

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 9



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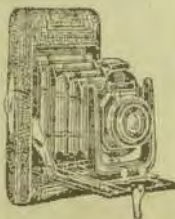
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WIRELESS WEEKLY

VOL. 11, No. 9

FRIDAY, 23rd DECEMBER, 1917.

Why Listeners Pay Royalties.

THE writer was recently asked, "What are these royalties we hear so much about in broadcasting circles?" It is possible that others are equally puzzled about the matter, and it will not be inopportune to discuss the subject.

A royalty, of course, is a payment made by the user to the owner of some device or work. The payment may be demanded in respect of the use of a book, a song or some constituent part of a wireless set. It is the last-named item that interested my friend, and which we will consider for a while.

Although he may not be aware of it, every listener pays royalty to the owners or agents of the owners of certain wireless patents, even if the listener's set is a simple crystal set, which contains no patented device or method. But it is actually the broadcasting company that pays the royalty finally, after the listeners' fees have been given to the company by the Government.

The broadcasting company is obliged to make some payment to the patent owners—Amalgamated Wireless Company—for the right to broadcast. Because in the broadcasting station are some patented devices or systems, the wireless company claims tribute from the broadcasting company in the form of so much per listener every year, no matter whether the listener uses a crystal or a valve set.

That is the point that puzzles many people: why pay on a crystal set? They can understand having to pay something for using a valve set, because valves are patented. The answer is that the listener when he tunes in B.L.O. Melbourne, or any other station, makes some use of, or re-

ceives some benefit from the transmitting equipment at the station. And the broadcasting company owning or operating the station is required to hand over to Amalgamated Wireless Company, the owners of the patent covering transmission, a certain portion of the listener's licence fee.

Until the new agreement between the Government and Amalgamated Wireless Company becomes law, every person or firm that sells valve receivers is liable to pay royalty to the wireless company. And, one supposes, the trader passes on the charge to the purchaser. Thus the listener who uses a valve receiver pays royalty twice.

It is not certain if the traders did pay that royalty; some of them took the stand that their sets did not include devices or systems over which the wireless company had any valid patent rights. That contention is the subject of pending litigation, and was the subject of much comment and evidence before the Royal Commission.

When the new agreement becomes law—this month some time, one may imagine—the traders will no longer be required to pay this valve socket royalty. Amalgamated Wireless will get one payment every year only, that is, from every listener. Out of the licence fee an amount of 1/- will be deducted by the Government and handed to Amalgamated Wireless. And as there are over 250,000 licences now in existence, the 1/- per licence amounts to over £27,500 per annum. The patents owned by the Company have a limited life—generally for a few years—and as some of the most vital patents are near the end of their life, presumably, there will be an alteration in the amount paid by listeners in a few years' time.

Catching Up with the Wireless World.

By R. E. CORDER.



PCIJ TRANSMITTING AGAIN: The Dutch Station PCIJ at Eindhoven which had been closed down for six weeks pending removal to Hilversum, has re-opened for a few weeks at the request of listeners from all over the world.

THE CHILDREN who listen-in to Uncle George will be pleased to hear that a very good photograph of him taken talking to the microphone, and any child who writes to the Theosophical Broadcasting Station, 2GB, will be sent one of these photographs as a Christmas souvenir from the Station.

MARCONI GETS ANOTHER PATENT: Marconi's Wireless Telegraphy Coy. have obtained a British Patent covering an invention relative to loud speakers. The device consists of a plurality of nested sections resembling buckets of various size, which are fitted into one another, thereby effecting faithful and uniform amplification of all the audible frequencies without distortion.

THE LISTENER'S PARADISE: Officers of the Royal Canadian Mounted Police report that at Bernard Harbour (Canadian N.W. Territories), in broad daylight, London, Dublin, Newcastle, Bournemouth, Glasgow, Birmingham, Paris, Berlin, Madrid, and other European stations can be picked up with ease at loud speaker strength.

A WIRELESS SPORTSMAN: Mr. Harry Edwards, 2CW's mechanic, who has had radio experience in the navy, both on ships and submarines, also at Western Port Wireless Dept., as a 1st Class Operator, and who has certificates galore, has an interesting sports record. For 3 years in succession he won the Gold Cup for All Round Sports and Athletics. Mr. Edwards still holds this cup. He is a cricketer of some note, and has played football for Richmond, being one of their star players. His good knowledge of sport has enabled him to satisfy even the most exacting of critics when describing athletics from the Sports Ground.

A PESSIMIST: The man who concluded his letter with the words, "Yours till wireless licences come down—Tom."

MODERN TIMES: Red Riding Hood, "What big ears you have, Grandma!"

Grandma: "All the better to listen in with, my dear!"

MR. WILLIAM LE QUEUX DEAD: Mr. William Le Queux, the well known writer, was a radio enthusiast of repute. His death was a shock to all who knew him, for his books had large sales.

MERRY CHRISTMAS TO THE CHILDREN.

(By C.E.)

A Christmas message to the boys and girls.

*Who listen through the year to SLO
To wish you all the happiest of times
Whatever you do, wherever you may go.*

*May Father Christmas with his deer
and sleigh*

*All loaded up with picture books
and toys*

*Come round again and don't forget a
one*

*Of his beloved Australian girls and
boys.*

*We hope your stockings will be bulging
full*

*Of lovely things this coming Christ-
mas morn*

*Your mothers and your fathers too we
hope*

*Will not be quite forgotten and for-
gotten.*

*Miss Knockburns, Mary Gumleaf too,
And Billy Benny also Brother Bill,
And Mary Mary greet especially those
In hospital who happen to be ill.*

*To those on holidays beside the sea
Among the hills or on the silver
beach.*

*A very happy Christmas is the wish
Of Station SLO to all and each.*

A BROADCASTING station intended solely for dissemination of religious instructions and music is to be erected in New Zealand by the Anglican Broadcasting Association. The estimate cost is £8,000, and the promoters hope to maintain the station by means of subscriptions.

2NM OWNED by Mr. Marcuse, of London, will test on 28 and 32 metres on Tuesdays, Thursdays and Saturdays from 6.0 to 7.0 a.m., and from 9.30 to 10.30 p.m., also on Sundays from 6.0 to 7.0 a.m. and 6.0 to 7.0 p.m. G.M.T. Short wave receivers should be able to pick up these transmissions with ease.

ONE OF THE most brilliant functions hitherto held in Glen Innes was the Hospital Wireless Ball this week, organised for the purpose of raising funds to extend the radio service in the hospital and to supply the necessary earphones for patients in the institution. An amount of £42 was raised, being more than sufficient for the purpose.

COMMENTING on the ball, the Glen Innes "Examiner" says: "With the provision of the wireless service throughout the hospital, patients will be able to occupy many an otherwise leaden hour in a pleasant fashion. To cheer up the unfortunate patients of the hospital will be sufficient reward for the enthusiastic committee and nurses who conducted the function."

IT IS NOT OFTEN that anything not intended for the microphone creeps into the transmission from the Studio of 3QC. Quite recently, however, during the course of a choral concert, a hurried "You'll have to get further back," in a voice unmistakably like that of the announcer, gave evidence of the fact that, for a moment, that official had forgotten that the studio was still "on the air." It is to be hoped that listeners operating valve sets did not take these words as an instruction to move away from their sets to receive a "double forte" passage by the choir, which rendered the succeeding item.

Trend of Power in Broadcasting

By Dr. ALFRED N. GOLDSMITH

The Consulting Engineer of the Radio Corporation of America, in an address before the U.S. Association of Broadcasters, published below, states that broadcasting stations are tending towards the use of higher power

IT is by no means self-evident whether the power that should be used by broadcasting stations to reach the listeners should be low or high. We have, however, now reached a point in broadcast development where we can "take stock" and endeavor to determine the desirable trend of power for use in broadcast transmission on a large scale. It is assumed in the following discussion that stations of a non-speculative nature, having as their serious purpose to supply acceptable programmes to the community and to derive a reasonable return from such activities, are under consideration. Purely local stations, ultra-specialised stations, and stations which are attempting to capitalise in a possible temporary situation which permits inappropriately direct advertising to be broadcast at unprofitable hours, need not be considered in any discussion of the probable permanent trend of broadcasting. To determine the trend of power in broadcasting involves a consideration of both the lower limit and the upper limit of power of stations.

Lower Limit of Transmitter Power.

Unless a broadcasting station has what may be termed an "economic service area," it is not proceeding on a sound basis. The "service area" of a station can be defined in various ways. Perhaps as simple a definition as any is the area within which the station will give enjoyable programme reception, day or night, winter or summer, except under unusually disturbed conditions, such as thunder storms, local interference, or the like.

Estimates of service range and area vary depending upon the opinion of the originator of the estimate as to the amount of noise accompanying a programme, which will be tolerated by the average listener. It has been estimated that in the eastern part of the United States, for the average listener in the city or suburbs, the service range of a 50-watt station is about 3 miles, of a 500-watt station about 10 miles, of a 5-kilowatt station 20 miles, and of a 50-kilowatt

station about 100 miles. The corresponding approximate service areas are 8 square miles for the 50-watt station, 80 square miles for the 500-watt station, 800 square miles for the 5-kilowatt station, and 8,000 square miles for the 50-kilowatt station. Estimates up to double these distances, or four times these areas, have been given by less critical listeners, and distances far in excess of these can be secured on occasion, though without reliability.

Within the service area of a station there is an audience having a definite annual purchasing power for commodities advertised indirectly by the station (perhaps including radio receivers as well, even though these are not specifically mentioned). A station is commercially justified only if the annual purchasing power of the audience, averaged over all events given during a year, is great enough to justify the cost of the entertainment thus broadcast, both to the sponsors (advertisers) and to the broadcasting company itself. In other words, if it costs £20,000 a year, to run a given American station (including programme costs), unless the purchasing power of the interested audience of that station is so large that the profits from sales of commodities advertised by the station is many times £20,000, the economic basis of the station operation may safely be questioned at least from the standpoint of the sponsors of its commercial programmes. It is, of course, assumed that the sales in question are due in appreciable measure to the broadcasting of the sponsored programme by the station. The fact that a broadcasting station which transmits sponsored programmes should have an economic service range has often been overlooked. If, however, the goodwill of the audience and the resulting direction of the purchasing power of the audience into certain channels is one of the purposes of commercially sponsored features, this factor must be given due consideration in the future. Stations which are unable to serve an audience of sufficient purchasing power will necessarily be un-

able to justify the expense of programmes of the highest quality.

In considering the lower limit of desirable transmitter power, the necessity for adequate service area has been stressed. The service area is limited by interfering factors which injure the received signal quality. They include static (atmospheric disturbances), man-made electrical disturbances, and (oddy enough) competing stations which by the attractiveness of their programmes, may draw the audience away from any given station. A successful broadcasting station therefore must produce adequate signal strength over considerable areas.

In general, 5 kilowatts is the present-day lower limit of power for stations of importance located outside of large cities. The location of stations within large cities is, in the present state of the art, to be regarded as inappropriate.

Upper Limit of Transmitter Power.

It is clear that the cost of a transmitting station will become excessive if transmitter power beyond a certain limit is used. The first cost of the station, and its maintenance (including the cost of electrical power) all force the broadcaster to consider seriously the use of no greater power than is necessary to justify the expense of the station.

Furthermore, the use of too high a power will lead to serious local interference even in regions where the population density is not particularly high.

It might be thought, at first, that one could increase the service area of a station indefinitely by increasing the transmitter power. This, however, is not true, because at a distance of between 75 and 150 miles from the station, fading of the signals begins to be a serious limitation of the quality of the service rendered by the station at such distances. A signal which fades in and out more or less irregularly, obviously cannot be regarded as satisfactory to the average listener. Should fading be eliminated, the service range of

stations might be extended beyond perhaps 100 or 150 miles, but it is doubtful whether, in the present state of our knowledge of radio wave propagation, any engineer will be justified in planning a station to have a greater service range than say 100 or 150 miles.

On the other hand, if we aim at a 150-mile service range, sufficient power must be used at this inner edge of the fading zone to produce a signal of adequate intensity.

To be more specific is rather difficult at present, but for stations located within fifty miles of large cities, the possible upper limit of power clearly lies between approximately 60 and 500 kilowatts at present. On the other hand, for stations located at greater distances from large cities, and particularly in the western portions of the United States, a rough estimate of the upper limit of power is between 100 and 1,000 kilowatts.

We have therefore reached a point in broadcasting development where in certain portions of this country transmitter powers as high as 1,000 kilowatts may be considered as a possibility worthy of serious consideration. While this may come as something of a shock to those who had regarded a kilowatt as the maximum necessary power for broadcasting stations not so long ago, yet the marked success of the 50-kilowatt station has encouraged forward-looking engineers to plan further increases of power under suitable conditions in the future.

Trend of Power for Broadcasting.

From the foregoing it is obvious that the general trend of power in broadcast transmitters is rapidly upwards. The power is being increased tenfold, on the average, about every three years. Thus, in 1921 a kilowatt was fairly standard; in 1924 5 kilowatts came to be regarded as a reasonable power; to-day the 50-kilowatt station has its recognised place, and perhaps by 1930 the 500 to 1,000 kilowatt station will be regarded as normal.

People have occasionally gotten the impression that high power stations were not capable of high tone quality of modulation. This is far from being the case, however. Actually the tone quality of the highest power stations in the United States is second to none, and there is no technical reason why it should be in any wise inferior.

If stations of a power of from 500 to 1,000 kilowatts come into moderately general use, their performance will depend upon certain factors. If fading is eliminated they will have a service range of from 500 to 500 miles which will give truly admir-

able coverage and economic justification for such stations. If fading is not eliminated, the range will still remain restricted to 100 or 150 miles, but they will give a greatly enhanced quality of service in the outer portions of the service zone as compared to the 50-kilowatt stations now used.

