afternoon Tea Concert, relayed from the Carillon Cafe, Hay Street.
Orchestra! Numbers by Mrs. Hugo's Synchronizing Orchestra.
Vocal interludes from the Studio.



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- 4.50 p.m.—Close down.
6.45 p.m.—Tune in.
The Evening Session is broadcast on 104.5 Metres as well as the usual wavelength.
6.50 p.m.—Stories for the Kiddies, by Uncles Henry and Duffy.
7.20 p.m.—Stocks, Markets, News.
7.40 p.m.—Talk by Lieut.-Col. Le Souef, 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.

ALL NATIONS EVENING.

- 8.3 p.m.—Vocal and instrumental concert, rendered from the Billy Edwards Music Warehouse, Murray Street.
Items by the Specialty Four.
Vocal assisting artists: Misses Merle and Deanne Eastman, contralto and soprano, specialising in Mendelssohn's old duets.
10 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

Monday,

MORNING SESSION.

- 11 a.m. to 12 noon.
AFTERNOON SESSION.
8 p.m.—G.P.O. Clock chimes.
8.1 p.m.—Tune in selection.
8.5 p.m.—Hobart Stock Exchange Quotations, Weather Information, Items of interest—announcements.
9.15 p.m.—Musical selections by 7ZL Studio Trio.
4.15 p.m.—Fashion Talk by "Aunt Edna" of Brownalls Ltd., Hobart.
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.

- 1.30 p.m.—Musical selections.
7.35 p.m.—Physical Culture talk by Lieutenant Reginald Motzcock.
7.50 p.m.—"Mercury" special Tasmanian news service. Railway auction produce sales. Weather information. Hobart Stock Exchange quotations.
8 p.m.—G.P.O. Clock chimes.
8.1 p.m.—Studio concert:
Miss Elsie Lampkin (soprano), Miss Berri Scrinne (soprano), Miss Ruby Flesse (pianist), Miss Kitty Cook (solicitationist), Mr. T. Doe (baritone), Mr. O. Harrows (baritone).
9 p.m.—Talk on Tasmanian Beauty Spots by "E. V. Emmet," "Marie Island".
9.40 p.m.—British Official Wireless page.
9.40 p.m.—"Mercury" special interstate news service. Tasmanian District Weather reports.
9 a.m.—Weather forecasts. Station announcements.
National Anthem.

Tuesday, Nov. 22

2FC, SYDNEY.

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, temperature, astronomical memoranda, shipping intelligence, mail services.
7.35 a.m.—Investment market, mining share market, metal quotations, produce markets.
7.55 a.m.—Wool sales, breadstuffs markets, Interstate 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 programme 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.—Late Sporting information by the Sydney Evening Commissioner.
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.
11.30 a.m.—Studio music.
11.35 a.m.—A talk on Home Cooking and Recipes, by Miss Ruth Hurst.
11.35 a.m.—Close down.

MIDDAY SESSION.

- 12 noon—"Big Ben" and announcements.
12.2 p.m.—Stock Exchange, first call.
12.5 p.m.—Special weather forecast, rainfall.
1.5 p.m.—Studio music.
12.10 p.m.—Summary of "Sydney Morning Herald" news service.
12.40 p.m.—Studio music.
12.45 p.m.—Veronica Rutter, soprano; "Sognal" (Schira).
12.55 p.m.—The Oak Hall Instrumental Trio.
1.30 p.m.—Studio music.
1 p.m.—"Big Ben." Weather intelligence.
1.3 p.m.—"Evening News" midday news service.
Producers' Distributing Society's Report.
1.30 p.m.—The Oak Hall Instrumental Trio.
1.35 p.m.—Stock Exchange second call.
1.40 p.m.—Studio music.
1.45 p.m.—Veronica Rutter, soprano; "Farewell to Summer" (Johnson).
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 p.m.—"Big Ben" and programme announcements.
3.1 p.m.—Doris Orr, soprano; "Bird Songs at Eventide" (Cates).
3.15 p.m.—Studio music.
3.25 p.m.—Sue Hewitt, mezzo; "Robin Adair" (Traditional).
3.35 p.m.—A talk by Mr. S. H. Rowden; "England's Mother Cathedral—Canterbury".
3.50 p.m.—Olivia Cameron, soprano.
4 p.m.—Studio music.
3.40 p.m.—From Farmer's Tea Rooms.
Eileen Moran, soprano.
3.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO (Leader, Mr. Harrow Keats).
4 p.m.—From Farmer's Tea Rooms: Muriel Watt, contralto; "Salween" (Lang).
4.15 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.15 p.m.—From the Studio, Sue Hewitt, mezzo; "Pale Moon" (Logan).
4.20 p.m.—From Farmer's Tea Rooms: Eileen Moran, soprano.
4.25 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.35 p.m.—From the Studio, Doris Orr, soprano; "Kiss of Pique" (Wood).
4.40 p.m.—From Farmer's Tea Rooms, Muriel Watt, contralto; "I Love You More" (Dorothy Lee).
4.45 p.m.—From the Studio: Stock Exchange, third call.
4.5 p.m.—Olivia Cameron, soprano.
4.40 p.m.—Studio music.
5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

- 6.40 p.m.—Programme announcements.
6.45 p.m.—"The Hello Man" Talks to the Children.
6.50 p.m.—Story time for the Young Folk.
6.45 p.m.—Studio music including Muriel Borket, Billed Pianist.
7 p.m.—"Big Ben." Late sporting news.
7.10 p.m.—Dabry's Market reports (Wool, Wheat and Stock).
7.15 p.m.—Fruit and Vegetable Markets.
7.30 p.m.—Weather and Shipping news.
7.25 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 7.45 p.m.—Programme announcements
7.55 p.m.—A Talk by Captain Fred Aarons:
Outstanding Women in History—Catherine
& Medici.
8 p.m.—From the Haymarket Theatre, George
Street, Sydney:
The Haymarket Operatic Orchestra, under
the baton of Mr. Stanley Porter.
8.25 p.m.—From the Studio, Virginia Bassett,
contralto:
"Voo di duona o d'angelo" (Ponchielli).
8.30 p.m.—Alexander Sverjensky, pianist.
8.35 p.m.—Montgomery Stuart will give the
second of a series of Australian Stories,
written by Len Drew.
8.42 p.m.—James Donnelly: A "Black and
Blue" Monologue of Negro life in Missis-
sippi.
8.50 p.m.—From the Haymarket Theatre,
George Street, Sydney:
The Haymarket Operatic Orchestra.
9 p.m.—"Big Ben." Weather forecast.
9.1 p.m.—Win and Widdle, English Enter-
tainers.
9.5 p.m.—Virginia Bassett, contralto:
"Spring" (Hildech).
9.15 p.m.—Alexander Sverjensky, pianist.
9.18 p.m.—Laurence Macaulay, baritone:
"Great Isle! Great Orisia!" (Magic Flute)
(Mozart).
9.32 p.m.—A "Can Drew" Story, told by Mr.
Montgomery Stuart.
9.50 p.m.—James Donnelly: Humor and Pathos
in new songs and stories.
9.58 p.m.—Win and Widdle, English Enter-
tainers.
9.46 p.m.—Virginia Bassett, contralto:
(a) "Bridgth" (Hesley).
(b) "Love, Is a Sickness" (Gilba).
9.52 p.m.—The Haymarket Operatic Orche-
stra, under the baton of Mr. Stanley Porter.
10.2 p.m.—From the Studio, Laurence
Macaulay, baritone:
(a) "Billy Boy" (Shanty Song) (Terry).
(b) "A Jolly Old Cavalier" (Dir).
10.18 p.m.—Win and Widdle, English Enter-
tainers.
10.15 p.m.—From the Ambassadors: The
Ambassadors Orchestra in the latest dance
music. Conductor, Al Hammer.
10.25 p.m.—From the Studio, Laurence
Macaulay, baritone:
"When a Maiden Takes Your Fancy"
(Mozart).
10.30 p.m.—From the Ambassadors:
The Ambassadors Dance Orchestra.
10.57 p.m.—Late news and announcements.
11 p.m.—"Big Ben." Dance music from the
Ambassadors until 11.30 p.m.
11.30 p.m.—National Anthem.
Close down.

2BL, SYDNEY.

Tuesday.

EARLY MORNING SESSION.—7 to 8 a.m.

MORNING SESSION.

- 10.30 a.m.—G.P.O. Clock and chimes.
Musical programme.
10.40 a.m.—News from the "Daily Telegraph
Pictorial."
10.50 a.m.—Musical programme.
11 a.m.—G.P.O. Clock and chimes.
Announcements.
11.15 a.m.—Women's Session.
Social Notes and Replies to Correspondents,
by Mrs Jordan.
Mr. Adams, A.M.A., will talk on "Diet
Value."
12 noon.—G.P.O. Clock and Chimes.
Special ocean forecast and weather reports.
12.5 p.m.—Musical programme.
12.8 p.m.—Information: Mails, Shipping and
Port Directory.
12.11 p.m.—Bulls 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.
12.19 p.m.—Dairy and Farm Produce Market
Report.
12.22 p.m.—FORAGE Market Report.
12.24 p.m.—Fish Market Report.
12.26 p.m.—Rabbit Market Report.
12.28 p.m.—Stock Exchange Report.



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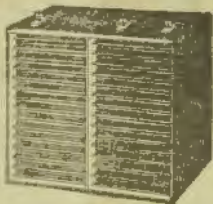
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12.30 p.m.—H.M.V. Gramophone Recital.
1.30 p.m.—G.P.O. Clock and Chimes.
Talk to Children and Special Entertainment for children in Hospital.
2 p.m.—G.P.O. Clock and Chimes.
Close down.

AFTERNOON SESSION.

3 p.m.—G.P.O. Clock and Chimes.
Race results broadcast immediately after each race, by courtesy of the "Sun" Newspapers.
News from the "Sun."
3.15 p.m.—CIVIL SERVICE Stars Trio, under the direction of Miss de Courcy Bremor; Violinist, Miss Tessie Maraskall; Cellist, Miss Mabel Bird.
3.30 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 Stars Trio.
4.15 p.m.—Serial Story, entitled "Made of Money" (P. B. Kynell).
4.35 p.m.—Musical programme.
4.50 p.m.—News from the "Sun."
4.57 p.m.—Racing Results.
4.59 p.m.—Special Ocean Forecast.
5 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.
6.30 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 ("Sun").
Dairy Produce Report.
N.R.M.A. Talk.

7.15 p.m.—Country news from the "Sun"
7.30 p.m.—Talk by a member of St. John Ambulance Association.
8 p.m.—G.P.O. Clock and Chimes.
Broadcasters' Topical Chorus.
8.5 p.m.—The Welsh Male Voice Choir:
Part-Songs.
8.10 p.m.—Recital arranged by Mr. Roland Foster, assisted by prominent artists.
9.20 p.m.—Weather Report, by courtesy of Mr. C. J. Mares, Government Meteorological.
9.31 p.m.—Welsh Male Voice Choir.
9.35 p.m.—Another Recital, by Mr. Roland Foster.
10.15 p.m.—Resume of following day's programme.
10.22 p.m.—Dance music, by Cyril Kaye and the Wentworth Cafe Orchestra, broadcast from the Ballroom of the Wentworth. During intervals between dances news items, by courtesy of the "Sun" Newspapers will be read from the Studio.
12 midnight.—G.P.O. Clock and Chimes.
National Anthem.

2 UW, SYDNEY

Tuesday.

MORNING SESSION.

6.6 a.m.—News; Shipping; Mails; Studio Items.
9.45 a.m.—Women's Session.
9.55 a.m.—Resume of Forward Programme.
10.3 a.m.—Close Down.
12.15 a.m.—Special Employees' Luncheon Session.
12.45 p.m.—Close Down.

AFTERNOON SESSION.

3.9 p.m.—Pianoforte Solo, Mr. Palmer Kent: Selected.

2.6 p.m.—Professor C. Sauer, Violin Solo: Selected.
2.12 p.m.—Studio Selections.
2.34 p.m.—Resume of Forward Programme.
3.0 p.m.—Close Down.

EVENING SESSION

5.6 p.m.—Studio Items.
5.28 p.m.—Resume of Forward Items.
6.0 p.m.—Close Down.

NIGHT SESSION.

7.0 p.m.—"Sonora" Selection.
7.4 p.m.—"Where to Go"
7.10 p.m.—Pianoforte Solo, Selected.
7.15 p.m.—"Sonora" Selection.
7.23 p.m.—Bruce Hudson, Violin Solo: Selected.
7.27 p.m.—Miss Amy Wilson, Soprano: "The Carnival" (Mollo) Selected.
7.31 p.m.—Miss Lillian Joyce, Contralto: Selected.
7.35 p.m.—Pianoforte Solo: Professor C. Sauer: Selected.
7.49 p.m.—Miss Phyllis Stephens, Mezzo Soprano: Selected.
7.54 p.m.—Miss Lillian Joyce, Contralto: Selected.
7.49 p.m.—Mr. James Jackson, Baritone: Selected.
7.55 p.m.—Amy Wilson, Soprano: "I Live For You" (Thompson).
7.59 p.m.—Bruce Hudson, Violin Solo: Selected.
8.2 p.m.—Miss Phyllis Stephens, Mezzo Soprano: Selected.
8.8 p.m.—Gem of the Opera, No. 18, by O. F. Manuel.
9.0 p.m.—Weather Forecast and News Bulletin.
9.4 p.m.—Selections from the Studio.
9.28 p.m.—Resume of Forward Programme.
9.30 p.m.—God Save the King.

3AR, MELBOURNE

Tuesday.

MORNING NEWS SESSION.

11 a.m. to 12 noon.

MIDDAY CONCERT SESSION.

12.1 p.m. to 1.2 p.m.

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MATINEE SESSION.

ORCHESTRAL CONCERT.