High power stations are very necessary for network operation because they must reach more than half way to the next station on the network in order that the network shall be a band rather than a series of small spots.

Another justification for the present trend toward higher transmitting powers is the inevitable presence of electrical disturbances in the neighbourhood of human habitations. We cannot shut down every electric fan, every refrigerator, oil burner, motor, or other electrical device in the neighbourhood. This might be too high a price to pay for a radio programme except perhaps to those of us who are members of a broadcasting association. As has been clearly pointed out by the National Electric Light Association recently, one of the desirable ways of meeting the problem of electrical disturbances of radio reception is by increase in transmitter power.

We are now entering an era of real broadcasting service of a reliable nature. This is not an easy thing to accomplish in a country like the United States where vast areas have to be covered. It is also difficult to work out any orderly plan with 700 stations in the field. We may congratulate ourselves that the number of stations is not 7,000; and we may perhaps consider how much luckier it would be if the number of stations were 70.

We also seem to be on "the threshold of an era of transmission of pictures and moving images by radio television to the public, and certainly such transmission will require adequate power. It is bad enough if musical quality is not all that it should be due to static disturbances, but how could we tolerate our favorite screen heroine appearing on the television receiver in our home with a large smudge on her nose or one ear missing because of local electrical interference. The preservation of Hollywood's tradition of feminine pulchritude definitely depends upon the use of adequate transmitter power.

Archimedes once said: "Give me a fixed point for my lever and I will move the earth." And so, to-day, we may say of our newer field of broadcasting: "Give broadcasting the necessary transmitting power to reach all listeners clearly and it will move the souls of men."

3LO'S CHRISTMAS PARTY.

CHILDREN of all ages and every size and class docked to the Auditorium on Saturday, December 10th, in twos and threes, and whole families all buoyed up with the excitement of personally meeting Billy Bunny Miss Kookabarra, Mary Gumleaf and Mary Mary, whom they had met so often over the air from 3LO, Melbourne. This was the first session of the big annual 3LO Xmas party, and over 2000 children managed to pack themselves into the building. They were all in the seventh heaven of delight and their hopes for a good time were more than realised.

An excellent programme of music, movies, fun and frolic, together with talks by the 3LO storytellers and a good old "jazz" laugh from "Little Miss Kookabarra," kept the kiddies on tiptoe of excitement all the afternoon, and everyone wished the clock would stop so as to prolong the happy time, but all good things must come to an end. The playing of the National Anthem was followed by the children reluctantly leaving the hall—happy with pleasant memories.

Thus the first session of the big 3LO Xmas party commenced and ended—all too soon—but only about one-third of the children were entertained. Two more big sessions are necessary to complete the party for which nearly 7000 invitations were issued—some party, indeed!

COUNTRY BROADCASTING BY

3LO: The broadcasting of concerts from country centres in Victoria by Studio 3LO is gaining in popularity, for there is no surer method of bringing the country town nearer the metropolis. On these occasions the stage is arranged in an exact replica of the studio—announcer microphone—all complete—so the audience is given a very good idea of how the Studio programmes are conducted in town. In the eyes of the young people—the best is saved until the end of the feast, when Joe Aronson puts in an appearance with his Synco-Symphonists—and the good people of Ballarat or Kyneton—or wherever the concert happens to be—are able to trip the light fantastic to one of the very best bands of Melbourne. It may be mentioned that these concerts have a very practical side hanging to them—they are invariably held to discharge the expenses of the local hospital—or some other equally deserving organisation, and, as all expenses are borne by 3LO, the funds benefit considerably.

"Letters that Gladden the Heart"

THESE are the letters that gladden the heart of the management of 2FC.

From Mr. A. J. West, 33 Silverdale-road, Eastbourne, Sussex, England:

"Dear Sir.—Your transmission from 2FC yesterday (Sunday evening, 16th October) was heard perfectly by me on a 2-valve set—designed by me for ordinary broadcasting, and not specially designed for short-waves. My position is badly screened by high buildings and by the Downs, 600 feet high.

"I picked up your carrier wave before 6 p.m. and held you right through until you closed down, at 7.10 p.m.

"It was very exciting and thrilling to hear birds (Mr. West refers to the kookaburra), singing, piano music, and addresses—one by Sir Joseph Cook to his successor, as High Commissioner in England—from the other side of the world. I was too engrossed and thrilled to write down all the items, so am only trusting to memory. The grand finale of singing the National Anthem was truly inspiring.

"The whole programme was perfectly delightful, and I look forward with pleasurable anticipation to hearing you again. My wife also listened to it, and joins with me in offering our heartiest congratulations."

After the broadcast performance of "Elijah" by 2FC on 16th November, the following letter was received by the Secretary of the Royal Philharmonic Society:—

"Dear Sir,—I cannot let the night close without thanking you very earnestly for permitting the broadcasting of "Elijah." You can be assured that solitary listeners—in the remote parts of the Commonwealth are thanking you also. For years my wife and I were subscribers, but now she has "Crossed the Bar," and I am alone. Shortly I am going to Norfolk Island, and shall take with me a radio set, in the hope that now and then such an uplift as you have given some of us who are weary and heavy laden, will come my way again. I had longed to be present in the Town Hall to-night, and am, therefore, enclosing the price of a ticket—if you will allow me to do so.

"G. W. CARD."

"P.S.—A daughter, who is not in any way musical, and rarely listens in, is now enjoying "Elijah." She certainly would never have heard it otherwise. Don't you think the broadcasting is worth while?"

Extracts from typical letters received by the management of 2FC—"Letters that gladden the heart," states a well-known studio manager, and spur one to giving one's best

AFTER TWELVE YEARS—REUNITED BY RADIO: Readers will remember the successful reception by listeners in Great Britain, of 2FC's Third Empire Broadcast, and over a thousand letters were received at the Station from listeners in the Homeland, by the English mail, which arrived last week. Horace Keats, the conductor of the new Studio Orchestra, sends the following extract from a friend in England whom he has not seen for twelve years.

"I heard the announcement of 2FC Studio Orchestra "The Carnival of Venice" Horace Keats, conductor. After much wandering, I don't plead guilty to being very sentimental, but when I heard that I confess I felt a bit girlish at being in instantaneous touch with my pal, 13,000 miles away. My friends here must have thought I'd gone "soft." I felt hot, and wanted to yell: "How do, Horace—you've got an audience!"

Australian listeners as a whole have not yet had an opportunity of being in such close touch with overseas stations, but even in this jaded age, we are still awed by the wonder of a medium which in a flash can unite an Empire, and recement friendships, least ordinarily through time and circumstances.

Raymond Ellis, the eminent English baritone, whose "Largo al factotum" was heard perfectly, sent a message to his mother, and when the old lady heard her son's voice from a land so far away, to use her own words to him in the letter he received, she "cried like a child."

COCKATOO CRIES "3LO, MELBOURNE."

From Cobdegga on the banks of the River Murray comes an expression of appreciation of the programmes of 3LO, Melbourne. The writer—Mr. J. Muir—states:—

"You ask for suggestions—may I offer one which is seconded by the most devout admirer—unique perhaps—in Australasia? The suggestion is—carry on in your own way,

too many suggestions may spoil the concert. I—admirer, a sulphur-crested cockatoo, when we sit down to enjoy your programmes, always perches on the door step and screeches out 3LO, Melbourne. We tune in many other stations just to see if he really knows 3LO, and whilst they are on he keeps screeching "3LO, 3LO," and as soon as we tune in your station, he becomes quiet at once. He is typical of hundreds of listeners here who are all content with 3LO, Melbourne, and express that you "let well alone."

WHO BREATHED LIFE into the

microphone at 2FC Studio? Who is responsible for the sibilant whisper of "Old Bill," the Studio microphone? We do not know, but that it is a power to be reckoned with is evident from the following letter which the management of 2FC took the liberty of opening, even though the addressee was "Unknown"—

"Dear Mike,

"I am thoroughly depressed—the worst form. I have lost my sense of humour. Life is no longer a joke or two. The radio set of ours has gone phut. Filament on the plate, or something. Not another valve in New Zealand to replace the dud one in the eliminator, until some arrive from America. It is disgusting. The long weary nights drag on—no Mike—no Win and Windle—no Mr. Halbert—no Mr. Lamedaine—no Miss Maxwell! Oh, Death, where is thy sting!

"Now you know how sad I am. I am sure I'll be an old maid all my life. Don't waste words on me—it's no use. Just feel sorry, and save up a whole heap of humour and the answers to my last letters till I write and smile again.

ANITA."

And the microphone sits there, his marble face inscrutable, taking it all in and saying nothing—apparently.

APPRECIATION FROM VANCOUVER.

Mr. H. Cox, of 1937 Georgia West, Vancouver, B.C., writes an appreciative letter to 3LO, Melbourne, as follows:—

"I often get you and open the window so that the whole world can hear. We always think your programmes are the best we get—perhaps it is because they are British and we are proud of them."



The Safety Valve

Readers are urged to express their opinion on matters pertaining to broadcasting. If you have some erievicean, 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.

SOVIET STATION.

Dear Sir—I have been watching your paper very closely, for some comment from your readers on the reception of U.S.S.R. Russia; the low wave station transmitting on 29 metres, but so far have not read anything about the way this station is coming in, the last 3 weeks—I have a low wave adaptor (3 valve), and have been receiving the Russian Station with wonderful volume and clarity on the speaker without any trouble.

They are on the air practically every evening, although the transmitting times are very irregular (this morning, Sunday), at 12.50 there was a fine programme of singing and orchestral selections, that were well worth hearing—the station concluded with announcements at 1.30—atmospheric conditions were excellent, and there was a total absence of fading.

The quality of the singing and orchestral selections was of a high class nature, and I presume it was an Opera, relayed from some theatre, as there was much clapping between items.

Almost every evening of the week these excellent programmes of similar nature are on the air, and can be picked up and enjoyed on any reasonably good night—and I must say that any of the low-wave "fans" that have not had a go at U.S.S.R. are certainly missing a musical treat.

I hope this information will be of interest to some of your readers, and also those intending to purchase or build low-wave adaptors or sets.

ALEX. L. SMITH.
Rosebery.

BAIL HALE!

Dear Sir—I want to let you know that I consider the "Hale Two" is a marvellous circuit for two valves. My aerial is of the poorest, less than 20 feet high, and shielded by tall buildings. Reception from all local stations is perfect. I get excellent results on the speaker from Melbourne and Brisbane, Adelaide is only fair on the speaker—quite good on the 'phones. Last night I tuned

in 2YK, Wellington, on the speaker. Plugging in the 'phones, I got perfect reception, the volume being almost too great. I must try a larger primary coil, as Farmer's is the limit on my present one, and I am quite confident of 8AR and 7ZL.

One query only—when you say that a lead from the C.D. is soldered or joined to the centre point of the potentiometer, I presume you mean the centre terminal—in some cases I know the carbonium detector is actually joined to a tapping of the wire in the potentiometer. I will close with an expression of appreciation of your excellent journal.

W. V. THYER.

Sydney.

BURIED AERIAL.

Dear Sir,—I was very interested in Mr. Carter's letter of the 25th November issue per medium of the "Safety Valve," in which he gave the results of his experiment with a buried aerial. I have tried the buried aerial Mr. Carter mentions, with the addition of the lead-covered cable for my "lead in," and although it does not eliminate static, at the same time it certainly is an improvement on the outer aerial, and also on the loop, when atmospheric are bad.

My set is a Radiola Super Six (Amalgamated Wireless, Ltd.), and I found, in using the buried aerial, that the volume was diminished by about 25 per cent. and the static by about 50 per cent. If you are satisfied with ear 'phones only, you can almost cut the static right out, but for loud speaker strength this cannot be done.

Rather a peculiar result was that I could get all interstate stations on it except 2PC, and this station would not come in at all. I also found, as Mr. Carter did, that finer tuning is necessary, and that greater selectivity and truer tone is obtained.

I should like to hear if any more of your readers have experimented with this aerial, and what results they have obtained.

VICTOR R. PEACOCK.

Eingara.

SWEET.

Dear Sir,—I'm writing to let you know that I made up your "Harkness Reflex" "Wireless Weekly" 16/9/27, and find it the best set I have ever heard. Its sweetness, volume and purity is beyond my understanding. I will back it against any set that can be brought along. If you had never done anything else but give the public this great set, your mission in the wireless world would be well and truly served. I have been interested in wireless for about 3 years, and have had several makes, but can never say I was ever satisfied until yesterday, when I tried your set. I am using two .0005 V.C. and find I am unable to tune in 2KY or 2GB. If I make the primary windings, say 45 or 50 instead of 60, would that overcome the difficulty? Kindly let me know per "Wireless Weekly" as soon as possible, as I want to fix my set in a cabinet and complete the wiring with busbar, so I can make it permanent. I am using Philips A409 valves run off 31.5 Ever-Ready cells, and 66 volts on plate. I have a "Thorola Cone" speaker that suits this set better than any other speaker to my way of thinking. Once again thanking your paper for being the means of my getting the best set in the world for the outlay.

FRANK PARKINSON.

Moore Park.

GOOD FOR THREE VALVES.

Dear Sir,—I have built the Harkness three valve Reflex described in "Wireless Weekly" the 8/4/27, and feel sure you would be interested to know how I have fared with it. So far I have received the following stations, 2PC, 2BL, 2GB, 2KY, N.S.W.; 3LO, 3AR, Melbourne; 4QG Brisbane, and 5CL Adelaide, on the Loud speaker, 2HD, 2UE, 3DE, 2BY, 3UZ, 5KA, 5DN, 2YA, and 7ZL on the 'phones. I consider it very good for a three valve set, and am well pleased with it in every way.

A. C. ROWCLIFF.

Paterson.

Christmas Arrangements at 2FC

CHRISTMAS EVE and also on Christmas Night, between 7 and 8 p.m., station 2GB will broadcast special Christmas Carols and Christmas service from St. Alban's Liberal Catholic Church.

"WILDFLOWER": By permission of J. C. Williamson, Ltd., the first act of "Wildflower" will be broadcast from Her Majesty's Theatre, on Friday, 30th December, featuring Marie Burke and Herbert Browne.

"THE CHRISTMAS TREE FAIRY," the kiddies' pantomime at Farmers, is playing to capacity houses twice daily. This entertainment was originally intended for the youngsters only, but it was found the children could not come unless they were in charge of an adult, so the stipulation was made "with parent." "It is remarkable," said one of the officials the other day, "how many parents each child seems to have." There is to be a special gala performance on Tuesday, 20th December, which will be broadcast by 2FC.

FORWARD PROGRAMMES: During the month of January 2FC listeners are to have a steady routine of radio entertainment. The 2FC Studio Orchestra will play on Monday and Thursday of each week. Thursday night is to be the dance night, for which the 2FC Studio Dance Band, under the direction of Cec Morrison and Cyril Coy's Orchestra, has been engaged. Friday night is "Theatre" night, and an act will be taken from the leading musical play of the month, and there will be band music on Tuesday and Sunday. Truly a happy month to look forward to.

STUDIO REUNION: There is one night in the year that the management of 2FC unashamedly lay aside the all too prevalent cares of broadcasting, and frankly play at the game of radio entertainment. On New Year's Eve, when the old year, heavily burdened with the unrealised aspirations and blighted hopes of 365 days, betakes himself hopefully to Eternity, and a fat, cheery, little cherub, who has the audacity to call himself the New Year, hoves in sight, bubbling over with the promise of youth, united 2FC foregatherers en masse at the studio, and with song and story—and supper—make merry until the witching hour. It is rumored that Mr. H. P. Williams, who is ordinarily very shy of "Mike," will contribute this year to an already sparkling programme.



The Staff at 2FC with the birthday cake presented by the North Shore Orpheus Musical Society on the occasion of the fourth birthday of the Sydney station.

WELSH CHORAL SOCIETY: The performance of the "Messiah" on Saturday last was a mechanical triumph in choral transmission for 2FC, and reflects great credit on their chief Engineer, Mr. E. A. Burbury. In addition to the two standard microphones, one was suspended over the heads of the choir—which numbered 750 voices—which resulted in perfectly balanced volume. "Mike" comes in for very special attention in broadcasting of this nature, and to ensure the successful combination of dialogue and choral items, as many as four microphones are used for theatrical transmissions.

HUBERT CARTER: The famous New Zealand tenor, has contracted for a series of twelve appearances with station 2FC. The Hull "Eastern Morning News" says: "Mr. Hubert Carter surprised and delighted his hearers by the consummate artistry he possesses and fully justified the big reputation he has made since coming to England." His voice, clean and full-toned, is delightfully in sympathy with oratoric work, and he was associated with the Brighton Sacred Harmonic Society in "The Messiah" and with the Bristol Choral Society in "Elijah." When he appeared with the Torquay Choral Society in the "Hiawatha Wedding Feast," to quote the "Torquay Times," "His rich tenor voice rang through the building with the clearness of a bell. He was accorded a tremendous ovation."

COMMONWEALTH BAND: 2FC have been successful in arranging broadcast performances of Australia's own band from the Town Hall on Sunday evening, 18th December, and 25th December. Their concert recently held at the Town Hall will live long in the memory of an enthusiastic audience which filled the big hall to overflowing, and the disappointed hundreds, who were unable to gain admittance on that memorable occasion, will welcome the opportunity of hearing the finest band music Sydney has had to offer for some time.

DOROTHY McKEOWN, a young elocutionist of promising ability, and a new addition to 2FC artists, will tell the children the happy little stories so dear to their hearts on Thursday, December 29th. Madame Ada Baker's pupils amuse the "Hello Man's" small listeners regularly, with an excellent and varied programme, which speaks well for Madame's capable direction. The "littest" performer is Joan Punch, who, although only 4½ years old, is even now a decided radio attraction. Many are the letters which query: "When's Joan coming again?" "Hello Man" stands her up on a chair, because the suspended microphone is much too high, and she conducts an animated and very sensible conversation with him. Joan's mother thought she was too ill to come to the studio on the last occasion she was expected, but was flatly informed, "They couldn't get on without me!"

Handy Hints to Remember

LIGHTNING AND AERIALS: The erection of an aerial above a dwelling does not attract lightning. There is no danger from an aerial provided an efficient lightning arrester is fitted. They are quite cheap!

STATIC: The scratching and scraping noises heard in the loud-speaker are not always due to static or atmospherics. Disconnect the aerial and earth from the set, and if you hear the unpleasant sounds with the same volume, it is probable that the noises emanate from the receiver. Look first at the battery connections; they may be dirty.

A HANDY HINT: One lead from your speaker should connect to B-plus and the other to plate. If these leads are connected vice versa the magnets of your loud speaker will be weakened. In order to find which is the B-plus lead, disconnect the leads from the speaking unit, plug them in a potato which has been cut in half to show the white, then turn on the rheostats. The plate lead will make no difference to the potato, whereas the B-plus lead will turn it blue.

AN EMERGENCY TUBE REPAIR.

It sometimes happens that the grid of a valve touches the filament or, if the valve is mounted horizontally, the filament may sag on the grid.

When this occurs some remedy is necessary, for the set will not operate with the valves in that condition. If the grid has not stuck to the filament it can be jarred away by rapping the tube on the palm of the hand. At times, however, this is not sufficient.

If you are not sure whether the grid and filament are touching, or something else may be wrong, you can find out easily by connecting two volts from one coil of your storage battery across one of the filament contact pins and the grid contact pin. If one-half the filament lights, you may know that they are touching. Do not apply the full voltage, for that might burn out the filament with only one-half of it offering resistance in the circuit.

If the grid and filament are stuck together connect both filament terminals together and put two volts across the grid and filament connections. Then, while the filament is dimly lighted strike the tube on the palm of your hand gently. This will cause the grid to become disengaged. Then it can be jarred back into its place.

DRY JOINTS: A "dry" joint is a soldered connection which is not electrically joined owing to the presence of a thin film between the two metal surfaces. Such joints often appear perfect as far as can be seen, but generally a pull with a pair of pliers or a jar will expose the weakness. If in trouble look for "dry" joints.

THE "B" BATTERY: Run over the "B" battery occasionally with a voltmeter. A single run-down cell will often cause bad reception. If you have not a voltmeter use a small pocket lamp bulb. Short circuit all faulty cells, and rid yourself of trouble.

THE ECONOMIC "C" BATTERY: It has been found that a "C" battery will give your "B" battery a longer life by 75 per cent. As there is no drainage whatever on a "C" battery, this will last as long as if you put it on one side. "C" batteries only cost about 3s. The plus lead should be taken to A-minus, and C-minus should be connected to F-minus of each transformer.

AN EFFECTIVE EARTH: During the dry weather a moist earth is most desirable for all-round results. A simple, yet efficient, means of maintaining a good earth contact is to saw a kerosene tin in half, solder several wires to the bottom half in which there should be no holes, fill the tin with coke, and finally fill with a mixture of moist clay. Bury this earth about 2 feet in a position where it is likely to collect moisture, such as near a water pipe. The leads should be insulated and taken to the "E" terminal of the set. In this way, even the most dry periods will not affect the listener.

CELLULOID VARNISH FOR SELF-SUPPORTING COILS.

An excellent insulating fluid which can be easily made by the radioman has for its base celluloid. Drying very quickly, more so than shellac, it combines high insulating qualities with a beautiful gloss, strong body, not masking the original colour of the coil or instrument treated. The composition is made by dissolving scrap celluloid such as photograph film in acetone, which can be purchased very cheaply at the corner chemists. The photographic film should first be scraped of its gelatinous emulsion by immersion in lye water, hot water, or household "ammonia." The coating is then easily removed by scraping. The cleaned cuttings of the film are then shaken in a corked bottle with the acetone, more acetone being added if the mixture becomes too thick, or more celluloid if it has a tendency to flow too easily.

Coils, such as variometer rotors wound on forms and painted with the celluloid varnish, will retain their shape wonderfully, allowing very close coupling between it and the stator, this not being possible if a tube or other support were used.

EMPIRE BROADCASTS.

On the evening of December 15th, 2FC announced that 110 London's Sherbroke Station, which was testing, had been picked up at Pennant Hills. They were heard for five minutes, when the mechanic expressed his opinion that something had failed at the transmission end. Strength was excellent, 2FC are broadcasting an Empire programme on the dual wavelength of 441 and 25.5 metres at 4 a.m. on Monday, December 18th.

Prominent Citizens will broadcast special greetings to London, and from the Marly Beach a description of the surfers and Christmas tide will be broadcast—in direct contrast to the cold, snow Christmas spent in London.

BUSHING DIALS.

At times it is necessary to mount a dial or knob with a 1-in. hole on a 3-16th-in. shaft. After trying several methods, the following was found to be the most satisfactory and can be done by anyone without particular skill.

Take a length of bare No. 18 copper wire and wrap it snugly and closely around the 3-16-in. shaft. Remove the spring thus formed and dip it into molten solder, shaking off the surplus. When cool, a neat little bushing is complete and ready for use. Any high spots can be readily smoothed off with a file. Dials so bushed will turn true and even.

DRILLING PANELS.

It is sometimes hard to locate the screw holes for condensers and other instruments to be mounted on a panel without the aid of a drilling template. Here is a simple way to locate the position for these holes. Locate and drill the hole for the centre shaft of the condenser. Then place the instrument on the panel with the shaft protruding through the hole and rest it in exactly the position you wish it to occupy. Sprinkle a little white powder or flour around the screw bushings and then carefully pick up the condenser without disturbing the panel. The powder will form little circles, the centres of which may be marked with a sharp centre punch.

Christmas Celebration at 3LO

XMAS CAROLS: On Xmas Eve a special programme including Xmas Carols will be broadcast by 3LO, Melbourne. Xmas greetings from prominent relatives, public men and leading citizens will also be broadcast.

"SCROOGE": Xmas would not be complete without "Scrooge" and the Studio presentation of Dickens' great work is in the capable hands of Maurice Dudley this year. The cast includes Mrs. Maurice Dudley, Pat McLean, J. Howlett Ross, and other well-known artists.

BULL FIGHT BROADCAST: For the first time in Australia a description of a bull fight was recently broadcast by 3LO, Melbourne. The scene of the great event was the Depot of the R.A.A. Force at Laverton, and it was staged specially to amuse the children who were there at the big Xmas fetes. The bull was very ferocious—at any rate to look at—and the handsome toreador was grandly dressed in red velvet resplendent with gold braid. Of course, the whole thing was "make believe," and that is why the children—and grown-ups, too—enjoyed it so immensely. The inimitable Norman McCance gave a vivid and realistic description for broadcasting by 3LO, which gave much joy to listeners everywhere.

XMAS DAY: Broadcasting from 3LO, Melbourne, on Xmas Day will be featured with a special Studio Xmas Carol programme by the Auburn Methodist Choir, conducted by Mr. J. Sutton Cryer, in the morning at 10 o'clock. Later at 11 a.m. the service at the Collins Street Independent Church will be broadcast, whilst at 2 p.m. the Collingwood Citizens' Band will render a special studio programme, and Sisco Navarretti will sing. The Pleasant Sunday afternoon service will be broadcast from Wesley Church at 3 p.m., and in the evening, after the Children's Hour, at which Billy Bunny and Brother Bill will have something special to say to the children, and the Plez-Plezes will render some of their delightful numbers, the service at St. Paul's Cathedral will be broadcast, to be followed at the Studio with a Xmas Night programme—the Bells of St. Paul's will ring at intervals eight through the day, and altogether the Xmas Day programme will be in tune with the true spirit of the season.

SEASONAL WORK AT 3LO: With additional staff pressed into service, 3LO are obeying the injunction of the Post Master General to "Post your Christmas mail early," and when it is understood that at least twenty thousand Christmas cards are being despatched, it will be seen that the task is no light one—and calls for additional work and organisation. However—the studio is a happy spot, where things work harmoniously—and a little thing like the despatch of twenty thousand letters—though it might cause consternation in some quarters—is all taken as part of the day's work. Besides, there is the fascination of sending Christmas cards to listeners in lonely districts in our great Commonwealth, whose wireless set is practically their only link with this work-a-day world—and 3LO takes a special delight in conveying "the Season's Greetings" to "the uttermost parts of the Commonwealth."

"LOST HEARTS": A fairy play for children, which is seasonally appropriate, will be produced by 3LO on Xmas Eve during the Children's Hour by the pupils of Yetty Landau. The incidental music is by Miss Rosa Rosen, A.L.C.M. It is interesting to note that all the characters in the play are to be portrayed by children under 14 years of age.

DORATHEA MACMASTER.

Listeners will have noticed that during her delightful pianoforte recitals broadcast by 3LO, Melbourne, Miss Dorathea Macmaster has interpolated between some of her numbers explanatory remarks which have been greatly appreciated. These instructive comments lend a charm to Miss Macmaster's recitals, creating as they do a peculiar artistic atmosphere and a link between great composers and listeners. Miss Macmaster is a pianist of exceptional taste and skill, and her broadcasting from 3LO has been a distinct success.

FREE TRIP TO TASMANIA.

The drawing for the 3LO Free Trip to Tasmania was made at the Studio on Saturday, December 10th, by Cr. Felix Lloyd. There were over 23,000 entries, and the lucky winner was Mr. Ben Bottomley, of Clifton Grove, Coburg.

In an interview Mr. Bottomley, who is a foreman at the Lincoln Mills, Coburg, said that he could scarcely believe that he would have the luck to be drawn out of such a large number of entries. Ever since he came to Australia from England over seven years ago he had cherished the hope of some time making a trip to Tasmania, and now that the hope is to be realised so suddenly, he found it difficult to believe it. Mr. Bottomley's wife, who is a blonde Englishwoman, is naturally overjoyed at the prospect of the trip to the beautiful Southern State.