Studio Master: Mr. Allan Lorcain.
Orchestral Director: Mr. Ronald Brassey.
Personal Accompanist, Miss Ethel Brassey.
2.30 p.m.—Studio Orchestra:
"Gounod's Fantasia" (Urbach).
2.45 p.m.—Mr. Norman Carter, entertainer:
"Zomerzet Fair."
2.51 p.m.—Studio Orchestra:
"Schubert's Sonata" (arr. Roberts).
3.10 p.m.—Mr. Norman Carter, entertainer:
"In other words" (George Robey).
3.13 p.m.—Studio Orchestra:
"Romeo's Farewell to Juliet" (Barnes).
3.18 p.m.—Mr. Ronald Brassey, Cellist:
"Liedchen" (Becker).
3.21 p.m.—Studio Orchestra:
"Summer Days" (Contes).
3.35 p.m.—Mr. Norman Carter:
"Where does the Rhinoceros?" (Wyn Stanley).
3.40 p.m.—Studio Orchestra:
"The Children's Ball" (Souza).
"Souvenir de Capri" (Becco).
"Cavatine" (Raff).
3.55 p.m.—Mr. Norman Carter, entertainer:
"Every time he kissed her" (L. Wright).
4.1 p.m.—G.P.O. Clock says "Four."
4.1 p.m.—Announcement.
4.4 p.m.—Studio Orchestra:
"From stage to stage" (Petras).

- 4.30 p.m.—Mr. George Everest, tenor:
"O, howly night" (Ronald).
"From Oberon in Fairyland" (Blaker).
- 4.37 p.m.—Studio Orchestra:
Selection from the musical play "Stop Fillet-ing" (Gorham).
- 4.43 p.m.—Mr. George Everest, tenor:
"Tain Stars are the Roses" (Lohr).
"Love's Messengers" (Lohr).
- 4.44 p.m.—Studio Orchestra:
"Mountain Music" (Bertha).
"Dream Shadows" (Spillholz).
- 4.53 p.m.—Tonight's entertainment.
- 5 p.m.—G.P.O. clock says "Five."
Close down.

CHILDREN'S SESSION.

6.30 p.m.—Lisele Mac's entertainment. A hour of music, song and story for all United Kingdom and New Zealand. Lisele Mac's surprise packet full of fun and fancy, not forgetting Blue Bell.

**EVENING SESSION.
FRIVOLOUS AND SERIOUS.**

- Studio Master: Mr. Stephen Macdonald.
- Personal Accompanist: Miss Violet Wood.
- 7.45 p.m.—The Captain—School life and school sport for all the boys and girls of Australia.
- 8.04 p.m.—Newmarket stock sales, notices.
- 8 p.m.—G.P.O. clock says "Eight."
- 8.1 p.m.—The Classic Trio:
"Surrender" (Schubert).
- 8.15 p.m.—Madame Miss Heesleva, soprano:
"Cure Home" from the opera Rigoleto (Verdi), with flute obligato by Norman Farmer.
- "Sylvia's Song" (Grigg).
- 8.15 p.m.—Miss Eileen Gilbert, entertainer. A Cockney character sketch:
"Ain't he Jim?"
"Jumps" (Scott Gatty).
- 8.22 p.m.—Announcements.
- 8.28 p.m.—The Classic Trio:
"Hallel music from Faust, Part I. (Gounod).
- 8.37 p.m.—Mr. Frank Southcombe, tenor:
"I know of two bright eyes" (Cluzan).
"A. Evening" (Gardner).
- 8.45 p.m.—Mr. Norman Farmer, bassist:
"Fantasia on Scotch and Irish Aids" (De Jong).
- "Andalouse" (Ponsard).
- 8.51 p.m.—The Popular People's Pair. In catchy harmony numbers:
"Sympathy" (Friml).
"Alma."

- 9 p.m.—Miss Felice Crozier, violin:
"Melody" (Glick-Kreiser).
- "Mazurka" (Herr).
- 9.15 p.m.—Mr. Ben Forbes, "The Comedy Act," in some amusing chatter and song:
"Kentucky's way of saying Good-night" (Alderson).
- 9.15 p.m.—Madame Miss Heesleva, soprano:
"Vivante" (Dell Anna).
"Berenice" (Gretchaninow).
- 9.23 p.m.—Announcements.
- 9.27 p.m.—The Classic Trio:
"Hallel music from Faust, Part II. (Gounod).
- 9.30 p.m.—Miss Eileen Gilbert, entertainer:
"A jolly good soci."
"I do love a piano" (Berlia).
- 9.45 p.m.—Mr. Frank Southcombe, tenor:
"Boat Song" (Harris Ware).
"Marcella" (Macmurrough).
- 9.53 p.m.—Mr. Norman Farmer, flute:
"Hungarian Fantasia" (Bechler).
"Waltz" (Chopin).

- 10 p.m.—G.P.O. clock says "Ten."
- 10.1 p.m.—Semifinal weather forecast specially for our country listeners.
- 10.2 p.m.—Answers by Audio Reports and answers by IAR Radio Engineers' staff to listeners who seek expert advice. The service is free.
- 10.15 p.m.—The Popular People's Pair.
"My beautiful lady" (Carlyle).
"I'd climb the highest mountain" (Clare).
10.22 p.m.—Miss Edna Battenbach, solo:
"Autumn Flower" (Popper).
"Triana" (Bague).

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Women and Buttons

Hold a button in front of the average woman and she will forget the world! The age of the lady does not matter. A baby female will crow as loudly as one of 45 years—they recently X-rayed a three months old girl to discover the button she had swallowed.

Not so long ago women buttoned their dresses up the back—more accurately, I should say that someone did the buttoning up. I wore my fingers to stumps doing up my wife's dress in the morning and unbuttoning her at night. And I spent hours with a steel prong getting her out of the long button-up boots.

There was no advantage in having a wife with a small back or short legs—she simply reduced the space between buttons and used the full supply.

Fortunately, to-day, all the buttons have been moved round from back to front. The falling marriage rate probably forced women to reverse their buttons.

The only time my wife is not interested in buttons is when one comes off my shirt. If she loses one of the 98 buttons on the front side of her dress, she spends the day in town matching buttons. If I lose one of my five or six, I have to wear a broad tie for a week.

Do you know why my wife loves our new Acme Eliminator—the Light Socket Power which runs your radio from your electric light or power point by simply pressing a button?

You or I would rejoice in the fact that the Acme cuts out the costly "B" battery, delivers clearer tone and greater volume, and can be bought on easy terms. But not so my wife! She just revels in pressing the button!

If New System Telephones Pty., Ltd., put pearl buttons on their radio products, the crowd of female buyers at 280 Castlereagh Street would need police reserves to handle them.*

- 10.30 p.m.—Mr. Ben Forbes—The Cowboy Ace in more happy nonsense and a little song: "Just a bird's eye view" (Donalson).
- 10.37 p.m.—The Classic Trio, popular numbers: "Ain't she sweet" (Yellow), "There's a trick in pickin' a chick, chick, chicken" (Tobias).
- 10.44 p.m.—Special racing report. Anticipations and latest track information about tomorrow's races, by Stipe.
- 10.54 p.m.—To-morrow's entertainment.
- 10.56 p.m.—"The Age" news bulletin, exclusive to 2AR.
- 10.58 p.m.—Weather forecast.
- 10.59 p.m.—Our Australian good-night quote is taken from the poem "When Wattle Bloom" by M. J. Talley:
- "When wattle bloom, and earth and air,
Are quickened by the breath of spring;
A subtle balm steals everywhere,
And glides every living thing;
And one and all their joys declare,
With shout and song the woodlands ring
When wattle bloom, and earth and air,
Are quickened by the breath of spring."
- 11 p.m.—7.0. clock says "Eileen."
God Save the King.

4QG, BRISBANE.

Tuesday.

MIDDAY SESSION.

- 1 p.m.—Market reports; weather information; "The Daily Mail" and "The Daily Standard" news.
- 1.30 p.m.—Lunch music.
- 1.58 p.m.—Standard time signal.
- 2 p.m.—Close down.

AFTERNOON SESSION.

- 2.30 p.m.—A programme of music from the Studio.
- 4.10 p.m.—"The Telegraph" news.
- 4.30 p.m.—Close down.

EARLY EVENING SESSION.

- 6 p.m.—"Daily Standard" news; announcements.
- 6.15 p.m.—Lecture: A Talk arranged by the Queensland Radio Transmitters' League.
- 6.50 p.m.—The Children's Session: Stories by "Uncle Jim."
- 7 p.m.—Special News service; Market reports; Stock reports.
- 7.30 p.m.—Weather news; announcements.
- 7.45 p.m.—Standard time signals.
- 7.58 p.m.—A Talk on Dairying by Mr. C. F. McGrath (Chief Dairy Supervisor).

NIGHT SESSION.

To-night's programme has been arranged by Mr. Erick John, and will be given by his party of Radio Artists.

8 p.m.—From the Studio:

PART I.

- Group of Operatic Songs—
"Opening Chorus" from Rossini's opera.
"Widow Teli" (from Rossini's opera).
Duet: "Give Me Thy Hand, My Father" (from Mozart's opera, "Don Juan").
Miss Audrey Bell (soprano), and Mr. Jack Lord (tenor).
"Batavian" (from Donizetti's opera "The Daughter of the Regiment").
Duet: "The Daughter of the Regiment".
Duet: "Batavian" (from Donizetti's opera "The Daughter of the Regiment").
Duet: "Batavian" (from Donizetti's opera "The Daughter of the Regiment").
Soprano solo "Addio del Passato" (from Verdi's opera, "La Traviata").
Miss Mary Hughes.
- Group of Sacred Songs:
"O Power of Love" (Dortziavsky).
Duet: "O Power of Love" (Dortziavsky).
Contralto Solo, "Lead Kindly Light"
Miss Mildred Bell.
"The Rosary" (Nevin).
Duet: "The Rosary" (Nevin).
"Ave Verum" (Erich John).
Male Quartette.
- Group of English Songs:
Soprano Solo, "Let Here the Gentle Lark" (Bishop).
Miss Mabel Malouf.

- Duet: "Kewlaine" (Hafsa).
Messrs. Geo. Williamson (tenor), and Albert Falk (baritone).
(With Male Quartette).
Bass Solo, "The Viper of Bray"
Mr. Tom Ryan.
"Home Sweet Home" (Drey).
Duet: "Home Sweet Home" (Drey).
4.0 p.m.—Metropolitan Weather Forecast.

PART II.

- Songs of Fairydom:
"Follow the Fairies" (Bauer).
Duet: "Follow the Fairies" (Bauer).
Soprano Solo, "The Viper of Pan" (Rigat).
Miss Mabel Malouf.
Tenor Solo, "The Fairy Sunflower" (Proctor).
Mr. Jack Lord.
Trio, "Hand in Hand With Fairy Grace" (Cook).
Ladies' Chorus, "From Oberon is Fairyland" (Garter).
Mr. Albert Falk.
Soprano Solo, "Fairy Went a Marketing" (Goodhart).
Miss Mary Hughes.
- Tenor Solo:
(a) "The Fairy Laundry" (Phillip).
(b) "Fairies Have Never a Penny" (Brewer).
Mr. Geo. Williamson.
Contralto Solo, "Melanide".
Miss Mildred Bell.
"We Crawl From Under Bed and Flower" (Howitt).
Duet: "We Crawl From Under Bed and Flower" (Howitt).
Bass Solo, "The Fairy Shoemaker" (Howitt).
Mr. Tom Ryan.
Duet: "Tell Me, Where Du Fairies Dwell" (Goer).
Misses Mabel Malouf and Mildred Bell.
Contralto Solo, "There Are Fairies at the Bottom of Our Garden" (Lehman).
Miss Audrey Bell.
"The Fairy Finger" (Brewer).
Duet: "The Fairy Finger" (Brewer).
10.0 p.m.—"The Daily Mail" News; Weather News; Close down.

5CL, ADELAIDE.

Tuesday.

MORNING SESSION.

12 noon to 2 p.m.

AFTERNOON SESSION.

- 3 p.m.—Chimes.
- 3.1 p.m.—Orchestral selection from the Maple Leaf Cafe.
- 3.45 p.m.—Talk by the Rev. G. E. Hale, B.A.
- 4 p.m.—Chimes.
- 4.1 p.m.—Orchestra selections from the Arcadia Cafe.
- 4.38 p.m.—Market reports.
- 5 p.m.—Chimes and close down.

EVENING SESSION.

- 6 p.m.—Chimes.
- 6.1 p.m.—Dinner music from the Covent Garden's Orchestra.
- 6.50 p.m.—Bell time stories.
- 7.25 p.m.—Market reports.
- 7.35 p.m.—Gardening talk by Laseock's Nurseries, Lockleys.
- 7.50 p.m.—Home beautiful talk by "Donna".
- 8 p.m.—Chimes.
- 8.1 p.m.—Overture: Studio Orchestra.
- 8.10 p.m.—Baritone Solo: Harold Masters.
- 8.15 p.m.—Comedy report.
- 8.25 p.m.—Selection: Studio Orchestra.
- 8.35 p.m.—Baritone Solo: Harold Masters.
- 8.42 p.m.—Cello Solo: Geoff Goldworthy.
- 8.48 p.m.—Contralto Solo: Melba Langley.
- 8.58 p.m.—Selection: Studio Orchestra.
- 9 p.m.—Chimes.
- 9.1 p.m.—Weather report.
- 9.3 p.m.—Dalgety's wheat report.
- 9.5 p.m.—Twenty minutes of Gems from "Heno" (Theridre-Duffield), to be sung by Charles Langley, accompanied by the Studio Orchestra.

9.25 p.m.—Comedy: Will Runge.
 9.30 p.m.—Selection: Studio Orchestra.
 9.40 p.m.—Contralto Solo: Meika Langley.
 9.41 p.m.—Selection: Studio Orchestra.
 9.53 p.m.—Bass Solo: Geo. Myers.
 10 p.m.—Chimes.
 10.1 p.m.—"Advertiser" news service.
 10.15 p.m.—Selection: Studio Orchestra.
 10.25 p.m.—Bass Solos: Geo. Myers.
 10.30 p.m.—Relay from Milton De Dange
 Orchestra, Glenelg.
 10.45 p.m.—Wednesday's programme and
 weather report.
 11.15 p.m.—National Anthem and close down.