As a matter of fact it was through her that Mr. Bottomley sent in an entry. He said, "What's the use?—we will have no hope—but she said 'Someone has to win and we will have the same chance as anyone else.' And so, after a lot of persuasion, he sent in an entry—and won."

TIN HARES: Added to the sporting section of the broadcasting service of 3LO is the newest thing in sport—"Mechanical Coursing." Descriptions by Norman McCance are transmitted on Saturday evenings from the new coursing grounds at Tottenham—many people are wondering if Norman McCance with his inimitable descriptions will create as much interest and excitement among listeners as our tin hares, as he did with his remarkable stadium triumphs. Mechanical coursing is new to most listeners, and the novelty of it appeals to many.



Charles Burgess, world's one mile champion, who is to talk at 3LO Melbourne on Middle distance training.

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

J. ALEXANDER BROWNE.

It may be said with safety that no vocalist has been more prominently before the public lately with such consistent success than Mr. J. Alexander Browne. His repertoire is very extensive and varied, and whether his numbers be from grand or light opera or the popular lyrics he is equally at home and always sings with great sincerity and power, using his fine baritone voice with rare charm and effect to the delight of the many listeners of 3LO, Melbourne, where he has become one of the most popular broadcasting artists. Mr. J. Alexander Browne, besides appearing in the programmes at the big Australian station as a soloist, is a member of the famous "Pied Pipers" and "The Celebrity Four," and also appears in most of the important operatic productions at 3LO.

OLD FOLKS TREAT: "The best concert I have ever heard" was the wholehearted and enthusiastic opinion of each inmate of the Old Folks' Homes, when 3LO arranged a concert for their special benefit. And what a concert it was! Just the right kind of Christmas programme—including all the old songs, and carols—and a delightful talk on Christmas by Charles Nuttall. In passing, we might mention that no one else could have given such a talk—for M. Nuttall has spent Christmas in all parts of the world—Australia, England, America, Germany—to mention but a few places—and he knows how to make the most of his experiences, as was proved by his delightful talk to the old folks. Then the Huxham Sorenaders with old favourites like "Ora Pro Nobis" and the Brunswick City Band with the carols—nothing was omitted—and with the distribution of the gifts sent by thoughtful listeners—made a red-letter day for our dear old friends.

TAKING NO CHANCES.

The lantern lecture on "Wireless Wonders" was in full swing. Suddenly the lights flashed on the manager rushed on to the stage, stopped the show, and raised his hand for silence. There was a scared look on his face, and his voice was trembling with excitement.

"Ladies and gentlemen, there is no cause for panic, but there is a gentleman at the door flourishing a large revolver and demanding admittance. The door attendants are trying to pacify him, but they will be unable to detain him for long, as he has the advantage of being armed. He claims that some man is in here with his wife, and so to avoid scandal and bloodshed, will that man please leave by the stage door?"

Nineteen men raced pantingly for the designated exit.

LONG HAIR COMPETITION: Arrangements are still going steadily ahead for the "Long Hair Competition," further particulars of which will be shortly announced. For the benefit of new listeners and readers, we might mention that Station 3LO feeling that "good heads of hair" were surely but steadily on the decline—especially when the majority of us have fallen prey to the scissors of the tonsorial artist—is organising a competition for the express purpose of discovering the best head of long hair in the Commonwealth. When this is run to earth the hair will be photographed and classified—and a specimen kept, against the time when a head of unshorn tresses will be decidedly a thing of the past.

BABYLON: Babylon! The very name conjures up visions of barbaric splendour and extravagance! "Calligra" found much to claim her closest attention at the ruins of this city, once the foremost in the world. Cuneiform inscriptions and writings, with peculiar wedge-shaped characters, proved very mines of interest and information. Writings, believed to be the actual work of men known to us through the Old Testament, were examined by "Calligra," who found that characters as shown in the writings corresponded closely with what is known of their lives. Listeners to 3LO, Melbourne, have only to send in half a dozen lines of their ordinary writing, giving age and date of birth, and enclosing half-a-crown for the Melbourne Hospital Birthday League, to receive a character delineation from "Calligra."

XMAS AND NEW YEAR, 1927-1928.

To-night the ether waves from 3LO Bear joyful greetings wherever they flow:

We wish our listeners far and near,
A Happy Christmas and a Glad New Year.

We hope the kindly countenance of Fate Will smile on all in nineteen-twenty-eight.

May noble motives prompt each happy deed,
And high endeavors flourish and succeed.

To mothers, fathers, brothers, sisters,
All
May happiest reunions befall.

May all the homely joys of Christmas-tide
Attend our listeners scattered far and wide.

To those who lie in hospitals we send
The common wish that they may quickly mend.

And soon return to old familiar ways,
And friends who think of them their happy days.

To all Australians, whom we seek to please,
And listeners beyond the rolling seas,
From 3LO we give the wish sincere,
A Happy Christmas and a Glad New Year.

MUSIC EVERYWHERE: Step into the building in Melbourne Place that houses the studio and administrative quarters of 3LO and you will find a veritable hive of industry so to speak—walk down the long passage between the offices and you hear the everlasting click-click of dozens of typewriting machines. Then through double glass doors you enter the big rehearsing room. Here you will always find either a brass band, a jazz band or orchestra, or a choir rehearsing tirelessly for their turns upstairs in the big studios. These rehearsals proceed even when broadcasting is in progress—in fact, there is music everywhere at 3LO nearly all the time.

BERT HOPPING AT 5CL.

Bert Hopping, who is at present appearing in George Carney's Company of Comedians, has been engaged to perform for 5CL for a short season.

Big Bert (he weighs in the vicinity of sixteen stone) is a master in many arts and is known in Melbourne as the singing cartoonist.

His black and white work has appeared in many weekly papers for a number of years, and also in the official organ of the Victorian Buffaloes.

In addition to being a first-class cartoonist, he is a descriptive singer, monologist, comedian, and artist with water colours and has played for a long period in vaudeville with the combination of Hopping and Oakley.

He was guide, philosopher and friend to Fields and O'Donnell (The Two Rascals), and is a real vaudeville enthusiast, possessing one of the finest collections of theatrical photographs in this country.

When in the eastern States he was heard by listeners to 3LO, and when the voting on a popular concert took place, he appeared on the programme chosen as most popular.

He is at present appearing at the Theatre Royal, Adelaide, lecturing on Australian boxers in connection with the showing of the Dumpey-Tunney fight film.

When the present Australian tour is completed Mr. Hopping will accompany Mr. George Carney to England.

SYDNEY TENOR IS POPULAR OVER THE U.S. STATIONS.

Mr. Albert Jones, a Sydney dramatic tenor, has taken an extended tour through America and Europe. While in the United States he sang over various stations in San Francisco, Hollywood and Chicago. He became quite a favorite during his stay in the city of Chicago, owing to the delightful programmes given from KYW. He gave two farewell recitals with Miss Florence Farrar, contralto, who is also a Sydney girl.

It's All in the Air

Coming Features in the
Broadcasting Programs

GOOD CHEER AT 5CL: Laughter and interest are the keynote of the Christmas programmes at 5CL. The holiday spirit has been infused into every item, and one of the finest weeks of entertainment should be the result.

HIS EXCELLENCY Sir Dudley de Chair will broadcast greetings throughout Australia from his country residence at Sutton Forest, at five minutes past twelve on Sunday, January 1st, 1928. This transmission will be arranged by 2BL, who are also endeavoring to arrange for the G.P.O. chimes to be continued to midnight. Recently G.P.O. chimes were stopped at eleven p.m. owing to complaints received from nearby residents, who asserted that the chimes kept them awake.

PEACE ON EARTH, GOODWILL TO ALL MEN: On Xmas Eve, the carols will be broadcast from station 3AR, Melbourne, by the Royale Quartette Party, comprising: Merle D. Scott, Dorothy Eyton-Jones, Fred J. Walsford, and Chas. S. Trewavis, accompanied by Mr. Edwin Burchopp. Many a heart will swell as the strains old, yet ever young, go forth to thousands of listeners.

CHRISTMAS ARRANGEMENTS AT 5CL: 5CL is preparing something special for listeners on the night before Christmas. A special session is being arranged for the younger folk and vocal and instrumental numbers will be given. In addition, it is probable that a relay will be carried out from the starting place of Father Christmas. Make sure the children are listening on Christmas eve. The latter portion of the programme will consist of a concert, each item being given by a different artist. Everyone present will sing carols from 11 p.m. onwards.

OLD TIME NIGHT: Many elderly listeners to 5CL will be pleased to hear that a special old time night has been arranged for broadcasting from 5CL on Thursday evening, December 22nd. All the old favourites will be heard, in addition to old time dance music.

THE MAORI BOWLERS gave a novel five minutes from 2FC on Saturday night last. Their "war cry" was awe inspiring; one would certainly not think half-a-dozen perfectly respectable bowlers could produce such blood-curdling sounds. And they sent greetings to their folks in the homeland.

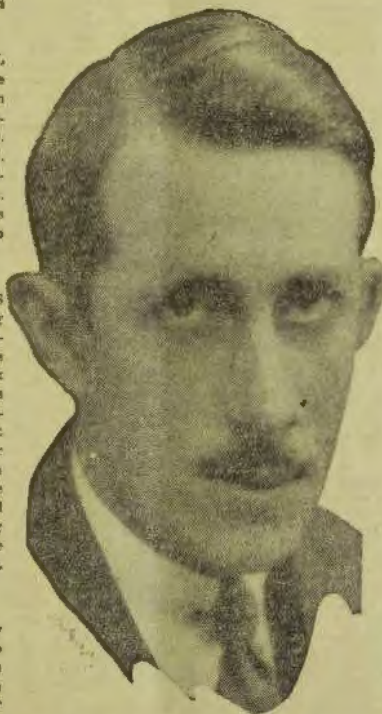
THE INIMITABLE "TWINKLER": In a few weeks the "Twinkler" (Mr. F. J. Mills) will have completed three years of continuous weekly broadcasting from 5CL, and will have contributed about 200 original humorous talks all delivered from that station. This is claimed as a record for Australia.

STATE SWIMMING CHAMPIONSHIPS: The State swimming championships, which will be decided in the Manly Swimming Baths on Wednesday, December 21st, will be broadcast by 2BL at 8 p.m.

On 21st December some selections from Dickens' "Christmas Carols," with choral accompaniment in carols as set out in Dickens' work, by the Silver-tone Carol Singers, will be broadcast from 3AR, Melbourne. There will also be chime effects, bringing in the atmosphere of Christmas in the time of Dickens. Among the scenes which will be featured will be "Bob Cratchit's Christmas Party," the "Death of Tiny Tim," and "Scrooge's First Real Christmas Morning."

ANDREW HIGGINSON & ENID LAVIS, entertainers, are appearing at 2FC on Friday, 30th December. They bring with them to the studio another small artist, who has yet to make her name on the Australian stage — their charming little daughter, Nova. She listens attentively to the loud speaker (which is placed on the floor for her benefit), mimicking in baby way the songs and patter familiar to her probably through much rehearsal, while she solemnly informs the assembled company, with an important nod of her head towards the glass doors of the big studio, "that's Mother and Father in there."

"IN THE BARBER'S CHAIR": Captain Fred Aarons gave an excellent topical conversation between the barber and an imaginary customer from 2FC studio on Friday last. The chief attraction of the dialogue, unrehearsed as it was, lay in its naturalness. Captain Aarons is remarkably versatile. He can handle with equal ease and authority subjects of national importance, without losing the common touch of the viewpoint of the man who cuts his hair. In the New Year he will continue the series, taking for his subject matters of every-day interest.



Mr. Arthur Hahn (Bimbo), who with Uncle Victor and Uncle George cause the kiddies endless amusement from 2GB.

Ask for the New 33X Philco Battery.

PROGRAMMITIS

BY
BILLY TEA

IT is always interesting to notice how easy it is to be led astray by a word, a mere word. Wireless has its shibboleths and its Mesopotamias just as every other topic of human conversation has.

The "Mere Word," referred to, that has so upset the appercat of wireless considered as a broadcaster of pleasure to the pampered millions is that word of dire import, that disturber of domestic felicity, that deharmoniser of public concord, that periodical calamity in ten letters that we call "The Programme." Let us consider of this for a little.

First of all, what IS a programme? To the average listener a programme is a collection of consecutive items put together for the entertainment of our leisure hours over an unbroken period known as a "Session." This definition may be a lexicographic inexactitude, but at any rate it infringes no copyrights and it puts the position clearly enough for our present purpose. We who listen to wireless take up our papers and confidently expect to find on some blessed page or other the important list of items that 3LO, Melbourne, has got together for our delectation this afternoon or evening, and after perusing it we invariably remark, first of all, "What a Rotten Programme!" It's no use denying this, Sir or Madam, I repeat we say just that, or at any rate mean just that, and all because we are bitten with the universal mosquito-bite known as programmitis. Show me any sort of programme whatsoever, and I find you'll shall at once fall on it more ferociously than ever black-thorn fell on shoulder, and all because of the most extraordinary misconception of what a programme, wirelessly so-called, is that ever afflicted the human mind.

For the gist of all this tirade is, that there is no such thing as programmes in the wireless sense. It's all very well for a concert promoter to sit down in cold blood a week or two beforehand and dash off a little thing of his own that he labels a programme, and send it to be printed for the livelihood of an audience numbering perhaps hundreds at a time. But we listeners number thousands and we are not going to be herded together in a public hall with red lights over all the exits. We are going to sit down in our own armchair by fire and icebox and have a little music and a little smoke and a little bridge and a lot of chat and knit a little, carve a little, paint a

little, wire a little wireless set a little, and so forth. Of what use is a set programme to all of us?