6WF, PERTH.

Tuesday.

12.30 p.m.—Tune in.
 12.35 p.m.—Markets, News, and Cables.
 1 p.m.—Time signal from Perth Observators.
 1.1 p.m.—Weather notes, supplied by the
 Meteorological Bureau of Western Australia.
 1.2 p.m.—Studio Instrumental Trio.
 1.30 p.m.—Close down.
 1.40 p.m.—Tune in.
 1.45 p.m.—Organ Music, relayed from the
 Grand Theatre, Murray Street.
 Vocal Interludes from the Studio.
 1.50 p.m.—Close down.
 1.55 p.m.—Tune in.
 The Evening Sealion is broadcast on 304.5
 Metres as well as the usual wavelength.
 5.30 p.m.—Stories for the Kiddies by Uncle
 Henry and Duffy.
 7.30 p.m.—Stocks, Markets, News.
 7.45 p.m.—Talk by Dr. J. S. Battye, B.A.,
 LL.B.
 8 p.m.—Time signal from Perth Observators.
 8.1 p.m.—Weather notes, supplied by the
 Meteorological Bureau of Western Australia.
MUSIC AND SONG.
 8.3 p.m.—Chorus by the Maylands Orphan
 Society, relayed from Lyric Theatre, May-
 lands.
 8 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

Tuesday.
MORNING SESSION.
 11 a.m. to 12 noon.
AFTERNOON SESSION.
 2 p.m.—G.P.O. Clock chimes.
 2.1 p.m.—Tune in selection.
 2.15 p.m.—Hobart Stock Exchange Quotations.
 Weather information.
 Items of interest—announcements.
 2.45 p.m.—Orchestral selections by 7ZL studio
 Trio.
 4.15 p.m.—Cooking talk by "Regula."
 4.30 p.m.—Close a.w.n.
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.—Literary, Lapses and Library Lists
 by Mr. W. E. Fuller.
 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.
 8.1 p.m.—Musical items from the studio.
 8.30 p.m.—Dance numbers by Mrs. Sheppard
 Trio from Imperial Hotel, Hobart,
 spread with items from the studio by Mrs.
 Jack Goggin (soprano), Mrs. Ken Dyer (con-
 tralto), Mr. G. Beauchamp (tenor).
 9 p.m.—Radio Question Corner by "Anode."
 9.10 p.m.—British Official Wireless News.
 9.50 p.m.—"Mercury" special Interstate news
 service, Tasmanian District Weather reports.
 8 p.m. Weather forecasts, Nation announce-
 ments. Ships within wireless range.
 National Anthem.

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		Phillips, U.X. base	13/6
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Single Circuit ...	1/3, 1/6, 1/9	Pilot Sub Panel	1/3
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Buffalo 'Phone Plug	1/3	Benjamin	3/- and 4/-

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Wednes., Nov. 23

2FC, SYDNEY

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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 observations, shipping intelligence, mail services.
7.55 a.m.—Investment market, mining share market, metal quotations.
7.55 a.m.—Wool sales, breadstuffs markets, Interstate 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 Cables.
11.50 a.m.—Studio music.
11.35 a.m.—A talk on home cooking and recipes, by Miss Ruth Furst.
11.40 a.m.—Close down.

MIDDAY SESSION.

- 12 noon—"Big Ben" and announcements.
12.2 p.m.—Stock Exchange, first call.
12.3 p.m.—Official weather forecast, rainfall.
12.35 p.m.—Studio music.
12.10 p.m.—Summary of "Sydney Morning Herald" news service, Rugby wireless news.
12.45 p.m.—Studio music, Kathleen Stirling, mezzo.
12.5 p.m.—Studio music.
12.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
12.55 p.m.—Studio music.
1 p.m.—"Big Ben." Weather intelligence.
1.3 p.m.—"Evening News" midday news service, Producers' Distributing Society's report.
1.50 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
1.55 p.m.—Stock Exchange, second call.
1.30 p.m.—Studio music.
1.50 p.m.—Kathleen Stirling, mezzo.
1.55 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 2 p.m.—"Big Ben" and announcements.
2.3 p.m.—The 2FC Imitative Caeleum.
2.8 p.m.—Jessie Freeman, contralto: "Deep River" (Burling).
3.15 p.m.—Studio music.
3.20 p.m.—A Reading.
3.20 p.m.—Anna Luciano, mezzo.
3.35 p.m.—Studio music.
3.40 p.m.—From Farmer's Tea Rooms: Belle Simmons, mezzo: "A Heart that's Free" (Robyn).
3.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO (Leader, Mr. Horace Keast).
3.55 p.m.—From the Studio, Jessie Freeman, contralto: "Oh, Didn't it Rain" (Burling).
4 p.m.—From Farmer's Tea Rooms, Ethel Muller, contralto: "Yonder" (Olive).
4.8 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.15 p.m.—From the Studio: Anna Luciano, mezzo.
4.20 p.m.—From the Tea Rooms, Belle Simmons, mezzo: "Be Curly Headed Baby" (Clutnam).
4.25 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.35 p.m.—From the Studio, Musical item: "The Two Festive Carolers."
4.40 p.m.—From Farmer's Tea Rooms, Ethel Muller, contralto: "Ariso, O' Sen" (Day).

- 4.45 p.m.—From the Studio: Stock Exchange, third call.
4.7 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" Tunes to the Children, assisted by Marie Riss and "Topsy."
5.50 p.m.—Story time for the Young Folk.
6.40 p.m.—Studio music.
7 p.m.—"Big Ben." Late sporting news.
7.15 p.m.—Daigoty's Market reports (Wool, Wheat and Stock).
7.20 p.m.—Weather and Shipping news.
7.28 p.m.—"Evening News" late news service.
NIGHT SESSION.
7.30 p.m.—Programme announcements.
7.44 p.m.—Scott Alexander and His Radio Company will present the fourth of Godding Hall's sensational "Mr. Tower-of-London" Detective Plays, specially written for 2FC, entitled:

"THE ROSE HAY SENSATION."

A Thrilling Play of Sydney night life. Mr. Scott Alexander as the detective—Mr. Tower of London, supported by the entire strength of his popular Radio Company.

- 8.5 p.m.—From the Conservatorium Hall, Sydney. The fourth quarterly concert by the Sydney Madrigal Society, Conductor, Mr. Arnold Mote.
Choral Numbers by the Choir.

- 8.35 p.m.—Jules Van Der Klei, "cello solo."
8.25 p.m.—Gwen Selva, soprano.
8.38 p.m.—The Sydney Madrigal Society's Choir.
8.48 p.m.—Frank Hutchens, pianist.
8.54 p.m.—The Sydney Madrigal Society's Choir, Conductor, Mr. Arnold Mote.
9 p.m.—From the Studio: Late weather forecast.
9.6 p.m.—Scott Alexander will present Martin Meeh's twentieth comedy dissertation, written by Godding Hall, entitled, "The Art of Saying Rudn Things without speaking."
9.12 p.m.—From the Conservatorium Hall, Sydney: Continuation of the programme by the Sydney Madrigal Society, conducted by Mr. Arnold Mote.
Choral numbers.

- 9.20 p.m.—Jules Van Der Klei, "cello solo."
9.30 p.m.—Choral numbers.
9.35 p.m.—Gwen Selva, soprano.
9.45 p.m.—Choral numbers.
9.54 p.m.—Frank Hutchens, pianoforte solo.
10.4 p.m.—Choral numbers.
10.16 p.m.—From the Studio: Cec. Morrison and his Gloomchasers.
10.16 p.m.—Len Maurice, popular baritone.
10.24 p.m.—Cec. Morrison and his Gloomchasers.
10.34 p.m.—Len Maurice, in vocal choruses.
10.40 p.m.—Cec. Morrison and his Gloomchasers.
10.57 p.m.—Late news and announcements.
11 p.m.—"Big Ben."
11.15 p.m.—Len Maurice, pianiste.
11.5 p.m.—Cec. Morrison and his Gloomchasers.
11.40 p.m.—National Anthem.
Close down.

2BL, SYDNEY.

Wednesday.

EARLY MORNING SESSION.

- 7 a.m.—G.P.O. Clock and Chimes.
Musical item from the Studio.
7.4 a.m.—Weather forecast for N.S.W.
7.8 a.m.—State Weather Report.
7.8 a.m.—Mail, Shipping, Arrivals, Departures and sailings.
7.9 a.m.—Stock Exchange Report.
7.10 a.m.—News from "Daily Telegraph."
7.15 a.m.—G.P.O. Clock and Chimes.
Australian Mercantile, Land and Finance Co.'s Report.
7.20 a.m.—Vegetable Market Report.
7.22 a.m.—Fruit Market Report.

7.31 a.m.—Dairy Farm and Produce Market Report.

7.41 a.m.—Egg Market Report.

7.51 a.m.—Fish Market Report.

7.59 a.m.—Wheat Market Report.

8.00 a.m.—G.P.O. Clock and Chimes.

Musical item.

8.11 a.m.—News from "Daily Telegraph Periodic."

8.23 a.m.—G.P.O. Clock and Chimes.

Musical item from the Studio.

8.31 a.m.—News from the "Daily Telegraph Periodic."

8.43 a.m.—Musical item from the Studio.

8.51 a.m.—G.P.O. Clock and Chimes.

Close down.

MORNING SESSION.

11 a.m.—G.P.O. Clock and Chimes.

Musical programme from the Studio.

11.23 a.m.—Women's Session.

Miss Owen Varley will talk on "Rawing."

Social Notes and Replies to Correspondents.

to Mrs. Jordan.

Talk on "Dental Hygiene," by a member of the Dental Board.

11.51 a.m.—Close down.

AFTERNOON SESSION.

12 noon.—G.P.O. Clock and Chimes.

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

Special Ocean Forecast and Weather Report.

12.23 p.m.—Musical programme from the Studio.

12.43 p.m.—Information: Mails, Shipping and Port Directory.

12.51 p.m.—Boats in call by wireless.

12.53 p.m.—Fruit Market Report.

12.55 p.m.—Vegetable Market Report.

12.57 p.m.—London Metal Market Report.

12.59 p.m.—Dairy and Farm Produce Market Report.

1.02 p.m.—FORAGE Market Report.

1.04 p.m.—Fish Market Report.

1.06 p.m.—Rabbit Market Report.

1.08 p.m.—Stock Exchange Report.

1.10 p.m.—R.M.V. Gramophone Festival.

1.12 p.m.—Stock Exchange Report.

1.20 p.m.—G.P.O. Clock and Chimes.

Talk to Children and Special Entertainment for Children in Hospital.

2 p.m.—G.P.O. Clock and Chimes.

Racing resume.

2.5 p.m.—Musical programme.

2.13 p.m.—News from the "Sun."

2.25 p.m.—Operatic Talk;

"The Great Composers."

3 p.m.—G.P.O. Clock and Chimes.

Racing resume and "Sun" news.

3.19 p.m.—Musical programme.

3.30 p.m.—News from the "Sun."

3.39 p.m.—Musical programme.

3.46 p.m.—The Dungowan Dance Band.

4 p.m.—G.P.O. Clock and Chimes.

News from the "Sun."

4.1 p.m.—Musical programme from the Studio.

4.18 p.m.—Serial Story, entitled "Made of Money" (P. B. Kraai).

4.30 p.m.—The Dungowan Dance Band.

4.50 p.m.—News from the "Sun."

5.55 p.m.—Resume of night's programme.

4.59 p.m.—Special Ocean Forecast.

5 p.m.—G.P.O. Clock and Chimes.

Racing resume.

6.30 p.m.—Close down.

EVENING SESSION.

6.45 p.m.—G.P.O. Clock and Chimes.

Children's Session.

6.50 p.m.—Musical Programme from the Studio.

SPECIAL COUNTY SESSION.

7 p.m.—G.P.O. Clock and Chimes.

Australian Mercantile, Land and Finance Co.'s Report.

Weather Report and Forecast, by courtesy of Government Meteorologist.

Producers' Distributing Society's Fruit and Vegetable Market Report.

Stock Exchange Report.

Crain and Foster Report ("Sun").

Dairy Produce Report ("Sun").

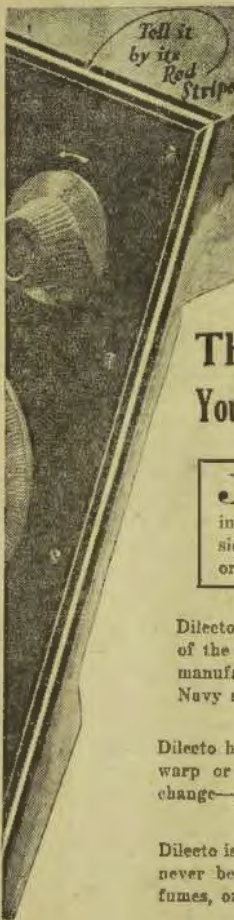
7.15 p.m.—Country News from the "Sun."

7.50 p.m.—Talk on "Tennis" by Dr. M'ELHOOD.

EVENING SESSION.

8 p.m.—G.P.O. Clock and Chimes.

Brudenestera's Tuptical Chorus.