'Tis time the dilettante mutter that a programme should have a Beginning, a Middle, and an End; that its items should be in keeping each with each; that an "atmosphere" should coordinate all its parts; that if we begin with Bacon we should never end with Burns, and so on. My dear Fellow Listeners, between you and me, that is all well, at any rate, it's not done. You know very well that either you tune in some promiscuous item and put up with about two-thirds of it, or you lie in wait for a favorite performer and then switch off, or take a station here, and a station there, and attend to your own private concerns between whiles. You know very well, I say, that the household where all the programme is scrupulously attended to is a fatuous asylum for the inane. The most-to-be-pitied man in all Christendom is the announcer

who has to hear all that is put before him. You, dear listener, get from wireless exactly what you get from every other form of home entertainment, namely, your own particular selection of items, that is very, very rarely indeed a programme, any more than the meal you sit down to at home is a menu.

Will would it fare any listener who devoted session after session merely to listening in. Every blessing of modern civilization carries with it an attendant curse when it is over-indulged in, and wireless is no exception, but rather a most pronounced example of this universal rule. There are times and seasons when to listen and when to stop listening, and these are not to be fixed by 3LO, Melbourne, for you, but for yourself alone. If you are not in a mood to listen to all the programme, for goodness sake listen just to a part of it, for the part is greater than the whole.

Saturday Dance Night at 2BL

COMMENCING on Saturday night 2BL states that every Saturday evening in the future will be devoted to dance music from 8 p.m. until midnight. Between dance items light appropriate music will be broadcast from the studio.

"Realising that Saturday night is usually the night on which the public can arrange parties, we feel sure that this innovation will be much appreciated," states the management. "Listeners-in are invited to express their opinion in regard to this alteration of programme."

Nor is this the only change arising from the recent reorganisation of staff at that station. The following announcement has been made by the station:

"We desire to notify the listeners-in of two alterations to our daily programmes. In future the early morning session will commence at 8 a.m. and conclude at 9 a.m. The news service and information service broadcast by the two Sydney 'A' class stations is derived from different sources.

"We feel sure that this alteration will be greatly appreciated by the public, as hitherto neither of the two 'A' class stations were broadcasting

between 8 a.m. and 9 a.m. The second alteration refers to the evening programme and commencing on Monday (12/12/27), also the Country Session will be presented at 6.40 instead of 7 p.m. as hitherto. At 7 p.m. Dinner Music will be broadcast from the studio followed by lectures until 8 p.m.

"This new arrangement will prevent the overlapping of programmes and the simultaneous broadcast by both stations of market reports. The listeners-in will have the choice of select Dinner Music from both stations from 6.30 p.m. until 7 p.m."

NEW DANCE BAND: A new jazz band recently introduced to 5CL is Durnell's Melody Makers. This combination presents the latest and most up-to-date jazz, and the first appearance of this band immediately gave indications of many more. As experts in synopsed melodies, Durnell's Melody Makers point out that they have no connection with the dictionary definition of that word—which according to Mr. Webster—means "moving swiftly from bar to bar."

Resistor Development has Long History

ONLY during the past two years has the fixed resistor assumed its present role of importance in radio work. It is true that fixed resistances, had been used, but they were of a type that limited their value to circuits where small loads were imposed. Carbon coated paper and the composition resistor practically dominated the radio field.

The radio public first had its attention called to the importance and value of efficient resistors when the current supply unit and high voltage power amplifier came into widespread popularity. The average experimenter began a search far and wide to find a resistor suitable for this type of work, for he realised that makeshift and inaccurate resistors would not stand up in this service.

No one who has an intimate knowledge of power amplifier equipment and power supply units will question the statement that the resistor, in the last analysis, is the determining factor in the performance of units of this type. The resistor is called upon to absorb voltage surges when valves are shifted in the receiver while the current to the supply unit is still on. Fluctuations in incoming line voltage may place an added load on the resistor, which it must carry. Other factors unite to place on the resistor the burden of keeping the power supply unit working at normal, even though outside factors may impose severe and abnormal conditions on it.

Development Dates Far Back.

That certain resistors have reached their present high state of perfection is no matter of chance or casual planning and production. Although the public has given serious attention to the applications and many uses of resistors in radio work for but a few years, electrical engineers have used and studied resistors extensively even prior to 1890. Many different types of winding were tried, many kinds of binding material were used to coat the wound wire, hundreds of varied methods were worked on to produce a resistor which would give constant, unflinching service without change in resistance value.

Years before fixed resistors were used for radio work the electrical industry settled the question and adopted a wire-wound type of resistor with the wire embedded in enamel as the resistor which would not deteriorate or change in value with long and constant use.

Early Work.

A number of methods had been tried prior to 1890 whereby a metallic conductor could be operated as a resistance at high temperature, thus reducing its bulk for a given dissipation. In many of these experiments was the germ of what is now one of the most popular and efficient resistors—a wire protected by a vitreous enamel, so that the wire could be used without exposure to air, which would cause it to oxidize.

Among these early experimenters was Albert T. Herrick, who tried among other materials plaster of paris and portland cement as the insulator binder. He found, however, that the dissipation was reduced. The silicate and sulphates from these substances also combined with the wire at high temperatures, and eventually destroyed the resistance element.

Many substances were tried as electrical insulating and binding material to prevent the chemical action of the air on the resistive material. The difficulty lay in eliminating the spaces of dead air between wire and binder.

Practically all substances seemed to enter into combination with the wire, as Herrick found. In addition to this, most of the materials were brittle and moisture absorbing. They were also apt to cause ruptures in the resistance wire, due to differences in the expansion coefficients between the binding material and the wire. The problem before research men was to find an insulator binder which would protect the resistance wire, yet make intimate bond with it, thereby eliminating dead air space between wire and binder. At the same time the binder must not destroy or affect the resistance wire. Further, it must be impervious to moisture and all other atmospheric actions.

It remained for H. Ward Leonard to perfect thirty-five years ago an embedded type resistor which others had sought in vain and which was free from the disadvantages considered inherent in earlier type resistances. Since that time the fixed resistor has found dozens of new and valuable uses, including its many applications to radio work.



Harry Kaufser (chief engineer) and W. C. Smalacombe (Assistant Manager and Uncle Radio) of 6CL at a recent outdoor broadcast.

LEAKAGE IS ENEMY OF GOOD RECEPTION.

By K. B. Humphrey.

VERY often when two radio receiving sets are compared one will be found to give exceptional results and the other will give very poor results. A comparison of the circuit used, number of valves, etc., reveals no one thing which would cause any great variance in the results which should be obtained. When a comparison reveals results such as this the trouble is very likely due to leakage.

These leaks may be of a very minute order and many times do not show up by inspection or even by testing with an ordinary voltmeter and battery. They are extremely small, yet when they are all added together and when we consider that the radio current themselves are very small the overall efficiency may be reduced to a very noticeable extent. These small leakage paths are most likely to give trouble in the radio frequency circuits or in the high voltage connections in the receiver.

There are certain places which will give more trouble than others. The socket used to hold the valve is one of them. If there is the slightest leakage between the plate or grid to the filament or between the two a distinct loss may be expected. Leakage at this point is caused usually by one of two things, surface leakage or leakage through the insulating material. Surface leakage may be caused by dust or dirt, and a great improvement may be made by simply giving the socket a good cleaning. Leakage through the insulation is more rare, but in some sockets it is enough to cause a serious decrease in signal strength. The author has seen sockets which would pass as high as 2 milliamperes from grid to filament with a hundred volts across it. Such a socket would naturally cause extremely poor reception.

Any leakage in the high frequency circuits will cause loss of selectivity and loss of voltage and is equivalent to introducing resistance in the circuit. The same leakage paths are as likely found in poorly designed or constructed variable condensers as in sockets; that is, surface leakage due to dirt or to poor insulation. The coil also will sometimes be found to be defective. In the case of coils of the basket weave or self-supported types a leakage occurs between turns, especially noticeable when there is considerable moisture present in the air. This trouble may be remedied for a short time by a thorough cooking and drying in the oven. Coils

CHRISTMAS DAY ARRANGEMENTS.

2 P.M.—10.30 a.m.: Bells of St. Mary's.
10.50 a.m.: Service from Christ Church, St. Lawrence.
2.45 p.m.: Sacred Concert, Lyceum Hall.
6.30 p.m.: Petersham Congregational.
8.45 p.m.: Captain Harley.
2 P.M.—11 a.m.: Chalmers Presbyterian.
8 p.m.: Central Methodist Mission, Newtown.
7 p.m.: St. Jude's C. of E.
8.47 p.m.: Marjorie Skill (Bagrano).

which have a protective coating of colodion very seldom give trouble of this sort. Dirt and dust are always liable to cause trouble, and every receiver should be thoroughly enclosed.

Another thing which tends to aggravate the trouble from surface leakage is presence of solder paste. Some of the pastes have a petroleum base which while not a direct cause for leakage is an excellent collector of dirt. The use of acid for soldering if not thoroughly removed will sometimes eat away the insulation. All these things will contribute to a poor wet and poor results.

Valves, too, sometimes cause trouble. A gaseous valve will allow a certain amount of current to flow through the grid and is equivalent to a high resistance leak. The R. F. valves should always be run with considerable negative bias for best results.

A leakage in the high tension wiring or B leads will also cause trouble in a receiver. These leaks may occur at any point where the high tension leads come in contact or close to a low tension lead. Most of the apparatus, such as transformers and coils of the manufactured variety, are insulated in such a fashion that very little trouble occurs. The trouble usually is found in the wiring. This is especially true where cabled leads are used throughout the set. While there are certain well-known advantages to cabling (such as the lessening of coupling between stages), a good insulated wire must be used. A cheap grade of wire or insulation will allow leakage, which will gradually increase with age until an actual short-circuit occurs.

SUNDAY PROGRAMMES: Letters in continually increasing numbers are arriving at 5CL regarding the Sunday programmes. Without exception every correspondent comments on the nature of the items rendered. In completely cutting out secular items, 5CL have obviously acceded to the popular taste.

COMEDIAN STARTED LIFE AS PROGRAMME BOY.

Paul Daly, leading man with George Carney's company of comedians, has had a varied and interesting career.

He commenced as a programme boy at the Lyceum Theatre, London, where his special duty was to attend to the needs of the gallery patrons. Time after time he tried to get a transfer to the dress circle or stalls, where good tips are to be made. When young Daly asked the manager one day for a move, he suggested that the move Daly was most likely to get was "out," and sarcastically suggested that his next request would probably be to go on the stage.

Strange to say, five years later the programme seller was appearing on the stage, and the name of Paul Daly was to be seen on the very programme he used to sell.

Mr. Daly will be heard for a short season from 5CL.

FUN AT FOY'S: On Saturday, December 3rd, a gathering of well over 2000 children and many adults were entertained on the second floor of Mark Foy's new building by Uncle George of 2GB and by many of his little radio nephews and nieces. Uncle Vinty and Blimbo were also present, and their antics sent both young and old into fits of laughter.

Mr. Foy, opening this first occasion with a speech, said he was pleased to donate the space gratis, as he was almost as interested as Uncle George in children, and was ever ready to do anything to help them. Uncle George then called for three hearty cheers for Mr. Foy, and the shrill voices of the youngsters reminded wireless fans of oscillation with the 'phones on.

WATERFALL CONCERT: Someone once remarked: "Christmas is an annual touch of that universal brotherhood which is the high hope of our race." With Advent, our thoughts naturally turn to the doctrine which, if we are to believe the cynics, becomes harder to put into everyday practice, if we are to keep afloat in the rushing tide of human progress, as the years go on. But there are these cast into a tragic backwater by sickness and suffering, who reckon little of the busy word, and for these people particularly are the sympathies of Station 2FC quickened. On Saturday, 17th December, a gay concert party are going to Waterfall Sanatorium, under the capable direction of Rue Garling. The artists include Peggy Dunbar, Laurence Halbert, Ernest Archer, Carlton Fay, Shirley Cooke, R. A. Bartleman, Brunton Gibb, Rene Barkett, and R. B. Orchard.

What do we Gain by Low Loss?

By F. H. ARMSTRONG.

THE real difficulty to the radio experimenter is not whether low loss is an advantage, but to know when he has such apparatus on hand.

Let us take a low loss coil, one of about 200 microhenries, which is somewhat of a normal size. Now the old-fashioned coil of this size was usually wound with solid wire in one layer and had a resistance of about 12 ohms, at 400 meters. To-day a coil is wound with stranded wire carefully spaced and containing a resistance of about 4 ohms, measured under the same conditions, a gain of three to one.

Modern receivers usually demand arrangements to prevent induction between the different coils of the receiver and these arrangements have a habit of increasing this resistance considerably. For instance, an astatic coil system will have at least 6 ohms resistance as against 4 ohms, with the normal coil, unless more space is allowable. Again shielding will add a perfectly indefinite number of ohms, which can be found by accurate measurement.

If these added ohms were proportional to the original ohms, the advantage would still be toward the low loss coil, but, unfortunately, they are only added. Thus a 4 ohm coil becomes an 8 ohm coil when wound astatically and shielded, while the ordinary coil goes from 12 to 16 ohms, so that the gain of three to one becomes only two to one.

Measurements of resistance are very difficult to obtain, so most experimenters will have to resort to trial to find the best arrangements. A few rules can be given which will help to maintain low-loss values in coils.

First of all, single layer cylindrical coils of two to three inches in diameter, with preferably a slight spacing between the turns, are as good as any, and if a wire such as enamelled 35/44 is used, with great care taken to connect every strand, no purchasable coil could beat it.

Dry cardboard is as good as any material for winding coils on, but it is always preferable to leave the coils dry, because unless tests are made of resistance afterward the influence of the varnish may be bad.

Coils can be wound astatically in several ways, examples being given in A, B, and C in Figure 1. A has some advantage in that by making

the two halves of the coil movable relatively to one another a small variometer action is possible, enabling circuits to be matched on their condensers.