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- 9.3 p.m.—The Thomas Kelaakle Bell Trio (Hawkeian entertainers):
Selections on steel guitars.
8.12 p.m.—Mr. Harry Cook (saxophone).
8.20 p.m.—The Canterbury District Band (Bandmaster, Miss Riebel):
Transmitted from Baker's Hall, Campbell.
8.40 p.m.—From the Studio:
Mr. Dudley Helmreich (baritone).
8.47 p.m.—Mr. Moore MacMahon (violin solo).
8.54 p.m.—Broadcasters' All Sports Report will talk on Boxing, Golf, and General Sporting news.
9.5 p.m.—Weather Report and Forecast, by courtesy of Mr. C. J. Mars, Government Meteorologist.
9.9 p.m.—From Baker's Hall, Campbell:
Selections by the Canterbury District Band.
9.29 p.m.—Resume of the results of the events at the Greyhound Coursing, Epping.
9.34 p.m.—From the Studio:
Mr. Harry Cook.
9.41 p.m.—Mr. Dudley Helmreich.
9.48 p.m.—Mr. Moore MacMahon.
9.55 p.m.—Resume of following day's programme.
10 p.m.—G.P.O. Clock and Chimes.
10.1 p.m.—Dorothy Manning and Harry Graham in Song and Story.
10.15 p.m.—Dance music, by Danny Hogan's Frieno Six, transmitting from the Ballroom of the Bondi Casino. During intervals between dances "Sun" news will be read from the Studio.
11 p.m.—G.P.O. Clock and Chimes, National Anthem.

2GB, SYDNEY

Wednesday.

MORNING SESSION.

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

AFTERNOON SESSION.

- 2.30 p.m.—Music.
3.37 p.m.—Address.
3.52 p.m.—Music.
4 p.m.—Address by Mrs. Crowther.
4.22 p.m.—Music.
4.30 p.m.—Close down.

NIGHT SESSION.

- 7 p.m.—Music.
7.15 p.m.—Address by Mr. Stanley Dubbens.
7.15 p.m.—Music.
7.29 p.m.—Mr. J. K. Powell, Address.
7.30 p.m.—Music.
7.40 p.m.—Mr. R. E. Bennett.
7.55 p.m.—Songs by Miss Eva Casimir.
1. "My Prayer" (Squirel).
2. "The Poet's Life" (Elgar).
8.5 p.m.—Address by Dr. P. K. Ross.
8.20 p.m.—Violin duets with piano accompaniment.

- Dan Scully, L. Brewer, Ada Brook.
8.30 p.m.—2GB Vocal Quartette.
1. "Vive l'Amour."
2. "Tale of Beauty."
3. "What's that a calling?"
Ethel Jones, Eva Casimir, Thomas Hall, Clement Henking.
8.40 p.m.—Senala for Piano by Beethoven, Op. 27; Ada Brook.
9 p.m.—Humorous Sketch by Mr. Healy Burdock.
8.15 p.m.—Songs by Clement Henking.
1. "The Old Grey fox" (White).
2. "The Trumpeter" (Idis).
8.25 p.m.—Violin Duets with piano accompaniment.
Dan Scully, Ada Brook.
9.35 p.m.—2GB Vocal Quartette:
1. "Jule.".
2. "The Ash Grove."
3. "Sally in our Alley."
Ethel Jones, Eva Casimir, Thomas Hall, Clement Henking.
8.45 p.m.—Songs by Ethel Jones:
1. "Jude Rapture" (Lehmann).
2. "Beloved" (Head).
9.50 p.m.—Talk.

2 UW, SYDNEY

Wednesday.

MORNING SESSION.

- 8 a.m.—News, shipping, mails, studio items.
9.45 a.m.—Women's session.
9.55 a.m.—Resume of forward items.
10 a.m.—Close down.
12.12 p.m.—Special employees' (uncheon) session.
12.45 p.m.—Close down.

AFTERNOON SESSION.

- 2 p.m.—Pianoforte solos and selections from the Studio.
2.25 p.m.—Resume of forward programme.
3 p.m.—Close down.

EVENING SESSION.

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

NIGHT SESSION.

- 7 p.m.—Square selection.
7.4 p.m.—Where to go.
7.15 p.m.—Pianoforte solo:
Selected.
7.14 p.m.—Miss Ailene O'Connor:
"Songs at the piano."
7.15 p.m.—Mr. Reg Ellis, pianoforte solo:
Selected.
7.23 p.m.—Douglas Rae, tenor:
"Drink to me only with thine Eyes."
7.25 p.m.—Miss Cecily Ellis, soprano:
"The Lilac Tree" (Garland).
7.33 p.m.—Miss Deets Fitzmaurice, elocutionist:
Selected.
7.39 p.m.—Miss Ailene O'Connor:
Songs at the piano.
7.44 p.m.—Gordon James McDonald:
Jazz Interlude.
7.5 p.m.—Douglas Rae, tenor:
"The Blind Ploughman."
8.14 p.m.—Mr. Reg Ellis, pianoforte solo:
Selected.
8.19 p.m.—Douglas Rae, tenor.
8.25 p.m.—Miss Cecily Ellis, soprano:
Selected.
8.29 p.m.—Miss Ailene O'Connor:
Songs at the piano.
8.31 p.m.—Selections from the Studio.
9 p.m.—Weather forecast and news bulletin.
9.5 p.m.—Studio selection.
8.22 p.m.—Resume of forward programme.
9.30 p.m.—God Save the King.

3AR, MELBOURNE

Wednesday.

MORNING NEWS SESSION.

11 a.m. to 12 noon.

MIDDAY CONCERT SESSION.

12.1 p.m. to 1.2 p.m.

Transmitted from Panatrophe House, 253 Collins Street (by exclusive permission of White and Paton, Ltd.), on the Brunswick Panatrophe.

MATINEE SESSION—DANCE CONCERT.
Sports Results—During the afternoon, the results of the Bendigo Cup Meeting and other information will be given as it comes to hand.

- 2.30 p.m.—Bendigo Races. Result of Hurdle Race.
2.31 p.m.—Studio Orchestra.
"Waltz and Scherzo" (Oscar Straus).
"Norwegian Dances," Nos. 2 and 3 (Grieg).
2.43 p.m.—Bendigo Races. Result of Epsom Plate.
2.44 p.m.—Ayers Danzonians:
"I Wonder How I Look when I'm asleep" (Henderson).
"Hello, Swanes" (Britt).
"Slow Riser" (Schwab).
2.5 p.m.—Mr. Tom White, Saxophone:
Dance Hornpipes" (Windcraft).

- 3.0 p.m.—Studio Orchestra:
"An Arabian Festival" (Bickett).
"Longing" (Wood).
- 3.24 p.m.—Bendigo Races. Result of Bendigo Cup.
- 3.24 p.m.—Mr. Herbert Pettifer, viola:
"Melodie" (Bosglighi).
- 3.28 p.m.—Avars Danonians:
"Charmette" (Pollack).
"Down Kentucky Way" (Hillespie).
"Yesterday" (Wilhite).
- 3.40 p.m.—Mr. John Box, baritone:
"Vulcan's Song" (Gunnod).
"Grand Glenaugh" (Graham).
- 3.44 p.m.—Studio Orchestra:
Selection from the musical comedy
"Kissin' Cats" (Frim).
- 3.54 p.m.—Bendigo Races. Result of Epsom Purse.
- 4.0 p.m.—G.P.O. Clock says "Four."
- 4.1 p.m.—Second Weather Forecast.
- 4.2 p.m.—Announcements.
- 4.6 p.m.—Avars Danonians:
"Oh, How I've Waited for You" (Ayer).
"Fretting" (Gesson).
- 4.10 p.m.—Miss Ethel Beasley, piano:
"Star in Disguise" (Gould).
- 4.24 p.m.—Bendigo Races. Result of President's Welter.
- 4.33 p.m.—Studio Orchestra.
- 4.34 p.m.—Mr. John Box, baritone:
"Old Harry" (Grant).
- 4.40 p.m.—Avars Danonians:
"When I was a Bachelor" (Gregory).
- 4.42 p.m.—Avars Danonians.
- 4.43 p.m.—Bendigo Races. Result of Novice Handicap.
- 4.55 p.m.—Bendigo Races. Second Day Acceptances, etc.
- 4.58 p.m.—To-night's entertainment.
- 5.0 p.m.—G.P.O. Clock says "Five."
Close down.

CHILDREN'S SESSION.

- 5.30 p.m.—The Farman Fire, transmitted from Kookaburra Gully, the IAB up-country Station. Jimmy Jackeroo and his pals, Sammy Snodden and his concertina, Tommy Towrie and his little gramophone Yarra, the walloo cockatoos, Durlie the black helge dog. All the fun of the farm for folk from five to fifty-five.

EVENING SESSION.

GRAND NATIONAL BAND NIGHT.

- 7.30 p.m.—Mr. A. Nelson, vice-president of the IAB Stamp Club: "Stamp Collecting for Young and Old."
- 7.40 p.m.—Mr. W. A. Cullinan, of McNameara's, Melbourne: A popular and instructive Talk on Banking.
- 7.50 p.m.—Newmarket Stock sale.
- 8.0 p.m.—G.P.O. Clock says "Eight."
- 8.1 p.m.—Grand National Programme, transmitted from the Special Band Rotunda at Preston Park.
- 8.2 p.m.—Preston Citizens' Band.
- 8.3 p.m.—Australia's Offering.
- 8.4 p.m.—Preston Citizens' Band. Conductor, Mr. Harry Hellings.
- 8.6 p.m.—Preston Citizens' Band.
- 8.11 p.m.—Scotland's Contribution.
- 8.13 p.m.—Pipe-Major D. Macpherson; Scotland's melodies on the Bagpipes.
- 8.18 p.m.—Miss Dorothy Humphreys and Mr. Ernest Sage.
- 8.26 p.m.—Preston Citizens' Band.
- 8.30 p.m.—Mr. Bob Hoxton, comedian.
- 8.44 p.m.—Miss Dorothy Humphreys, soprano;
- 8.46 p.m.—Canada's Tribute.
- 8.49 p.m.—The Preston Citizens' Band.
- 8.55 p.m.—England's Entry.
- 8.59 p.m.—Mr. Ernest Sage, baritone.
- 9.0 p.m.—Preston Citizens' Band.
- 9.11 p.m.—Wales' Warriors.
- 9.12 p.m.—Mr. Walter Barker harp.
- 9.17 p.m.—Mr. Ernest Sage, baritone.
- 9.25 p.m.—Preston Citizens' Band.
- 9.35 p.m.—Australia Again—One of our well-known Solicitors, who has gathered together a most interesting and amusing series of historical sketches.
- 9.34 p.m.—Mr. F. A. Currie: Early Victorian History.
- 9.45 p.m.—Preston Citizens' Band.
- 9.51 p.m.—Ireland's Interests.
- 9.52 p.m.—Miss Dorothy Humphreys and Mr. Ernest Sage.
- 9.55 p.m.—Pipe-Major D. Macpherson; Irish Airs on the Irish Pipes.
- 10.0 p.m.—G.P.O. Clock says "Ten."

IMPORTANT ANNOUNCEMENT

The Ever-Ready Company (Gt. Britain), Ltd., desires to announce the introduction of two new-type Ever-Ready "B" Batteries.

These Batteries, marking an innovation in trouble-free "B" Battery service, are called Ever-Ready Super Service and Ever-Ready Heavy Duty respectively, and are now obtainable at most good radio stores.

EVER-READY SUPER SERVICE 45 VOLT.

This improved battery is specially made for use with all multi-valve Radio sets requiring heavy current discharge and for superheterodynes and where power valves are employed. This battery will give longer service at lower cost per hour than any other type of primary or secondary battery. Added "B" battery life and purer reception is obtained by using Ever-Ready No. 126 "C" batteries.

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For heavy-duty radio use with multi-valve sets, and will give longer service than any other "B" battery of equal size. Added "B" battery life and purer reception is obtained by using an Ever-Ready No. 126 "C" Battery.

For heaviest Radio use, with superheterodynes or for power valves, use Ever-Ready Super Service 45 Volt. "C" batteries.

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BUSINESS AS USUAL

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No. 486 PITT STREET

- 10.1 p.m.—Send-final Weather forecast, specially for our Country Listeners.
10.2 p.m.—Preston Citizens' Band.
10.11 p.m.—Miss Dorothy Humphreys, soprano.
10.15 p.m.—Mr. Walter Barker, harp.
10.21 p.m.—America's Aspirations. Rob Royston, Entertainer.
10.25 p.m.—Preston Citizens' Band.
10.30 p.m.—Miss Dorothy Humphreys, soprano.
10.34 p.m.—England Entertains.
3AB—
10.35 p.m.—Roy Royston, Comedian.
10.39 p.m.—Preston Citizens' Band.
10.45 p.m.—Age news bulletin, exclusive to.
10.53 p.m.—Tomorrow's Entertainment.
10.58 p.m.—Final weather forecast.
10.59 p.m.—Our Australian Good-night quote is from the poem, "When the World was Young," by Henry Lawson.
11 p.m.—G.P.O. Clock says "Eleven."

GOD SAVE THE KING

4QG, BRISBANE.

Wednesday.

EARLY MORNING SESSION.

- 4.40 a.m.—Physical Culture Session.
7.9 a.m.—Close Down.

MIDDAY SESSION.

- 1.0 p.m.—Market Reports; Weather information; "The Daily Mail" and "The Daily Standard" News.
1.40 p.m.—Lunch Hour Music.
1.53 p.m.—Standard Time Signal.
2.0 p.m.—Close Down.

AFTERNOON SESSION.

- 2.40 p.m.—Afternoon Tea Music.
4.15 p.m.—"The Telegraph" News.
4.30 p.m.—Close Down.

EARLY EVENING SESSION.

- 6.0 p.m.—"Daily Standard" News; Announcement.
6.15 p.m.—Lecture: "A Beauty Talk by Dorothea Webster."
6.30 p.m.—The Children's Hour: Stories by "Little Miss Brisbane."
7.0 p.m.—Special News Service; Market Report; Stock Reports.
7.35 p.m.—Weather News; Announcements.
7.45 p.m.—Standard Time Signal.
7.45 p.m.—Lecture: "History of Australian Agriculture" by Mr. E. Q. Beeworth (Queensland Agricultural High School and College).

NIGHT SESSION.

The first portion of to-night's programme will comprise three-quarters of an hour's classical music by Mrs. George Sampson's Party.