About Shielding.

Shielding is the latest fad, but a very useful one and a very interesting point is to be noticed here. An

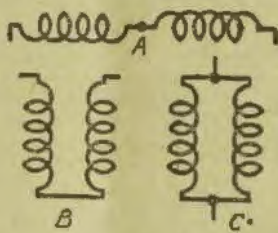


FIG. 1.

astatic coil, having already a small magnetic field, will induce smaller currents in the shielding case, so that the losses in the shielding will be less with astatic coils than with ordinary coils. A series of tests indicates that the total losses in shielded astatic coils are less than in shielded non-astatic coils.

When every rare is taken we can assume that shielded astatic low loss windings are at least as good as old-fashioned coils without the astatic and shielding arrangements, and in many cases can be taken as twice as good, so that from this point of view of multi-valve receivers we have gained considerably.

On the shorter wave lengths under 150 meters it is doubtful whether anything will beat a coil wound with solid wire rather openly. Low loss condensers are now a very common subject, and, in fact, one might say that practically all but the very cheap variety have but very little loss.

Where Do We Gain?

In the normal broadcast band, say, from 200 to 550 meters, a low loss coil in the aerial circuit will probably show a gain of 15 per cent., while with a very good aerial a 50 per cent. gain may be noticed.

Intertube circuits are the places where the low loss coils will tell if they are used correctly. A coil of

half the loss of another will have a tendency of amplifying almost twice if the tubes are altered to suit and 1.4 times the amplification if the transformer ratio is altered. If we have several such circuits in cascade the total gain can be made very large.

MAGGIE FOSTER.

ONE of the most talented and delightful of our younger violinists is Maggie Foster, who is returning to Melbourne to broadcast for a brief season after a most successful tour of Australia.

Rarely has an artist become so popular both on the stage and by broadcasting from 3LO, Melbourne, as Maggie Foster. Listeners love the quaint personal whimsiness so characteristic of her appearances on the stage and platform, but she makes up for this with her unseen audiences by imparting a distinct charm to her broadcasting, to which much of her success is due.

"The very first thing I remember about the violin," said Miss Foster, "was that a friend of ours had a little violin—child's size—and she wanted my mother's permission to teach me to play. For a long time my parents refused, but as the friend was so persistent they at last gave way and let me learn with the idea that I might possibly use myself at first, and, later on, entertain others. That I would ever do anything with my music never once entered their heads, and it came as a great surprise all round when I secured my first engagement.

"Regarding my music, I suppose I am a little old-fashioned (I haven't even cut my curls off; in fact, they seem as much a part of my 'act' as my music), but I am very fond of old melodies, especially when played on muted strings, and I always make a point of including as many of these as I can in my programme. On one occasion, at a Bush concert, I played "Silver threads among the Gold," and, at the conclusion of the piece, an old man stood up and called out "God bless you, girlie," which, to me, was the sweetest praise I have ever received. Of course, where the audience warrants it, I play classical selections, but for myself, I love the familiar old tuneful melodies, and, by way of diversion, I introduce the "bugpipes" and imitations of a canary trilling—anything for variety."

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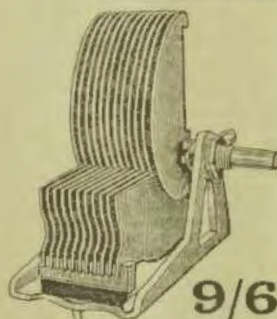
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Described in this issue.

	£	s.	d.
1 Polished Hard Rubber Panel, cut true, 18 x 7 x 3-16	0	6	6
1 Aladdin Special 3 Coil Tuner	0	14	6
1 Ajax 6 ohm. Rheostat	0	1	10
2 B.M.S. Bakelite Vernier Dial, n: 779	0	15	6
1 B.M.S. Push-Pull Battery Switch	0	1	6
1 B.M.S. Single Circuit Fantail Jack	0	1	7
1 Eco S.L.F. .00055 Condenser	0	10	0
1 Advance S.L.F. .00025 Condenser	0	9	6
3 Eco Bakelite UX Sockets, at 1/2	0	3	6
1 Radioka Radio Frequency Choke	0	8	6
1 Wetless Condenser, .00025, with Clips	0	1	9
2 Emco Audio Transformers (or A.W.A., at 18/- each), 17/6	1	15	0
1 Terminal Strip (Bakelite)	0	0	6
9 Engraved Binding Posts	0	3	0
1 Domet Round Blawire	0	0	11
2 Lengths Best Spaghetti, at 5d	0	0	19
TOTAL	5	14	11



9/6

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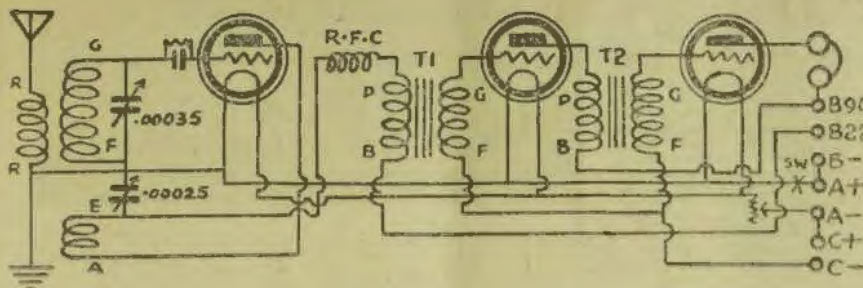
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THE WEAGANT THREE

ONCE again a three valve receiver is to be described. There are many possibilities with the average three valve receiver, and while it must be admitted that such a receiver is essentially good for local reception of stations at reasonably good loud speaker strength, it is yet even possible that inter-State stations may be heard at even weak loud speaker strength. It is not inferred of course, that every three valve receiver is capable of yielding loud speaker results on the inter-State stations. This may be possible perhaps during the winter season, and while not impossible in the summer months, is perhaps improbable. This state of affairs is brought about by atmospheric conditions. It is generally an accepted theory that inter-State reception is more difficult during the summer months, than in the case in the winter months. For many reasons winter time reception of inter-State stations is much simpler than summer time reception from the same stations.

Weather conditions play a most important part in this matter. During summer one cannot overlook the fact that inter-State stations may be received subject to attendant static, and while this static plays a most important part in preventing satisfactory inter-State reception on the loud speaker, it is even possible that earphone reception may be had from inter-State stations with a properly designed three valve receiver. It must be admitted, of course, that while winter is the ruling season, the self-same three valve receiver about to be described can and actually will deliver a reasonably good volume from the inter-State stations. This country is not in any way different from

any other country on the face of the earth as far as the long distance reception is concerned in summer time. In every country in the world it has been noted that reception during hot weather is not nearly so good as is obtained during the colder seasons of the year, and bearing this fact very much in mind, this week's receiver is

introduced to you as being typical of all receivers in their results during the summer period.

CHOICE OF CIRCUIT.

Ask any old established wireless enthusiast and he will tell you that the well-known standard PI receiver is perhaps the most sensitive of all receivers in which the detector valve is the first valve, that is the detector valve. The same person will also tell you that the only draw-back to the PI receiver lies in the fact that it is subject to very broad tuning, that is to say, all the local stations may be heard at excellent strength, but unfortunately, the inter-State stations, so much sought after are inclined to be mixed up with the local stations, and often with other stations.

This points out an important factor which must not be overlooked that the old PI or single circuit regenerative receiver is extremely sensitive, and as such, it is necessary to go a long way to beat it. The one drawback, and it is a big one, lies in the fact that while being extremely sensitive, the PI is not at all selective. This brings us to the most important factor, that of selectivity.

Selectivity.

Selectivity cannot be overlooked with any receiver. It often happens—and this is true—that a receiver may be extremely sensitive yet not selective, and the contrary is true that a receiver may be selective yet may be far from being sensitive. The idea always is to use some sort of receiver wherein the sensitivity and the selectivity is more or less balanced. It must be admitted that it is difficult to arrive at such a re-

LIST OF PARTS FOR WEAGANT THREE.

Although the parts listed below are 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 exactly identical in other words of similar quality and technical value should function quite satisfactorily.

- 1 Diectec or Hard Rubber Panel, 15 x 7 x 3-16.
- 1 Aladdin 3 Coil Tuner.
- 1 6 ohms, Rheostat.
- 2 Pilot Art-craft Dials.
- 1 Emmeo Battery Switch.
- 1 S.C. Jack.
- 1 Emmeo Stratelyns Condenser, .00035 mfd.
- 1 Emmeo Stratelyns Condenser, .00025 mfd.
- 3 Valve Sockets.
- 1 Radiokes R.F. Choke.
- 1 Wetless .00025 Grid Condenser, with Clips.
- 2 A.W.A. Superaudio Transformers.
- 1 Terminal Strip.
- 9 Terminals.
Randries, Suabar, Serevia, etc.

ceiver, as it invariably happens that to gain both sensitivity and selectivity, it becomes essential to lose one or the other to a certain degree.

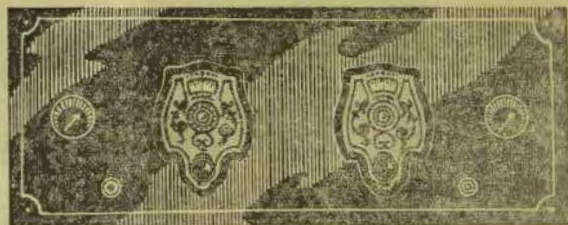
A variation from the PI receiver in the standard three coil regenerative receiver, which may or may not make use of an aerial circuit tuning condenser. Experience tells us that the aerial tuning condenser may be omitted without any undue loss of sensitivity while at the same time it retains the properties of selectivity. This standard old reliable receiver has its drawbacks, inasmuch as it depends very greatly on the reaction system to make it both sensitive and selective. To overcome this requires a certain amount of thought.

Reaction.

It has been said over and over again, and in saying so, it has been partly true, that the accepted form of Reinartz reaction is one well worth while. This is certainly true, but the fly in the ointment lies in the reaction control. It must be admitted that irrespective of what type of Reinartz reaction control is used a certain variation in the wavelength of any given station has to be met with when reaction is applied in order to increase the volume from that station. The circuit employed in this receiver, is not quite new, in fact, is quite old, and is known as the Weagant system, the main advantage of which lies in the fact that reaction control does not in any degree interfere with the wavelength to which a receiver is tuned.

This particular circuit is one that has been tried and proved to be worth while for almost three years. Therefore, the writer has no hesitation in recommending it to even the veriest beginner. It is an accepted practice that this circuit is of extreme interest, on the short-waves ranging between 15 and 135 metres, so that it necessarily follows that if this receiver is capable of excellent reception on the ultra short wave band, it must be worth while using on the broadcast band.

That this is as is proved by actual results. The reaction system is



slightly different to that of the Reinartz or even the Hartley type. Look at the circuit diagram and prove this for yourself. The outstanding feature of this receiver even in the broadcast wave-band, is that after a given station has been received, no matter what amount of reaction is fed back to the grid of the first valve, the wavelength of the station being received is not interfered with in any way.

This is a most important factor, particularly during the summer months, where it is very difficult to receive consistently Inter-State stations on any three valve receiver. The Weagant is one receiver which will go a long way to making possible the reception of inter-State stations during summer time, although it is not put forward as being a receiver which is certain to produce these results at any time or even at all times.

Layout.

It often happens that to achieve these results it is necessary to resort to a most peculiar layout. In this instance, this is not quite true, as the layout is quite orthodox, and is really speaking, exceedingly neat. The front panel illustration proves this to be the case. There can be seen the two Pilot Art Dials, which are used as a vernier control on each of the two variable condensers. On the left hand side of one of the dials is found the knob, which controls the reaction coil of the Aladdin Tuner. This Aladdin Tuner is a very worthy component, it lends itself to many different circuits, and incidentally, too,

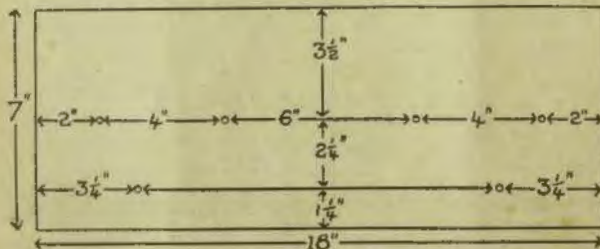
makes this wonderful receiver possible. It is a very well designed article, taking up very little space, but its functioning qualities are of a very high order.

To the right of the second dial is seen the knob for the 6 ohms rheostat, which controls all the filaments of all the valves. While 6 ohms resistance is specified, if the constructor prefers to use such valves, as make use of .06 or .1 of an amp, each in the filament consumptions, then a 30 ohms rheostat will serve the purpose admirably.

A circuit diagram points out that the well-known system of transformer coupled audio frequency has been found successful in this receiver. The writer makes no bones of the fact, that excellent tone has been produced and wonderful volume has been made possible, with this system of audio frequency, and recognises, of course, that there are many readers and prospective constructors who prefer to make use of some other system of audio frequency amplification—to these people it will be left to choose their own particular system. Suffice it to say that the scheme used here with the detector valve is quite novel, and is not affected by any system of audio frequency amplification which may be employed.

Construction.