- 8.0 p.m.—From the Studio:
Instrumental Trio, "Miniatures" (Bridge).
Miss Cecile Fritchard, Miss Ottilie Cloake and Mrs. Geo. Sampson.
Cello Solo, "A Memory" (Guring Thomas, arr. Squire).
Miss Ottilie Cloake.
Soprano Solo, "Homing" (Teresa Del Riego) Mrs. Hamilton.
Violin Solo, "Serenade" (Vatotti).
Miss Cecile Fritchard.
Piano Solo, Waltzes:
(a) "G-Sharp Minor" (Brahms).
(b) "A-Flat Major" (Brahms).
Mrs. Geo. Sampson.
Soprano Solo, "Ave Maria," from "Cavaleria Rusticana" (Mascardi).
Mrs. Hamilton.
Cello Solo, "Harlequinade" (Squire).
Miss Ottilie Cloake.
Piano Solo, "Alla Masurka" (Pienoznowsky).
Mrs. Geo. Sampson.
Violin Solo, "Melody" (Gluck).
Miss Cecile Fritchard.
Soprano Solo, "My Treasure" (Trevalda).
Mrs. Hamilton.
Instrumental Trio "Chant Sans Paroles" (Tachinowsky).
Miss Cecile Fritchard, Miss Ottilie Cloake, Mrs. Geo. Sampson.

STUDIO PROGRAMME.

- 7.45 p.m.—Overture, "Columbian" (Cox).
The Studio Orchestra (conductor, Mr. A. R. Pomeroy).
Contralto Solo, "Albion With Me" (Liddle).
Miss Dorothy Brown.
A Thought for To-night—"Bible Poets."
Tenor Solo, "You Brought Ireland Over to Me".
Mr. Gerald Cashman.
Voice—"Les Patineurs" (Waldteufel).
The Studio Orchestra.
8.0 p.m.—Metropolitan Women's Follies.
Male Quartette, "Two Roses" (Werner).
The Lyric Male Quartette.
Soprano Solo, "Clairmont" (from "Babil").
Miss Eileen McJannet.
Intermezzo, "Myra" (Maurice).
The Studio Orchestra.
Contralto Solo, "Dorcy and Joan" (Malloy).
Miss Dorothy Brown.
Male Quartette, "A Country Courtship" (Kerley).
The Lyric Male Quartette.
Tenor Solo, "My Mother's Rosary" (Von Tilzer).
Mr. Gerald Cashman.
Cornet Solo, "Reve D'Amour".
Mr. H. Jackson (accompanied by the Studio Orchestra).
Male Quartette, "Alpha De" (Arr. Robinson).
The Lyric Male Quartette.
March "The Lucky Strike" (Glanan).
The Studio Orchestra.
10.0 p.m.—From the Studio: "The Daily Mail" News; Weather News; Close Down.

5CL, ADELAIDE.

Wednesday.

MORNING SESSION

12 noon to 2 p.m.

AFTERNOON SESSION.

- 3.0 p.m.—Chimes.
3.1 p.m.—Orchestral Selections from the Maple Leaf Cafe.
3.45 p.m.—Musical Numbers from the Studio.
4.0 p.m.—Chimes.
4.1 p.m.—Orchestral Selections from the Arcadia Cafe.
4.55 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.
6.20 p.m.—Bedtime Stories.
7.25 p.m.—Market Reports.
7.35 p.m.—Boy Scouts Corner.
7.50 p.m.—Talk by Foundlings Ltd.
8.0 p.m.—Chimes.
8.1 p.m.—Soprano Solo:
Alice Bourke.
8.5 p.m.—Selection: Holden Silver Band.
8.10 p.m.—Comedy: Don Parnell.
8.17 p.m.—Selection: Holden Silver Band.
8.27 p.m.—Soprano Solo: Alice Bourke.
8.34 p.m.—Cello Solo: Helens Harris.
8.38 p.m.—Selection: Holden Silver Band.
8.45 p.m.—Comedy: Don Parnell.
8.50 p.m.—Selection: Holden's Silver Band.
9.0 p.m.—Chimes.
9.1 p.m.—Weather Report.
9.5 p.m.—Dulcety's Wheat Report.
9.5 p.m.—Cello Solo: Helens Harris.
9.10 p.m.—Comedy: Don Parnell.
9.15 p.m.—Tenor Solo: Mr. Herbert King.
9.20 p.m.—Selection: Holden's Silver Band.
9.25 p.m.—Motor Talk by "Accelerator."
9.35 p.m.—Selection: Holden's Silver Band.
9.40 p.m.—Tenor Solo: Mr. Herbert King.
9.45 p.m.—Humor: Mr. Frank Part.
9.50 p.m.—Selection: Holden's Silver Band.
10.0 p.m.—Chimes.
10.1 p.m.—Advertiser News Service.
10.15 p.m.—Tenor Solo: Mr. Herbert King.
10.25 p.m.—Selection: Mr. Frank Part.
10.30 p.m.—Eccles from the Maison De Danes Orchestra, Glenae.
11.10 p.m.—Thursday's Programme, and Weather Report.
11.15 p.m.—National Anthem and Close Down.

6WF, PERTH.

Wednesday.

12.00 p.m.—Tune in.
 12.30 p.m.—Markets, News, and Cable.
 1.00 p.m.—Time signal from Perth Observatory.
 1.15 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

A RELAYED CONCERT.

1.30 p.m.—Lunch-hour Concert, arranged by Messrs. Murgerson's Limited, relayed from Loric House, Murray Street.

FROM THE STUDIO.

1.50 p.m.—The Studio Quartette, conducted by Mr. Val Smith.
 2 p.m.—Close down.
 2.30 p.m.—Tune in.
 2.55 p.m.—Orchestral Music, played by Hoyt's Orchestra, conducted by Mr. Harold Parlington, relayed from Hoyt's Regent Theatre, William Street.
 Vocal interludes from the Studio.

3.00 p.m.—Close down.
 4.45 p.m.—Tune in.
 The Evening Session is broadcast on 104.5 Metres as well as the usual wavelength.
 5.50 p.m.—Singing from the Tiny Tots, by Auntie June and Uncle Henry and Duffy.
 7.00 p.m.—Stocks Markets, News.
 7.45 p.m.—Talk by Mr. H. G. Gravenall: "Training for Various Sports."
 8.00 p.m.—Time signal from Perth Observatory.
 8.15 p.m.—Weather notes, supplied by the Meteorological Bureau of Western Australia.

CONCERT NIGHT.

8.30 p.m.—Metropolitan Glee-men Concert, relayed from His Majesty's Theatre, Hay Street.
 9.10 p.m.—Late news items, by courtesy of "The Daily News" Newspaper Co. Ships within range announcement.
 Weather Report and Forecast.
 10.30 p.m.—Close down.

**Thurs., Nov. 24
 2FC, SYDNEY**

EARLY MORNING SESSION.

7 a.m.—"Big Ben" and programme announcements.
 7.15 a.m.—Studio music.
 7.35 a.m.—Country session. Official weather forecast, rainfall, temperatures, 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, interstate markets, produce markets.
 7.45 a.m.—"Sydney Morning Herald" summary.
 7.55 a.m.—Studio music.
 8 a.m.—"Big Ben." Close down.

MORNING SESSION.

10 a.m.—"Big Ben" and programme announcements.
 10.5 a.m.—Studio music.
 10.15 a.m.—"Sydney Morning Herald" news service.
 10.30 a.m.—Studio music.
 10.37 a.m.—Last minute racing information by the TFC commissioner.
 10.45 a.m.—Studio music.
 11 a.m.—"Big Ben." From St. Stephen's Church, Phillip Street, Sydney: American Thanksgiving Day Service.
 11.30 a.m.—From the Studio: A.P.A. and Hostler's cables.
 11.55 a.m.—Close down.

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MIDDAY SESSION.

- 12 noon—"Big Ben" and announcements.
12.2 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 service.
Rugby wireless news.
12.25 p.m.—Studio music.
12.30 p.m.—Annie Sedger, mezzo:
"The ship of my delight" (Phillips).
12.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
12.50 p.m.—Studio music.
1.0 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.—Studio music.
1.40 p.m.—Annie Sedger, mezzo:
"The Chapel in the Woods" (Cooper).
1.45 p.m.—Studio music.
1.50 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
1.55 p.m.—Last minute sporting information by the 2FC commentator.
2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 3 p.m.—"Big Ben" and announcements.
3.3 p.m.—A. recital by the pupils of Madame Ada Baker:
Vocal duet, "Vestriun Bos Soun" (Bhambhani).
Miss Rita Head and Miss Trickle Hall.
3.8 p.m.—Solo, "Bird songs at Ewendale" (Coates).
Miss Winnie Longbottom, soprano.
3.12 p.m.—Solo, "Sex Koni" (Wood).
Mr. Morris Dale, baritone.
3.16 p.m.—Monologues:
"Tosamuch" (Burchell).
"Daddy and Baby" (Levey).
Miss Doris Filanarovic.
3.22 p.m.—Pianoforte, "Romance" (Sibelius).
Miss Jessie Penman.
3.29 p.m.—Solos:
"Absent" (Micalfo).
"Little love nest just for two" (Lohr).
Miss Nellie Bart, mezzo.
3.38 p.m.—Solo: "Just a cottage small" (Hanley).
Miss Trickle Hall.
3.49 p.m.—From Farmer's Tea Rooms: Mariel Bowsley, soprano:
"Mistral's Vale Song" ("La Boheme").

- 3.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
3.58 p.m.—Studio: Continuation of the recital by Madame Ada Baker's pupils. Duets:
"Wedding Song" (Ester Kahn).
"Little Picanniny" (Kahn).
Miss Winnie Longbottom and Miss Rita Head.
4 p.m.—From Farmer's Tea Rooms: May Craven, mezzo:
"A night idyl" (Lochenborough).
4.5 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
(Leader, Mr. Horace Kealy.)
4.15 p.m.—From the Studio: Margaret Hunt, mezzo:
"A spring morning" (Wagon).
4.20 p.m.—From Farmer's Tea Rooms: Mariel Bowsley, soprano:
"A birthday" (Coven).
4.25 p.m.—THE OAK HALL INSTRUMENTAL TRIO.
4.32 p.m.—From the Studio: Nancy McGillivray, violinist:
"Andante Rhapsodie" (Barris).
"Serenade" (Origo).
4.40 p.m.—From Farmer's Tea Rooms: May Craven, mezzo:
"To a Minstrel" (Breale).
4.45 p.m.—From the Studio: Stock Exchange, first call.
4.47 p.m.—Margaret Hunt, mezzo:
"Fairy Cradles" (Carew).

- 4.50 p.m.—Nancy McGillivray, violinist:
"Mistral's" (Lochenborough).
"Scottish Air" (Voll).
5 p.m.—"Big Ben." Close down.
5.15 p.m.—EVENING SESSION.
5.40 p.m.—The Chorus of 2FC.
5.45 p.m.—The "Hilly Man" talks to the Children.
5.48 p.m.—Jessie Shewth, Songs for Children:
(a) "Big Lady Moon" (Taylor).
(b) "The Elf Man" (Wells).
5.50 p.m.—Story Time for the Young Folk.
6.00 p.m.—Studio Music.
7.0 p.m.—"Big Ben"; Late Sporting News.
7.10 p.m.—Daily's Market Reports (Wool, 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.—"Piano and Violon.".
8.0 p.m.—"Big Ben"; From the Prince Edward Theatre, Castlereagh Street, Sydney: Items from the Musical Introduction to its new film "The Film."
"THE FLAG LIEUTENANT."
1. Introductory March, "The Naval Review" by Albert Cazanov and Concert Orchestra.
8.5 p.m.—E. Leslie C. Harvey, at the Organ. Playing "Favourite" (Classical and Jazzlike).
8.15 p.m.—3. Incidental Music to the Film "His Royal Highness"—a 10-minute picture of the boyhood, manhood and world travels of the Prince of Wales.
8.24 p.m.—4. Albert Cazanov, conducting the Prince Edward Concert Orchestra, in "Piano and Violon.".
8.35 p.m.—Ester Kahn's "Sixteen Shining Sailors" in Albert Cazanov's Stage presentation to "The Flag Lieutenant."
(a) "The Blarney's Song" (Haydn).
(b) "We Saw Sheet and a Flowing Sea" (Lloyd).
(c) "Three for Jack" (Goun).
(d) "Traditional Sailors Chanters" (Ain).
(e) "What To Do."
8.50 p.m.—From the Studio: Jessie Shewth, 2FC Conductor:
(a) "A Brown Bird Sings."
(b) "Someday in My Dreams."
8.58 p.m.—Late Weather Forecast.
9.0 p.m.—"Big Ben"; H. W. Varna and his Company of radio artists will produce for the first time on the air, Finero's Drama, "His House in Order." Specially Prepared for Broad-casting.

ACT THREE.

- GAST:
Hilary Jenson H. W. Varna
Pilot Jenson William Fuddele
Derek Jenson ... Somerset D'Arcy Varna (8 years)
Sir Daniel Ridgely William Hunt
Frew Ridgely C. S. Marshall
Lady Ridgely Les Barry
Geraldine Ridgely Mariel Conner
Miss Thistle Felix Clark
Miss May Service
9.15 p.m.—From the Studio: Contract from H.O. (a) "Bebe O' Mine" (Shull).
(b) "Star of the East" (Lohr).
9.42 p.m.—H. W. Varna and his Company:
(a) "Tired Act of Finero's Drama, "His House in Order."
10.4 p.m.—From the Prince Edward Theatre, Castlereagh Street, Sydney: The Prince Edward Theatre Orchestra. Conductor, Albert Cazanov.
10.55 p.m.—From the Ambassadors: Dance Music by the Ambassadors Orchestra. Conducted by Al Hammett.
10.58 p.m.—From the Studio: Jack Dunne, Baritone:
(a) "Garden I Love" (Tennent).
(b) "At Dawning" (Cedman).
11.00 p.m.—From the Ambassadors: Dance Music.
10.58 p.m.—From the Studio: Jack Dunne, Baritone:
(a) "Blue Eyes" (Ratens).
(b) "Bird Song at Ewendale" (Coates).
11.27 p.m.—Late News and Announcements.
11.0 p.m.—"Big Ben"; The Ambassadors Orchestra, conducted by Al Hammett.
11.30 p.m.—National Anthem: Close Down.

2BL, SYDNEY.

Thursday.

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."
10.50 a.m.—Musical programme from the Studio.
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. Social notes and replies to correspondents by Mrs. Jordan. Talk on "Hosiery" by Mr. Hogan.
12 noon—G.P.O. clock and chimes.
Special ocean forecast and weather report.
12.1 p.m.—Musical programme from the Studio.
12.5 p.m.—Information, Mails, shipping and port directory.
12.11 p.m.—Boats to 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.
12.19 p.m.—Dairy and farm produce market report.
12.22 p.m.—FORAGE market report.
12.24 p.m.—Fish market report.
12.26 p.m.—Rabbit market report.
12.28 p.m.—Stock Exchange report.
12.30 p.m.—H.M.V. gramophone recital.
1.27 p.m.—Stock Exchange report.
1.39 p.m.—G.P.O. clock and chimes.
Talk to children and special entertainment for children in hospital.
2 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" Newspapers.
3 p.m.—G.P.O. clock and chimes.
Musical programme from the Studio.
3.10 p.m.—News from the "Sun."
3.20 p.m.—Musical programme from the Studio.
3.40 p.m.—The Dungowan Dance Band.
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 entitled "Made of Money" (Peter K. Byrne).
4.30 p.m.—The Dungowan Dance Band.
4.50 p.m.—News from the "Sun."
4.57 p.m.—Racing resumé.
4.59 p.m.—Special ocean forecast.
5 p.m.—G.P.O. clock and chimes.

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.

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 reports ("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. Alan Burrows.
7.30 p.m.—Mr. Herbert Markham will talk on "How soap is made in the world's largest factory."
7.45 p.m.—Talk on "Care of the Eyes" to Mr. W. Patterson.
8 p.m.—G.P.O. clock and chimes.
Broadcasters' Topical Chorus.
An hour's programme presented by Home Recreations, Ltd.

The Perfect Valve Receiver



Single Dial Control

FARMER'S present this perfect receiving set, featuring unsurpassed purity of tone and simplicity of control; it is capable of producing any volume desired.

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BURGESS radio BATTERIES

- 8.2 p.m.—The Salomona Dance Orchestra.
8.13 p.m.—Mr. W. E. Lewis, baritone.
8.16 p.m.—The Salomona Dance Orchestra.
8.20 p.m.—Miss Beryl Scott, entertainer at the piano.
8.23 p.m.—The Salomona Dance Orchestra.
8.29 p.m.—Graham and Watkin, entertainers. The Military Band and the Naval Band.
8.54 p.m.—The Salomona Dance Orchestra.
9.4 p.m.—Weather report and forecast by courtesy of Mr. C. J. Mares, Government Meteorologist.
9.5 p.m.—The Marrickville Salvation Army Band (bandmaster, Mr. N. H. Knight), transmitting from Wesley's Street Hall, Marrickville.
9.25 p.m.—From the Studios Mr. W. E. Lewis.
9.28 p.m.—Selections by the Marrickville Salvation Army Band.
9.48 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra. During intervals between dances, news items by courtesy of the "Sun" Newspapers will be read from the Studio.
9.55 p.m.—Resume of following day's programme.
10 p.m.—G.P.O. clock and chimes.
10.1 p.m.—Mr. W. E. Lewis.
10.1 p.m.—Miss Beryl Scott.
10.15 p.m.—Dance music by Cyril Kaye and the Wentworth Cafe Orchestra. During intervals between dances, news items by courtesy of the "Sun" Newspapers will be read from the Studio.
11.50 p.m.—G.P.O. clock and chimes.
National Anthem.

4QG, BRISBANE

Thursday

MIDDAY SESSION

- 1.0 p.m.—Market Reports, Weather Information, "The Daily Mail" and "The Daily Standard" News.
1.20 p.m.—A Lunch Hour Address.
1.55 p.m.—Standard Time Signal.
2.0 p.m.—Close Down.

AFTERNOON SESSION

- 2.30 p.m.—A Programme of Music by the Studio Orchestra.
4.0 p.m.—Cookery Talk by "Betty Simpson".
4.15 p.m.—"The Telegraph" News.
4.30 p.m.—Close Down.
6.0 p.m.—"Daily Standard" News; Announcements.
6.30 p.m.—The Children's Section: Stories by "The Sandman".
7.0 p.m.—Market Reports, Kitch Report.
7.30 p.m.—Weather News; Announcements; "Daily Standard" News.
7.43 p.m.—Standard Time Signal.
7.45 p.m.—Lecturette, "A Talk on Books," arranged by McLeod.

NIGHT SESSION

PART I.—RADIO PLAY "QUICK ACTION"

(Written and Produced by Miss Thelma Champion.)

- 8.0 p.m.—From the Studio.
Radio Play, "Quick Action."

PART II.—STUDIO CONCERT

- 8.0 p.m.—From the Studio.
Metropolitan Weather Forecast
Overture, "Queen of the Nile" (Alster).
Studio Instrumental Quartette (conductor, Mr. Fred G. Smith).
Tenor Solo, "That Old-Fashioned Mother of Mine" (Nicholls).
Mr. S. P. Bacon.
A Thought for Tonight, "The God in a Man"
Will H. Lister.
Contralto Solo, "Roses of Picardy" (Wood).
Miss Dorothy Brown.
Baritone Solo, Selected.
Mr. A. N. Fall.
Waltzes:
(a) "Shalimar" (Nicholls).
(b) "Vision d'Amour" (Jove).

The Studio Instrumental Quartette.
Tenor Solo, "Roses of Romance" (Keittley).
Mr. C. T. Brisbane.
Clarinet Solo, Selected.
Mr. J. Searle.

Friday, 18th November, 1927.

Contralto Solo, "My Shina" (Barrett)
Miss Dorothy Brown.
Flauto Solo
(a) "Nocturne B-Major" (Chopin)
(b) "Capriccio G-Minor" (Bartolozzi)
Miss Rex Phillips.
Tenor Solo, "Little Brown Cottage" (Dickson)
Mr. S. P. Baugh.
Orchestral, "Ripples" (Hilbert)
The Studio Instrumental Quartette.
Tenor Solo, "The Sea Road" (Wood)
Mr. C. T. Birkbeck.
March, "The Ultimatum" (Allen)
The Studio Instrumental Quartette.
12.5 p.m.—"The Daily Mail" News, Weather
News; Close Down.

5CL, ADELAIDE.

Thursday.
MORNING SESSION.
12 noon to 2 p.m.

AFTERNOON SESSION.
2 p.m.—Chimes.
2.15 p.m.—Orchestral selections from the Maple Leaf Cafe.
2.45 p.m.—Talk by Mrs. Murray Coghill: "Domestic Science."
3 p.m.—Chimes.
3.45 p.m.—Orchestral selections from the Aronida Cafe.
4.15 p.m.—Market reports by Messrs. S. C. Ward and Co.
5 p.m.—Chimes and close down.

EVENING SESSION
8 p.m.—Chimes.
8.15 p.m.—Dinner music from the Cosset Garden Orchestra.
8.45 p.m.—Bedtime stories.
9.15 p.m.—Market reports.
9.45 p.m.—Talk by Mr. A. M. Whitesbury.
9.55 p.m.—Chimes.
10.1 p.m.—Special radio broadcast.
10.20 p.m.—Selection: Studio Orchestra.
10.30 p.m.—Tenor Solo: Jas. Kiley.
10.40 p.m.—Comedy: Don Fraser.
10.50 p.m.—Selection: Studio Orchestra.
11.00 p.m.—Tenor Solo: Jas. Kiley.
11.10 p.m.—Chimes.
11.15 p.m.—Weather report.
11.20 p.m.—Dalgety's wheat report.
11.25 p.m.—Selection: Studio Orchestra.
11.35 p.m.—Comedy: Don Fraser.
11.45 p.m.—Soprano Solo: Margery Walsh.
11.55 p.m.—Humorous Recitation: Frances Morris.
12.00 p.m.—Selection: Studio Orchestra.
12.10 p.m.—Comedy: Don Fraser.
12.20 p.m.—Soprano Solo: Margery Walsh.
12.30 p.m.—Humorous Recitation: Frances Morris.
12.40 p.m.—Selection: Studio Orchestra.
12.50 p.m.—Chimes.
1.01 p.m.—News service.
1.10 p.m.—Selection: Studio Orchestra.
1.20 p.m.—Humorous recitation: Frances Morris.
1.30 p.m.—Selection: Studio Orchestra.
1.40 p.m.—Relay from the Maison De Danse Band, Gennev.
1.50 p.m.—Friday's programme and weather report.
11.15 p.m.—National Anthem and close down.

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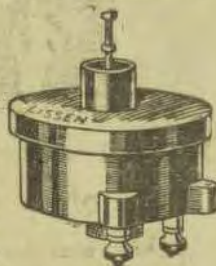


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2FC, SYDNEY.

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EARLY MORNING SESSION.
5 a.m.—"Big Ben" and announcements.
5.15 a.m.—Studio music.
5.45 a.m.—Country session. Official weather forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, mail service.

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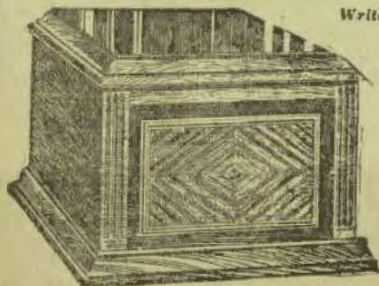
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7.25 a.m.—Investment market, mining share market, metal quotations.

7.35 a.m.—Wool sales, breadstuffs markets, inter-territory 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 (outer) cable services.

11.10 a.m.—Studio music.

11.15 a.m.—A talk on home cooking and recipes by Miss Ruth Forest.

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.—Official weather forecast, rainfall.

12.5 p.m.—Studio music.

12.10 p.m.—Summary of "Sydney Morning Herald" news service. Rugby wireless news.

12.25 p.m.—Studio music.

12.40 p.m.—CLARE FOTHERGILL, dramatic soprano:

"Little Orphan Coon" (Wood).

12.45 p.m.—THE OAK HALL INSTRUMENTAL TRIO.

12.55 p.m.—Studio music.

1 p.m.—"Big Ben" and 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.—Studio music.

1.40 p.m.—CLARE FOTHERGILL, dramatic soprano:

"I heard you singing" (Eric Costes).

1.45 p.m.—Studio music.

1.50 p.m.—THE OAK HALL INSTRUMENTAL TRIO.

2 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

5.0 p.m.—"Big Ben" and Announcements.

5.3 p.m.—Genevieve Eppel, Soprano:

"My Mother Bids Me Bind My Hair."

5.7 p.m.—A Pianoforte Reproduction.

5.12 p.m.—Enid King, Contralto:

"Violets" (Mallinson).

5.15 p.m.—A Reading.

5.30 p.m.—Eileen Jackins, Soprano:

"My Gentle Child" (Dol Riego).

5.33 p.m.—Studio Music.

5.40 p.m.—From Farmer's Tea Rooms: Nea Hallett, Mezzo:

"Love's Whisper" (Wilbey).

5.45 p.m.—The Oak Hall Instrumental Trio.

5.55 p.m.—Studio Music.

6.0 p.m.—From Farmer's Tea Rooms: Florence Grant, Soprano:

"Sweet Pretty Maiden" (Gomes).

6.05 p.m.—The Oak Hall Instrumental Trio.

6.15 p.m.—From the Studio: Genevieve Eppel, Soprano:

"Chanson de Florian" (Godart).

6.20 p.m.—From Farmer's Tea Rooms: Nea Hallett, Mezzo:

"Love is Just a Little Bit of Heaven" (Hart).

6.25 p.m.—The Oak Hall Instrumental Trio.

6.35 p.m.—From the Studio: Eileen Jackins, Soprano:

"Awake, Awake" (Charles).

6.40 p.m.—From Farmer's Tea Rooms: Florence Grant, Soprano:

"Over the Dreamland Sea" (Phillips).

6.45 p.m.—From the Studio: Stock Exchange, third call.

6.47 p.m.—Studio Music.

6.50 p.m.—Enid King, Contralto:

"O, Lovely Night" (Bansal).

6.54 p.m.—Studio Music.

6.58 p.m.—"Big Ben"; Close Down.

EARLY EVENING SESSION.