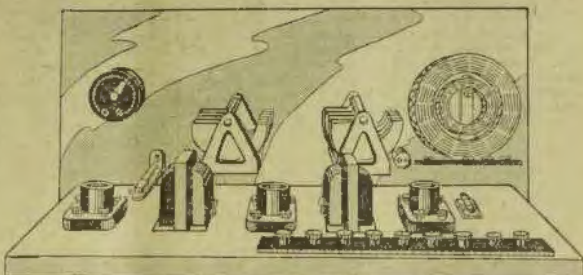
The construction of the receiver, presents very little difficulty. The front panel view shows just how this set should look after it has been completed. It, of course, has to be realised that there is a certain amount of work necessary before this effect can be produced. Firstly, the panel must be drilled to accept the various components. The panel drilling diagram gives an indication of just the distances recommended on the panel to accept the various components. Lay the panel on a flat surface, and with a centre punch, or even a nail, for that matter, mark out the panel. Some people prefer to draw a full size template of the panel with the correct measurements as shown in the diagram. The absolute beginner can hardly do better than to accept this



scheme, and having successfully drawn out this template, lay it on top of the panel, and, keeping it securely in position, use a centre-punch, and mark out the respective positions of the various components, it must be accepted, of course, that in our drawing there is no provision made for the fixing screws of the variable condensers, nor the cat-screws for the vernier dials. These positions must be determined by the constructor himself, as are the positions for the screw holes required through which the panel is attached to the baseboard. Now drill the panel, bearing in mind, of course, that a high speed and a light pressure accomplishes much.

Next, mount these panel parts, noting carefully that you have the different size condensers in the correct place. It sometimes happens that a certain jack to be used requires a fairly large hole. Possibly, too, the constructor has not the correct size drill or a drill big enough for the purpose. If such should be the case, then use a rat tail file and enlarge the hole. Sometimes the use of a three-cornered file as a reamer will settle a difficulty of this kind.

Prepare the baseboard by trimming the edges and give it a coat of shellac. When thoroughly dry place the parts on the baseboard and screw each of them in position as shown on the plan view. Mount the Wireless grid condenser directly on to the G terminal of the detector valve socket and bring the other end of the con-

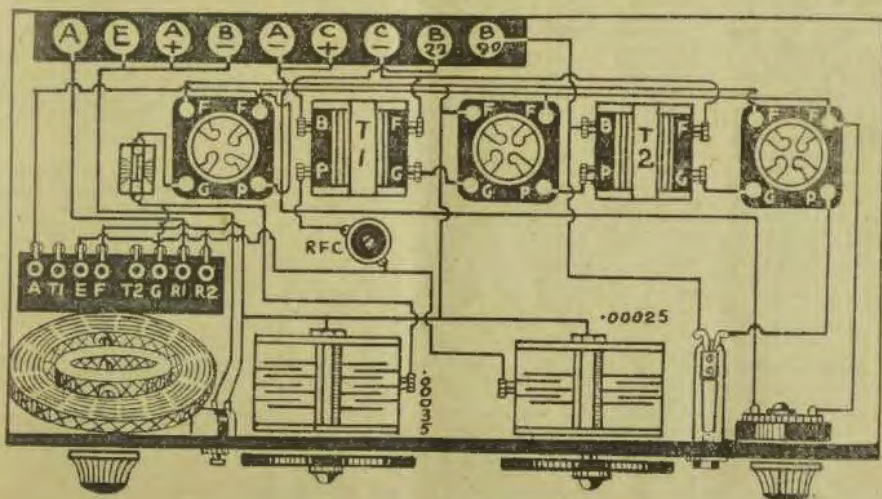


denser back in such a way that it is close to the G tag of the Aladdin tuner. The baseboard, of course, should be screwed to the panel.

Wiring.

Now commence the wiring. Begin by linking up one F terminal of each valve socket, then continue this lead to one side of the switch to the other side of which take straight through E, A positive and B negative on the terminal board. The nearest point to the moving plates of both variable condensers continue this connection. Note that this A positive wire runs from R2 and F of the Aladdin Tuner as well, then make connection with the moving plates of both variable condensers to the earth terminal, the

A positive terminal and the B negative terminal with the switch breaking in between. Now link together the remaining F terminals of each valve socket, take a connection to one side of the rheostat, joining the other side to the A negative and C positive terminal. Now connect aerial terminal to R1 on the Aladdin Tuner. The fixed plates of the 00035 variable condenser join to G of the Aladdin Tuner, and to one side of the grid condenser and grid leak is connected directly to the G terminal of the detector valve socket. Now connect P of the detector valve socket to A of the Aladdin Tuner, joining E of this tuner to the fixed plates of the 00025 variable condenser, and also to one



side of the Radiokes choke. Join the other side of this choke to P of the first audio transformer. Join G of this transformer to G of the middle valve socket. Join G of the second transformer T2 to G of the last valve socket. Connect together the F terminals of both audio transformers and continue this lead to the C negative. Join P of the middle valve socket to P of T2. Now from the B positive 90 volt terminal on the terminal board, run a busbar to B on T2 and continue this right to one side of the jack. Join the other side of the jack to P of the last valve socket. From B positive 22 volt terminal take a connection to B of transformer T1. This completes the wiring. Check it very carefully.

This wiring should be carried out with busbar, spaghetti covered wire, just to suit the wish of the constructor. It will be noticed that there is no connections made to T1 and T2 of the Aladdin Tuner, these connections not being used in this particular circuit, and as this tuner may be adapted to many different tuners, these soldering lugs are present. It will be noticed that only one rheostat is used to control the filaments of all three valves, but if desired this rheostat may be used for the detector valve only, and Amperites to control the other two audio valves.

Valves and Batteries.

The range of valves suitable for this receiver is a wide one. Radiokes Radiotrons, Philips or Mullard valves all are suited, although on actual test Mullard valves were found useful. For the detector in the first audio PM3 valves were used with a PM4 in the last stage. The plate voltages on these valves were 45 volts on the detector, that is to say, you connect 45 volts on that terminal marked B22 and 90 volts for the audio, this being the connection made to the B positive 90 volt terminal. A 41 C battery sufficed for grid base purposes.

There is no reason in life why different voltages should not be tried on the plates of the valve. Very often this makes all the difference in the world to your receiver, and as all naturally expect to get the best out of any set, then one is repaid for the trouble in trying different voltages.

Tuning.

Connect the aerial and earth and plug in the loud speaker, press the battery switch to the on position, turn the rotor of the Aladdin Tuner at right angles to the stator, then tune in with the 00035 condenser. See that the rheostat is set in the correct position, one of the local stations will quickly make its presence known, bring it up to the loudest point with this larger condenser, turn the rotor back into the stator as far as it will go without setting up oscillation. Now turn to the 00025 variable condenser

and adjust this until best volume is received. Carefully tune with the rotor and this reaction condenser, balancing them up nicely, then give a final touch to the main tuning condenser that is a 00035. It may take half an hour or so to thoroughly master the relationship between the rotor of the tuner and the reaction condenser. It will be found this receiver is extremely selective, and with an aerial, say, 60ft. long overall a certain strength of interstate station will be brought in. It requires careful tuning to do this, of course, and no one unless he is an experienced man can tune in interstate stations the first night or so. It takes just a little while to master the handling of any receiver, and this one is by no means an exception.

On actual test at Murrickville, every one of the local stations were had on the speaker at remarkable volume and clarity. By careful tuning, BLO could be had very softly on the speaker, but sufficient to be heard.

4QG also romped in, but unfortunately the distortion from this station rendered reception anything but a pleasure; the fault does not lie in the set.

This receiver is an excellent three valve, and will be found an all-round, efficient little set, which is not difficult to make and which will give splendid results on stations of a wavelength between 200 and 600 metres. The Aladdin Tuner is a very neat unit, and by adoption can offer credits be made with just simply altering the wiring. Here is quite some interest for the person who is of an experimental turn of mind, as the alteration of a few wires on the detector side will give other circuits and comparisons can be made on the relative efficiency of different circuits. It is not an expensive receiver to build, and is certainly very neat looking, but that which counts more than anything else are the wonderful results which may be had from it.

No Lack of High Class Music

WHILE it is true that every radio listener has likes and dislikes in regard to the programmes presented by the broadcasting stations, it is equally true that more is said by most listeners against the items they dislike than in favor of those they like. Opponents of jazz are particularly active in their criticisms, but a record of the programmes for a few days shows that there is no dearth of "high-class" music.

For instance, take last week but one. On Sunday, Madame Lilan Gibson, the noted contralto, sang over the air songs by Beethoven and Mendelssohn, and also the world-famed "Ave Maria" from that delightful opera, "Cavalleria Rusticana." Paul Vinogradoff was heard in classical piano selections, drawing his items mainly from Chopin, Liszt and Mendelssohn, while Miss Margaret James contributed numbers by Handel, Travers and Squire. On Monday, Alfred O'Shea, the foremost Australian tenor, gave listeners an outstanding recital, his principal items being the Aria from "Romeo and Juliette" (Ground), "Your Thy Hand is Frozen," from Purcini's romantic "Le Boheime," "Life and Death" by Coleridge Taylor, and songs by Tom Moore, the Irish composer.

The concert portion of the annual reception by the Royal Colonial Institute, which was broadcast, included noted artists such as Madame Vera Tasma, soprano; Alexander Sverjensky, pianist; Jules Van der Kleef,

cellist; Alfred Cunningham, tenor, and Charles Lawrence, organist.

On Wednesday evening, the first part of the programme to be broadcast by 2FC was given from the Conservatorium of Music, where the State Orchestra played symphony music well known to the lovers of all orchestral work. Lionel Lawson was associated with the orchestra in Vaughan Williams' "The Lark Ascending," a tone poem written for violin and orchestra. The second half of the evening's programme was taken from the Peace Hall, Rose Bay, where the third monthly concert, directed by Mr. Oliver King, took place. Artists appearing on this occasion included Alfred Cunningham, Kenneth Hunt and Gerald Walcott.

On Thursday a special programme was arranged to suit all listeners, and ranged from the classics to jazz. "He, She, or It," a novelty group made their second appearance since arriving in Australia; Harrison White and his band helped entertain all and sundry, and Wilfrid Thomas, the baritone of the "Sparklers," sang favorite numbers.

Frank Hutchens and Lindley Evans were heard in two-piano items from the Beale Concert Salon, and H. W. Varna and Company presented from the Studio a radio version of "Nothing but the Truth."

These facts should satisfy lovers of music that the radio programmes contain enough for any reasonable person, because this review of one week is equally applicable to any other.

Tracking Down Trouble

Sparks, Accidental or Otherwise.

This ends the summarization of the report turned in by the Electric Light Association's engineers.

By this time any reader who has not yet fallen asleep probably knows that sparks caused accidentally or on purpose are the principal factor in the general jambores. He does not know yet—but he soon will—that it takes no search warrant to discover those vagrant crackles and little or no time to end them.

An important noise manufacturer in cities is the printing press and this because of a characteristic that has nothing at all to do with the motors and switches which operate it. For many months during the early days of radio, radio editors of metropolitan newspapers producing from three to ten editions a day were at a loss to discover why static overcame them whenever the presses were running.

The interference, it was discovered, was quite what it appeared to be—static—and produced as static.

The friction of paper running between the cylinders of the press produces a charge like that obtained in physics experiments by similar processes. It is possible to get a sizable spark out of a freshly printed paper merely by holding one's hand near it and the smell of ozone is sometimes so strong in a big press room that it predominates over the tang of the ink.

Fortunately, these static factors generally can be rendered inoperative by grounding the frame of the press or if that fails by hanging short lengths of grounded chain where they will just touch the revolving cylinders. Flat bed presses such as are used in job printing shops will occasionally produce static, but their field of interference is limited. In any case the treatment is the same.

Trailing the Festive Electron.

So far this exposé of life in the power house has been concerned principally with the enumeration and description of the things that make a radio listener tear out his hair and get divorced by his wife. It must be admitted that although there has been plenty of promise that a better day is coming, nothing has been said up to this point that might alter the situation. After all a radio listener doesn't need to be told that voluntary arcs in the power line cause humming noises in the set. He knows when he has humming noises in the set and it is no great consolation to him to learn that the hum results from a leak in a third rail twenty miles from his battery switch.

It is therefore with a sense of recititude and benign good will that we

The third of the series of articles on better radio reception, published through the courtesy of the Radio Manufacturers' Association of U.S.A. This instalment deals with spark interference and corrosion. The series will be continued next week.

come to the heart interest part of this volume—the story of how one locates the hum and what to do with it.

As a preliminary to this detective tale one might consider the records of typical investigations, the clues furnished, the Sherlocks who did the investigating, and what good came of it at last, if any.

Take a look, for example, at the report of the Dayton Power and Light Company for its first half of 1926; two hundred and eighty-one complaints were investigated with results as follows:

"Sixteen cases resulted from torn defective heating pads; twelve cases from five vibratory chargers; fifteen due to atmospheric noise mistaken for other interference; eleven due to improper tuning of regenerative sets; two due to railway signalling apparatus; six due to commutator type motors; twenty-one due to street railway systems including bad bonds, aerials parallel to festives, etc.; four due to improper wiring of B supply units and defective tubes; twenty-six due to defects in set including microphone tubes and loud speaker trouble; thirteen due to telephone ringing systems (corrected through after installation by telephone company); one due to gas producer system control; six due to defective wiring including defective switches, loose connections and loose fuses; two due to oil burning furnace control; ninety-seven due to unknown causes, closed after noise had disappeared for ten days; twenty-six due to company equipment (one loose connection in transformer system, twenty-three cases of trouble in street lighting system, two cases of brush discharge on high voltage inductors).

An analysis of this summary is interesting for several reasons inasmuch as it proves an alibi for "that dog-gone transformer out on the post in the alley" and gives important evidence in support of the supposition that "set noises" are only a small per-

centage of crackle-and-hum interference.

Always, so long as the human race shall endure, the greatest number of folks who howl about trouble will be those who have no trouble at all and the second most important group will be those whose trouble is self-produced.

The light company Sherlocks seem to have made out a case that only a slight percentage of alternating current interference originates outside of homes. You will have noted that household appliances, loose switches, sockets and connections, motors and contractors are responsible for the troubles—the real troubles—in a majority of the cases investigated.