- 4.40 p.m.—The Chimes of 2FC.
 5.45 p.m.—The "Hello Man" Talks to the Children.
 6.30 p.m.—Story Time for the Young Folk.
 6.40 p.m.—Studio Music.
 7 p.m.—"Big Ben." The 2FC Racing Commentator will give the latest racing information.
 7.10 p.m.—Dalgety'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 Appointments.
 7.45 p.m.—Cricketing Reminiscences prepared by Mr. Frederick Harper.
 8.0 p.m.—"Big Ben": From the Lyric Winter-garden Theatre: Jimmy Elkin's Jazz Band.
 8.15 p.m.—From the Studio: Cyril Monk, Violinist:
 (a) "Valse" (Drda).
 (b) "Bohemian Dances" (Novak).
 8.24 p.m.—Muriel O'Malley, Contralto:
 (a) "My Message" (d'Hardelot).
 (b) "Juno" (Roger Quilter).
 8.30 p.m.—"How to Judge a Play," by Mr. H. Bowden.
 8.40 p.m.—Norman McLennan, Baritone:
 (a) "The Picador" (St. Quentin).
 (b) "A Song of Seattle" (Wilson).
 8.45 p.m.—Win and Windle, English Entertainers.
 8.55 p.m.—Cyril Monk, violinist:
 "Fantasia" upon two Irish Airs (Monk).
 9.2 p.m.—Late weather forecast.
 9.4 p.m.—From the Tivoli Theatre, Castle-rough Street, Sydney:
 Hecty King, male impersonator.
 9.15 p.m.—From the Studio: Muriel O'Malley, contralto:
 "The Road of Jeoffrey forward" (Lohr).
 "A song remembered" (Coates).
 9.22 p.m.—Mr. F. B. Monkley, Australian reciter.
 9.34 p.m.—Linn Smith, novelty pianist.
 9.45 p.m.—Norman McLennan, baritone:
 "Tom Brown" (Square).
 "Coastal" to the Fair" (Vulliamy Standford).
 9.48 p.m.—From the Lyric Winter Garden Theatre, George Street, Sydney:
 Jimmy Elkin's jazz band.
 9.57 p.m.—From the Studio: Win and Windle, English entertainers.
 10.4 p.m.—Linn Smith, novelty pianist.
 10.15 p.m.—From the Lyric Winter Garden Theatre, George Street, Sydney:
 Items by Jimmy Elkin's jazz band.
 10.20 p.m.—From the Studio: Cec Morrison and his Gloomchasers, interspersed with studio items.
 10.57 p.m.—Late news and announcements.
 11 p.m.—"Big Ben." Cec Morrison and his Gloomchasers, in popular numbers, until 11.30 p.m.
 11.30 p.m.—National Anthem.
 Close Down.

4QG, BRISBANE

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.
 1.54 p.m.—Standard Time Signal.
 2.0 p.m.—Close Down.

AFTERNOON SESSION.

- 2.30 p.m.—A Programme of Music from the Studio.
 4.15 p.m.—"The Telegraph" News.
 4.58 p.m.—Close Down.

EARLY EVENING SESSION.

- 4.0 p.m.—"Daily Standard" News: Weather Information: Announcements.
 6.15 p.m.—Lecturette: A Law Talk, "The Purpose of Punishment as an End of Criminal Justice," Mr. C. K. Stewart (Barrister-at-Law).

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66 Charles St., LAUNCESTON, Tas.

664 Bourke Street, MELBOURNE

109 Collins Street, HOBART.

10 p.m.—Bedtime stories by 'The Sand-
man.'
9 p.m.—Market Reports; Stock Reports;
8 p.m.—Weather News; Announcements;
7 p.m.—Daily Standard News.
6 p.m.—Daily Standard Time Signal.
5 p.m.—A Queenslanders' Impressions of
Rural Europe—Mr. J. F. P. Reid (Editor
Queensland Agricultural Journal).

NIGHT SESSION.

The first portion of to-night's programme
will be provided by the Silkitone Apollo
Club (conductor, Mr. T. Westwood).

Chorus, "Soldiers' Loburns" (Gounod).
Silkitone Apollo Club.
A Thought for To-night, "Thinking"
Will H. Lister.

Baritone Solo, Selected.
Mr. J. R. Thompson.
Chorus, "Serenade" (Beethoven).
The Apollo Club.
Monologue, Selected.

Mr. D. Owen.
Chorus, "An Cancellal Muid" (Taver).
The Apollo Club.

Tenor Solo, "Oid" (John Kerr).
Mr. T. Westwood.

Chorus, "The Volga Boatman Song" (Graw-
vill Hartock).
The Apollo Club.

Baritone Solo, "Away in Aithlone" (Lahr).
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"
(Reichardt).

The Apollo Club.
Duet, Selected.

Menors, Westwood and Morris.
Solo and Chorus, "Sweet Genevieve" (Henry
Tucker).

Mr. D. Griffith and Club.
Duo Solo, Selected.

Mr. V. Morris.
Chorus, "Aberfoyle" (Kretzky).
The Apollo Club.

Monologue, Selected.
Mr. D. Owen.

Chorus, "Coursades in Arna" (Adolphe
Adam).
The Apollo Club.

DANCE MUSIC.

1.50 p.m.—From the Continental Hall; Dance
Music.

10.0 p.m.—From the Studio;
"The Daily Mail" News; Weather News;
Close down.

11.15 a.m.—A talk on Gardening by Mr. G.
L. Luckley ("Redgum").

11.30 a.m.—Close down.

MIDDAY AND AFTERNOON SESSION.

12 noon—"Big Ben" and announcements.

12.15 p.m.—Stock Exchange, first call.

12.30 p.m.—Studio music.

12.45 p.m.—"Sydney Morning Herald" news
service.

12.52 p.m.—Rugby wireless news.

12.55 p.m.—Studio music.
Note: Events of the A.S.U. Meeting at Rand-
wick will be described in the running by the
2FC Racing Commentator.

1 p.m.—"Big Ben." Weather intelligence.

1.15 p.m.—"Evening News" midday news ser-
vice.

1.20 p.m.—Studio music.
Note: During racing intervals the following
musical items will be given—
John Gerrard, Melopian numbers.
The Crystal Palace Theatre Orchestra, and
Music from the Studio.

4.35 p.m.—Complete resume of the day's racing
events.

5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

5.40 p.m.—"The Times of the Day."
6.45 p.m.—"The Hello Man" talks to the children.
6.55 p.m.—Story time for the young folk.
7.40 p.m.—"Big Ben." Weather intelligence.
7.55 p.m.—Latest sporting information.
8.15 p.m.—"Evening News" late news service.
8.25 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
air car.

8 p.m.—"Big Ben."
The Leon Instrumental Quartette.
(a) Selection from "William Tell" (Rossini).
(b) Flute solo, "Bogartelle" (Jong).
8.10 p.m.—Results from the Speedway Royal.
8.15 p.m.—From the Studio:
Gladys Finister, soprano.
8.25 p.m.—Shirley Cooke, soprano, and Harry
Whyte, novelty pianist.

8.35 p.m.—Charles Lawrence, entertainer:
"Safety First" (Hague).
8.52 p.m.—Wally Baynes, comedian.
8.55 p.m.—From the Speedway Royal:
Progress results.

8.55 p.m.—From the Studio:
The Leon Quartette, instrumentalists (arr.
Gur).
(a) Violin solo, "Caprice Vexnois" (Kries-
ler).
8.58 p.m.—Progress results from the Speedway
Royal.

8.55 p.m.—From the Studio:
The Leon Quartette, instrumentalists:
(a) "Bitch of the Blues" (Henderson).
(b) Jazz Medley.
(c) "Huckle Deems Girl".

9 p.m.—Late weather forecast.
9.4 p.m.—"The Radio Revellers" under the
direction of Mr. Laurence Halbert.
Opening chorus by the Company, including
Gladys Finister, soprano.
Wally Baynes, comedian.
Shirley Cooke, soprano.
Harry White, novelty 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. Al Hammet.

10.30 p.m.—From the Studio:
Vocal numbers by Len Maurice.

10.55 p.m.—From the Ambassadors:
The Ambassadors' Orchestra.
10.57 p.m.—Late news and announcements,
from the Studio.

11 p.m.—"Big Ben."
The Ambassadors' Orchestra, in popular num-
bers until 11.45 p.m.
11.45 p.m.—National Anthem.
Close down.

4QG, BRISBANE.

Saturday.

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

2.30 p.m.—A matinee for little listeners by
"Miss Wairah".

EARLY EVENING SESSION.

6.30 p.m.—Bedtime stories by "Uncle Ben".

7.15 p.m.—Reading results.

7.30 p.m.—"Auda's" sporting news described.

7.50 p.m.—Sailing news by Mr. Fred Smith.

7.45 p.m.—Lectures: Garden Talk, "The Rose
in Summer"—by "Trevina".

NIGHT SESSION.

To-night's programme will comprise the re-
hearsal of a concert arranged by the Ipswich
Society, Blackstone, in connection with the
unveiling of the "Bardic Chair" to be pre-
sented to the National Historical of Wales.

8 p.m.—From the United Welsh Church,
Blackstone—

Welsh National Anthem—"How Wlad Yr
Nhwad"
Solo—by Mr. Stanley Edwards.

Part Song—"Galm in the Lake."
Welsh Choir (Conductor, Mr. W. D. Jones;
accompanist, Mrs. C. Edwards).

Solo—"The Miner"
Mr. Vic Morris.

Welsh Folk Song.
Solo—by Miss M. H. Lewis.

Address by Committee II. In Jones.
Solo—"Coffed or Rhyddol"
Miss Elzab Davis.

Chorus—"Awel, Awelion Llyn"
Silkitone Apollo Club.

Address by Mr. L. D. Edwards, M.A. (Chief
Inspector, S. School).
Community Singing—"Crug-y-Bac."
Solo—"Enill".

Mr. T. B. Westwood.
Part-song—"The Singers" (Madocks).
Welsh Choir.

Unveiling Bardic Chair.
Address by Mr. R. H. Lewis (Pres. of St.
David's Society).

Quartet—"Myfany" (Dr. Parry).
Messrs. Alf. Wathan, R. Jenkins, Tallies
Jones, Ivor Jones.

Solo—"Dros y Garreg"
Mrs. Gwedd Raffard.

Address by Hon. E. W. Blair (Chief Justice
and Chancellor of the University of Queens-
land).
Solo—"Spring Time is Returning."
Miss Dilys F. Lewis.

Chorus—"Men of Harlech" (A.D. 1484).
The Silkitone Apollo Club.

Address by Hon. B. A. Gordon (Minister for
Labor and Industry).
Community singing.

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

Mr. Edwin Edwards.
Duet—"How Gladly Deeds" (Parry).
Messrs. T. S. Westwood and Vic Morris.
Address by the Rev. James Davis (Minister
of Welsh Church).
Athena—"In the End of the Sabbath (Vin-
cent)."
Welsh Choir.

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

Saturday, Nov. 26
2FC, SYDNEY.

EARLY MORNING SESSION.

7 a.m.—"Big Ben" and announcements.

7.15 a.m.—Studio music.

7.30 a.m.—Country Session: Official weather
forecast, rainfall, temperature, astronomical
memoranda, shipping intelligence, mail ser-
vices.

7.55 a.m.—Investment market, mining share
market, metal quotations.

8.15 a.m.—Wool sales, breadstuffs markets, la-
terate markets, produce markets.

8.45 a.m.—"Sydney Morning Herald" sum-
mary.

8.50 a.m.—Studio music.

9 a.m.—"Big Ben." Close down.

MORNING SESSION.

10 a.m.—"Big Ben" and announcements.

10.15 a.m.—Studio music.

10.30 a.m.—"Sydney Morning Herald" news
service.

10.35 a.m.—Studio music.

10.40 a.m.—A talk by the 2FC Racing Com-
missioner.

10.45 a.m.—Studio music.

11 a.m.—"Big Ben." Studio music.

11.5 a.m.—A.P.A. and Enters' Cable Service.

11.18 a.m.—Studio music.

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All Readers' Queries Answered Here.

SOLODYNE (SPSWICH, Q.)—Q: Having constructed the 5 valve Solodyne receiver contained in your publication some months ago, and up to the present I cannot make the set function.

I followed out the wiring instructions as they were given in the book, not when I came to connect up the batteries the valves light up when the switch was on the "off" neck; having again checked the wiring with my friend, he reading over slowly whilst I checked them, and all was found correct to instructions, without further delay I pulled down the set and wired it to the back panel diagram and could not get any results from it that way.

As a last resource I wired the set to the schematic diagram given, and the three ways given to the wiring proved to be a non-success. The parts used are those listed in the article, with the exception of the screened coils. I could only secure Gredon Solodyne coils. One coil is marked 1, 2, 3, 4, the second 1, 2, 3, 4, and the third 1, 2, 3, 4, 5, 6, each having a earth lug attached.

The valves which I burnt out were 251A Radiotron; the valves now in use are Mullard FMS (3), FMS (2).

Would you be so kind as to advise me of any mistake which may have occurred in the publication, or that I may have some component which will not suit?

A: There is no mistake in the diagram, and if you have wired up correctly, then look to your components. There is evidently a bad short somewhere.

A.W.M. (MANLY)—Q: I am re-constructing my Solodyne in modifications, etc., given in this month's "Radio." In doing so I notice that the Tobe S.M.F.D. condensers have not been included. As I have these condensers from the original Solodyne, I would like to know if it is an advantage to include them in the "Radio" layout? If advisable, I suppose the same position in the circuit will persist as per "W.W.'s" original Solodyne wiring diagram?

A: Yes; you are quite correct.

W.L. (BARINA, Q.)—Q: Does P.C.I.J. always broadcast on the same wave length, viz., 30 metres? Could I receive it with your one valve receiver, published in a "Wireless Weekly" a few weeks ago? And do you think it would be worth while building one now the summer months are here?

A: P.C.I.J. broadcasts at frequent intervals. There is plenty to be heard on a well-constructed short wave receiver all the year round.

LOW LOSSER (WALVERN, V.)—Q: Would you tell me which issue of "Wireless Weekly" in which the article "Three Valve Low Loss Receiver" appeared?

A: In "Wireless Weekly," 15/7/27, but we have sold out of this copy.

Q: 123 Where can I find the article on the Marro Four?

A: In "Wireless Weekly," 4/11/27.

M.M. (SUTHERLAND)—Q: I have a two valve receiver with a Harle Crystal detector, although it is very clear it lacks volume. My A battery is a Bellows 4.5 dry battery. Can you suggest me?

A: The particulars are too meagre to give you any good information, viz., again, tell me the what your circuit is, and what valves you are using, etc., there could be many reasons for your volume.

C.B.T. (CENTRAL BUCCA)—Q: I have a Helios 3 valve set which is not giving satisfaction, and I was thinking of having it altered to the Solodyne, also which would

Will readers kindly note that all technical queries are answered through the columns of Wireless Weekly. There is no occasion to send either stamps or addressed envelopes. The only condition is that the number of questions be limited to four. We unfortunately cannot deal with technical queries by telephone or by personal callers.

Readers sending in queries are asked to understand that it is necessary to sign their letters and to give their addresses. Only the initials and the town will be published. In future queries arriving at this office signed, say, "Constant Reader," Tumbalym, will not be answered.

do the better valves to use, Phillips A69 or UX201A?

A: I can't discuss the properties of different valves in this column. Both valves specified should suit you. The Helios Five should be a good receiver. Why not forward it to the makers for an overhaul.

R.T. (ALMIDALE)—Q: Would you recommend me to make the Three Valve Rice Neutrodyne, or do you think I would get good results from Inter-State stations?

A: I would certainly recommend the Rice Neutrodyne. You should get inter-State stations.

Q: (5) Do you know what firm in Melbourne sells Two Valve Radiolas?

A: Messrs. Amalgamated Wireless A's, 134, 47 York St., Sydney.

Q: 73) Have you any book numbers of October, 1928, as I am after particulars of the Marro One Valve?

A: We have sold out of all these copies.

FUZLED (TARROO, Q.)—Q: In my set as one note I have two little terminals marked Loud Speaker, what are they for?

A: The Loud Speaker, they may be an alternative means of connection, why not try for yourself.

SNAVER (NEWTOWN)—Q: Having made up the "Hale" One Valve set, published in your paper, and am very pleased with it, it does all you say it can, the volume and clarity is very good. I want to add another valve, would be obliged if you can give me details of how to do same?

A: See "Wireless Weekly," 17/6/27.

A.T.B. (IRIKANE)—Q: The One Valve Radio Set, "Wireless Weekly," 31/10/27. Can an ordinary 3 pin holder with Gredon plug-in formers or honeycomb coils be used satisfactorily?

A: Yes.

Q: 121 Will this circuit have a greater range than a crystal with one valve amplifier?

A: Yes.

Q: (3) Will it have the range of a One Valve Set?

A: Yes, even more.

Q: (4) Will it have as much or more volume than a crystal and one valve amplifier on the total station?

A: Yes.

W.K. (GLADESVILLE)—Q: I have a one valve receiver as described in "Wireless Weekly" and known as the Wonder Set. I cannot tune in to ZBL. Farmers seems to draw everything, how can I make the set more selective?

A: I do not remember this set, as having appeared in "Wireless Weekly." The Extraordinary One Valve of "Wireless Weekly," 1/7/27 is the set that you should build.

V.P. (GORDON)—Q: For the B battery described in "Wireless Weekly," 14/22, can I use glass tubes with about 13 inch to 15 inch inside diameter instead of one inch, and can I use hot melted Bitumen or Diamond melting wax instead of that specified?

A: Yes, to both.

Q: (2) Will I need 4 or 5 doz. tubes for a three valve set?

A: Yes, perhaps 4-5 doz. would be better.

S.T. (LAUNCHING PLACE)—Q: Please forward me a copy of the Heath-Robinson circuit?

A: I haven't got one here.

C.E. (BOTANY)—Q: What valve would be suitable for the Regenerative Interstat?

A: Any good valve will function well.

Q: (2) Would accumulator valves be preferred to dry cell valves of the 25 variety?

A: Accumulator valves.

Q: (5) How does the Entinosee Circuit compare with this receiver for volume, audibility and selectivity?

A: Both receivers are particularly good, and it is hard to draw comparisons.

Q: (4) Would it be necessary to safeguard the speaker in any way with the volume required for the Interstat?

A: It is always wise to safeguard the speaker windings irrespective of the volume used.

F.N. (ROEMAN)—Q: I have built the B battery Eliminator described in "Wireless Weekly" not long ago, and I am more than satisfied with the results I got. It was mentioned that it was built for a set of more than three valves, but my set is a 5 valve Circloid and the Eliminator works 5 better than two new 45 volt batteries, way twice as much volume. I put the volume down to the type of valve used, which is a Gredon H.P. Valve D. I have tried Mullard, Radiotron, and Phillips, but they are not in the same street. But there is a drawback, I can receive the local stations without any trace of hum, but when receiving Inter-Stat. stations the hum is very pronounced, is there any way of stopping this hum? I am using a two 2-M.P. condensers and the secondary of a 340 to 1 Transformer Jefferson. I have tried a one inch diameter with no results. Now I want to add a question about shielding coils. Would it be of any advantage shielding Circloid coils? Are the shields earthed or not?

A: Try another choke in the bottom lead. Don't be afraid to use different coils even in series. Add perhaps one or two more 2-M.P. condensers. There is very little advantage in shielding Circloid coils, but if shielding, the shields should be earthed.

VALVES (NARRANDERRA)—Q: Would Radiotron 201A valves throughout be suitable for the Solodyne?

A: No, not for the two radio stages, wherein valves of an impedance of 25 to 30,000 ohms are required. Any valve with these characteristics will suit.

Q: (2) What length aerial for country use?

A: Somewhere about 200 feet would suit you nicely.

BRIEF REPLIES.

E.W.A. (LISMORE).—Your valves may require re-tuning, and it also seems to me that the primary of one of your transformers has broken down.

H.C.D. (GRAFTON).—Your letter plan would be to consult the agents for your receiver.

J.F. (TALWOOD).—I will communicate with you later on as regard to this matter.

A.E.N. (NORTHERAD).—If you are thinking of adding a further stage of radio to this receiver, why not build a straight cut intermediate.

N.I.O. (OLENHREACH).—It would also pay you to build a straight cut intermediate.

C.R. (BATLOW).—The station you heard was most probably KZRN, Manila.

T.J. (DRUMMOND).—Don't connect your battery to earth. The choke you are using is not suitable. Install the choke specified.

W.J.L. (MAROUBRA).—Keep your grid leak and condenser away from your choke and see that there is no interference between it and your reaction condenser.

C.H. (CHATSWOOD).—I am afraid this is beyond me. Try a counterpoise instead of an earth.

C.S.C. (URALLA).—I agree with you that this is the fault of the station in question. I personally have experienced the same thing.

H.D. (REGA).—Your suggested scheme is quite in order.

H.G.H. (FREESTONE, Q.1).—The correct diagram has been forwarded to you. Probably you now require new B batteries.

H.C. (ITUNGA).—This receiver has been superseded by many others since then. Look in the back copies of "Wireless Weekly" and pick a more modern one.

F.J.R. (ROCKDALE).—This issue has been sold out.

F.E. (WENTWORTH FALLS).—This little timer costs 12/6, and may be obtained from any advertiser in "Wireless Weekly."

G.L.D. (WILLOWBERRY).—Q.1: Could you please tell me how many 1 1/2 volt dry cells it is necessary to connect in series to operate a 2 volt dry cell valves?

A.1: If you have a 30 ohm rheostat, then 5 dry cells connected in series would give 4 1/2 volts, and provided the rheostat is not turned on full, these cells will prove satisfactory. The whole secret of long life in a dry cell valve is the judicious use of the rheostat. If this rheostat is turned too far on then more than 3 volts is applied to the filament, with the result that the valve becomes impaired in efficiency.

F.J. (GRANVILLE).—Q.1: My 2 valve Barknes reflex is very broad in tuning, and also to receive 2KV any variable condensers are "all out." I am using 2.0005 variable condensers. Will you tell me how to make the set selective without loss of volume?

A.1: Firstly, your condensers are too big, it should actually be .00025 mfd. It is, therefore, necessary to reduce the turns on each secondary of the radio frequency transformers, to 45 turns each, and the primary of the second radio frequency transformer to 27 turns. This will help you quite a lot. A wave-trap will help you to eliminate the interference, and one will be described in next week's "Wireless Weekly."

P.L. (SYDNEY).—Q.1: For the short wave adaptor, "Wireless Weekly" 5/2/27. What size wire would I use for the coils?

A.1: No. 16 gauge D.C.C. wire wound on a 3in. core is recommended. Forget all about spiderweb coils in about wave work.

Q.2: Would a 200 turn heneycomb coil be sufficient for the radio frequency choke?

A.1: I would rather see you with a 300 turn, although there is no harm in trying the 200 turn coil.

Q.3: Would a 100,000 ohm resistance work in place of the one specified?

A.1: No, this resistance must necessarily be variable, as one one of the type specified. Many thanks for your complimentary remarks.

T.F. (BALMAIN).—Q.1: Would you kindly let me know if a Philips Eliminator would be suitable for a 5-valve set, or should I get an Aikens?

A.1: Either eliminator will suit your purpose.

E.N.C. (ANNERLEY, Q.1): Will you, please, give me details of a good wave trap?

A.1: One will be described in next week's "Wireless Weekly." A copy of the paper you request has been forwarded.

G.H. (TERBARORA).—Q.1: Please tell me if the Rice Electrodes ("Wireless Weekly," 2/2/27) would be suitable for a 4-valve set, with a second stage of audio added. Would it give interstate stations on the loud speaker?

A.1: Yes.

ANXIOUS (GYMPIE).—Q.1: Regarding the Solotone ("Wireless Weekly," 19/3/27), are silver plate Advance Neutralizing Condensers suitable?

A.1: Yes.

Q.2: Are the fixed plates of these neutralizing condensers joined to No. 1 of the coil?

A.1: No. Join the moving plates to this point.

Q.3: Are the moving plates of the reaction condenser joined to A or 6 of coil near the panel?

A.1: Yes.

Q.4: I am using 201A Radiotrons in all stages; would Osram DE8 valves be a marked improvement in detector or radio stages?

A.1: These latter valves, having a higher impedance than the Radiotrons mentioned, are more suitable for these stages.

BAYROAD (CAMPELLTOWN).—Q.1: I have a friend living in North Sydney who owns a four valve receiver, but the local stations preclude the reception of the interstate stations. How can I overcome this? Would a fixed condenser in series with the aerial be an advantage?

A.1: A fixed condenser of .0001 or .00025 mfd. is sometimes an advantage, but I am afraid the receiver is not sufficiently selective for the purpose of receiving interstate stations. Perhaps it wants re-modelling. If you write me again giving me further particulars of the circuit, etc., I may be able to help you.

V.W.R. (MORUYA).—Q.1: I find that in my Browning Drake the condenser closest to the coil does not function properly. It does not seem to tune evenly.

A.1: Evidently the two ends of the coil are not connected correctly to the variable condenser. Check this over. If you have just purchased the set I would advise you to consult the maker before doing anything.

SNAYER (INEWTOWN).—Q.1: I wrote you this week re addition of extra valve to "Hals One Valve" set as published in your paper. Since then I have found that I've been using the valve only. The crystal hasn't been the detector or hasn't been in operation at all, because when I make contact with the crystal, the set becomes dead (no reaction at all), but as soon as the contact is broken again it operates the set (the valve only), because now I have disconnected the crystal altogether and have the B of transformer not connected at all. Last Wednesday I heard K.Z. on this set, and on Friday, Saturday, and Sunday it was O.K., but on Sunday night it was dead, and thinking it was the crystal I disconnected it and put on an ordinary crystal (with catwhisker), and found out that by making contact with catwhisker the set became dead, but as soon as the catwhisker was removed from the crystal, set operated and was able to pick up interstate stations with good strength. Would you kindly enlighten me as to the probable cause and how to adjust same.

A.1: Your trouble is quite a common one with reflex receivers. In order to prevent the valve from detecting it should be operating at that portion of its curve, which is best for amplification purposes. To arrive at this it is necessary to have a high plate voltage, higher than is ordinarily required. Perhaps you don't specify, unfortunately, as much as 125 volts B battery may be required. Again, if the filament of the valve is overdriven this effect will be noticed and, therefore, use the rheostat judiciously. Write to the makers or to the agents for the valve which you are using and they will furnish you with the correct voltage to be applied. Or if you care to write me again telling me the make of valve I shall assist you further.

T.W.S. (BRIBANE).—Q.1: I have built a transformer for charging A and B batteries, but I find that it gets very hot when charging. How can I rectify this?

A.1: A transformer naturally becomes warm when used, but it should not become too hot. For further particulars see October issue of "Radio," wherein you will find an excellent article dealing at length with transformers and chokes for all purposes.

E.Y.E. (WARRA, Q.).—Q.1: Is the Nucleo 5 valve set any good, can it be improved on?

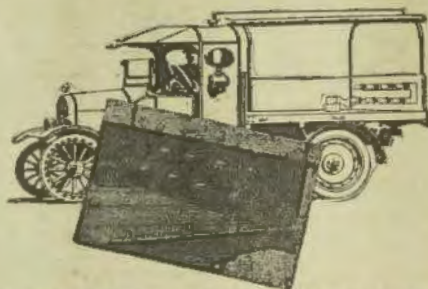
A.1: It is beyond my province to discuss different trade sets in this column.

A.G. (HONDI).—Q.1: My Browning Drake receiver is not very selective, the tuning on the first condenser being very broad. How can I obtain better selectivity?

A.1: Install a loose couple primary of say 15 turns inside the aerial coil which is tuned by the first condenser. Insert this at the filament end, that is the end which is joined to the moving plate of the condenser. Experiment with different turns here until the required degree of selectivity is obtained, as for tone, provided you have a good quality transformer, this will not worry you. Connect a .01 fixed condenser across the secondary of your present transformer.

M.G.O'S (TOOWOOMBA, Q.).—Q.1: What is the best aerial to use on a 4 valve receiver to secure long distance reception, and where can I get a publication describing different types of aerials?

A.1: In your locality an aerial not exceeding 100 feet long, the average height of say, 20 feet, should prove satisfactory. In "Radio" for June there is an excellent article discussing various types of aerials.



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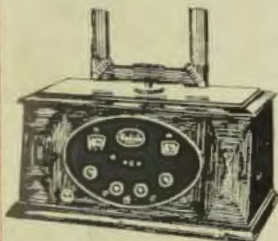
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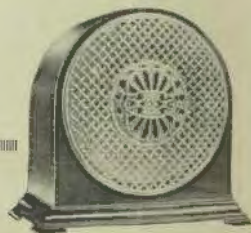
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