The Commonwealth Edison Company of Chicago makes a similar report for the year 1926 and includes an enlightening analysis which is appended here without change:

Class of Trouble	Per Cent. Per. Cause of Total Cent.	
	Present Com. of Total	gated Inter. Trouble
No trouble found	74	36.8
Customer's set defective	34	15.5
Street lighting circuits	15	7.5
Battery chargers	7	4.3
Street cars	7	4.0
Galley stimulators	7	4.0
Motors	2	3.0
Insulator wiring defective	4	4.8
Overhead (aerial) lines	4	3.0
Defective spark	4	2.8
Heating pads	3	2.5
Radio	3	3.1
Floating signs	1	2.0
5-Ray machines	1	2.0
Voice ray machines	4	2.2
Amateur sets stations	2	1.5
Allophones	2	0.8
Bumble	1	0.5
Base Ball signs	1	0.5
Flasher Sockets	1	0.5
Heterodyne between stations	1	0.5
Sluggish connections	1	0.5
Defective maximum demand meter	1	0.5

The total of cases investigated comes to 205. The analysis would seem to show that interference in Dayton is quite the same as that in Chicago and brought about by much the same causes in much the same proportions. If available, the reports of other power company investigators would probably be an interesting, but quite conceivably would not alter the percentage tables.

One may state it as a good general rule, therefore, that the search for the source of home-made static had best begin at home.

Kinds of Noises; What They Mean.

An experienced radio listener generally can recognize by the sound of the interference the general classification of the gadget producing it.

A 60-cycle hum put out by alternating current lines in most of the large cities is actually a hum, in-

though it may become a roar if the receiving set is closely coupled to the source of the disturbance. In quality the hum is like that of a deep note on a bull riddle and it is fairly well sustained in its tone, although there will sometimes be a noticeable rumble in it.

Such hums are picked up by aeriads that run parallel and too close to power lines (has that been mentioned before?) or may come through battery supply units with defective rectifier tubes or bad filters. They become particularly obnoxious where the audio amplifier is made to emphasize tones of low frequency.

Violet Ray and X-Ray machines are deeper pitched and marked by a grating noise already described as similar to the sound of hard coal falling through a long iron chute. It is difficult to differentiate between these noises and those produced by an untamed battery charger.

Spark interference is likewise a grating sound, although occasionally it has a high pitched note in it. It is quite likely to be intermittent and without any rhythmic cadence.

Thermostatic control noises are like those of the violet ray and vibrator, but by the very nature of the source from which they come will be interrupted.

Crackling rackets are produced by loose connections and sockets and by defective contactors.

A steady hum plus a crackle is likely to be traced to a dirty commutator on a motor.

It is difficult, of course, to describe in print the delicate tone gradations that differentiate all these brands of interference. The notes, if they may be called notes, are characteristic and the trained trouble-shooter knows them as well as a piano tuner knows the difference between Middle C and G-Sharp. But all of this is small consolation to the broadcast listener whose affronted ears tell him only that his loud speaker is snarling at him.

However, one need not be a piano tuner or a concert singer or an electrician to star chasing interference. The methods are simple and power company engineers are uniformly ready and anxious to assist.

Location of Trouble.

It should be borne in mind that a noise in the loud-speaker does not necessarily denote a plot on the part of the power company supplying the light current for the district. Radio instruments are made to deal with energies that can be measured only in

millionths of a volt and consequently are of delicate construction. Many an investigating flat thrust inside a receiver cabinet has bent the plates of a variable condenser and a variable condenser with vanes that touch and spark is quite as potent a source of trouble as any spark that ever wandered off a trolley line outside.

Batteries, likewise, have been known to produce noises of their own. Corroded terminals in jacks and battery clips, corroded socket contacts and tube prongs, are likely to become vocal if neglected. An open circuit in the audio end will produce a fine imitation of a 60 cycle hum. A defective grid-leak will fry energetically. Loose connections in the auxiliary equipment of a receiving set may prove quite as obnoxious as loose connections in the house wiring.

The best radio receiver ever produced is not proof against the home-guard experimenter, rough handling, or neglect. Therefore, in the search for the cause of interference one might as well start off by making sure that the noise is not of local origin. Which brings us to the first step in any survey.

1. Disconnect aerial and ground. Connect the input terminals of the set with a piece of bare wire.

If this step is taken and the noise ceases a number of possible causes of trouble are automatically eliminated. There is safe evidence that the interference is being picked up by either the aerial or ground and it becomes reasonable to suppose that the source of interference is outside the house.

The corollary is not entirely true. If the hum persists one may not leap to the conclusion that it is due to a microphonic tube, a bad battery or some trouble close to the set. An inductive pickup through wiring in the walls or through a B supply system is still possible. But in any event the field of the test is narrowed.

If the noise is still observable after aerial and ground have been connected, take a look at the batteries. B batteries begin to howl as a general rule when they have lost about thirty per cent. of their initial voltage. Like all general rules this one does not always apply. Some B batteries will go on and on without a hint of protest until they have ceased to operate the set.

If a C battery is disconnected in audio circuits which call for such an animal there is a noticeable trumpeting roar.

Old and badly sulphated A batteries develop crackling noises which generally can be detected by placing the terminals of a pair of head phones

across them. A normal battery producing a steady flow of current should produce no audible sounds in the headphones. Variations, however, are readily picked up.

So in testing the batteries begin by examining them for charge. If the B batteries have dropped ten volts out of a possible forty-five, get new ones. If the A battery crackles three courses are open: 1—Give it a charge; 2—Consult a battery man; 3—Sit down and howl.

C batteries do not run down rapidly inasmuch as they are subject to no drain at all. However, any dry cell combination ever made to date has a shelf-life limited by the rapidity with which the zinc container of the cells corrode. See that this battery also has something like its rated voltage.

If all voltages are correct the terminal connections of the power supplies should be investigated closely. Storage batteries are subject to the operations of a phenomenon known as acid-creepage. Some sulphuric acid will collect on the surface of the most closely watched cell of the lead-acid type and it is the nature of sulphuric acid to draw moisture out of the air. Moisture makes possible further spreading of acid and likewise catches dust in quantities sufficient to put a high resistance leak across the top of the battery.

Corrosion a Noise Producer.

At the same time the acid creepage is certain to affect clips and leads—particularly at the positive pole. A coating of vaseline will keep down corrosion to a certain extent. A wash with a solution of soda will remove verdigris that has already formed.

Corrosion is a noise producer in two ways: 1—It makes for a defective connection; 2—It is quite likely to eat through the insulation of battery cables and eventually produce a break in the wire. Such matters should be looked into carefully.

So in the testing of battery equipment we may summarize the steps—Make certain of voltage and charge; see that tops are clean and dry; see that connections are tight and not corroded; remove corrosion if any; inspect wires for corrosion and open circuits; replace leads and clips that prove effective.

Where B eliminators are used the tests are not so simple, but this is due more to lack of testing equipment than to any other cause. If you can borrow a set of B batteries known to be in good condition and substitute them temporarily for the eliminator, you can readily determine whether or

not the noise emanates from that source.

Eliminator outputs cannot be measured by ordinary battery testers or meters inasmuch as the output is so small that most of it is consumed by the meter. As an alternative to the battery substitution test you might borrow a high resistance meter. If the terminal voltage of the B supply is correct it is a safe bet that the device is functioning properly. Wavering of the needle of the meter would tend to show an abnormal condition and repairs are indicated.

If the battery supply passes muster, the next step is to trace the connecting cable to the set. See that it is not broken. Where binding posts are employed for battery connections, make certain that they are screwed down tightly and that the leads to instruments in the set are not broken. Where connection is by means of a plug, examine the individual prongs and set leads. Some corrosion may be found here but probably will not be.

If everything is O. K. thus far, look for a defective tube. Great varieties of apparatus are now on the market for making such tests, but the simplest method is to take a tube of known antecedents and performance and substitute it for the other tubes, one after another. For this test it is best to reconnect the aerial and ground. Thus the difference between good and bad tubes may be readily determined by the volume of the broadcast.

Microphonic tubes may be located by the same method.

Sockets occasionally cause trouble through corroded, loose or bent prongs. Corrosion may be removed with fine sandpaper. In holders of the UX type the prongs may be brought back to contact with a pair of pliers inserted from the bottom, but this is a job that will necessitate the removal of the socket and should not be undertaken unless there is evidence of bad contact. It seems needless to say that repair of a set should not be undertaken without experience or without the removal of tubes and batteries.

Examine jack springs and soldered connections, touching suspected parts with a glass rod or strip of bakelite. If the probe results in a grating noise or sputter there is a loose joint.

To test variable condensers, remove tubes and apply the leads from 224 volts of B battery to the terminals. If a spark results, trouble is due to defective insulation or scraping plates.

Test gridleaks by replacing with other leaks of varying values until one is found that works quietly.

Test loudspeaker cords by shaking or twisting. If noise result from this treatment, replace the cords.

The 5CL Twinkler Boys' Club

THE 5CL Twinkler Boys' Club enjoys unabated popularity among the boys, who are still joining in batches. Although the lads are asked to listen-in at home to the stories and moral talks, they crowd the studio on Monday evenings and are permitted to sit round on the floor while Mr. Mills operates the microphone. The "Twinkler" says that their bright faces and grins and chuckles inspire him to do his best work.

"Old Oxford" (Dr. Torr), of Brighton, is keenly interested in the Twinkler Club, and has shown many kindnesses. His latest is to present to the club members his magnificent collection of Chitons (beautiful sea beetles) obtained from many parts of the world.

Until the supply is exhausted any Twinklerite can send to Old Oxford Way Cottage, Brighton, S.A., twelve

match boxes. On each box a blank label must be pasted. The boxes will then be returned, each containing a Chiton, and on the label will be shown where it was obtained.

Each boy must also send his name and address, with three penny stamps, in an envelope separately to cover the postage. Dr. Torr's generosity is so disposing of his valuable Chitons is much appreciated.

All Twinklerites will regret extremely that their vice-patron, Sir Wallace Bruce, has retired from the Lord Mayoralty. Sir Wallace has been very kind to the club, and the boys have shown a great fondness for him. However, the new Lord Mayor (Mr. Lavington Bonnyton) will be cordially welcomed as he is a vice-president of the Twinkler Club, and will no doubt evince keen interest in the work for boys' welfare.

THEY SPEAK FOR THEMSELVES.

Goodwill—the quality which makes for mutually pleasant relations between client and customer, the factor which above any other thing makes for a continuance of successful business progress.

Metropolitan Electric Company, Ltd., makers of Radioken products, employ a staff of 50 hands, and enjoy a reputation for the manufacture of products which have materially advanced the popularity of Broadcast Listening.

Marling House, 27-29 King St.
Sydney, 15th December, 1927.

The Manager,
"Wireless Newspapers Ltd."
Castlereagh Street,
Sydney.

Dear Sir—We wish to take this opportunity to thank you for your service and co-operation during the past year, and extend to you our hearty good wishes for this Festive Season and further success and advancement during the Coming New Year.

It is our good fortune to be able to report that our phenomenal advancement has been largely due to support and publicity gained directly as a result of advertisement in "Wireless Weekly" and "Radio." This we can definitely state from a careful analysis.

Reflecting the opinions of the army of Radio fans for which we cater, we consider that your two papers are the most informative and original published in Australasia, and we watch their progress with interest.

Trusting that a long continuance of our happy business relationship shall be our lot, to our mutual advantage.

Yours faithfully,
THE METROPOLITAN ELECTRIC CO. LTD.
Gulston S. Gow, Director.

WITH THE TRADER

RADIOKES VALVES.

We have just had the pleasure of testing out many samples of the new Radiokes range of valves. There is always a fascination in testing out valves, because the average man has some means of comparison. It is really interesting to lift one valve out of its socket and place a valve of a different make in this socket, noting the different results, if any.

The Radiokes range of valves is a particularly good range, and all the types which they comprise of a particularly high order. In appearance they resemble the Radiotron series very closely, so this will convey ruggedness of construction and firmly molded bases. All are equipped with the UX type of base, so they are easily inter-changeable with any other American type of valve. Radiokes valves are made in America, and are given a most exhaustive test before being shipped here, to insure that only the best of valves have the brand of "Radiokes" on them.

One outstanding valve is the Radiokes 200A special detector. When substituted for a general purpose valve in a Neutrodyne receiver, and after it took its usual few moments to heat up, the increase in volume was most pronounced. Selectivity, too, was greatly improved, and the only method of comparing the excellent results is by stating that it actually seemed as if another stage of radio frequency amplification had been added to the receiver. The plate voltage is not a bit critical, being very elastic, in fact, so this itself should commend the valve to every one.

The 201A general purpose valve is another excellent valve of the Radiokes brand. In any stage in any receiver this valve will give utmost value. Its characteristics are similar to the Standard Radiotron 201A, but somehow or other, when fitted into the receiver mentioned, its advantages were soon proved. The Radiokes power valves UX171 and the UX112, certainly did live up to the name of power valves, as they give a most wonderful result in the last stage of audio frequency, this being the stage that both valves are suited to.

In a Harkness Reflex Two Valve Receiver, the Radiokes UX129 valves (the four volt type) prove their ascendancy over the average 4 volt valve not only from the point of view of volume, but also selectivity.

This valve is one which will be of extreme interest to the average four volt man, as it will be found diffi-

cult to differentiate between it and the average six volt valve.

The agents for these valves, Metropolitan Electric Co., Ltd., of 27 King St., Sydney, are to be congratulated for choosing such a wonderful range of valves, which we feel certain will go a long way towards improving radio reception in this country.

WORLD RADIO COMPANY.

It will be of interest to dealers generally to know that the firm of Hopkins and Witts has now been registered under the name of World Radio Company of Australasia, Ltd., with headquarters on the Sixth Floor, Wynyard Buildings, Carrington Street, Sydney. Mr. Hopkins was for some time Radio Manager of United Distributors, Ltd., and Mr. Witts was connected with Messrs. Scott and Holliday, well known indentors, representing Condor valves.

These two went into partnership and commenced business as Radio wholesalers, in April of this year. Mr. Hopkins is, of course, very well known to city and country traders.

World Radio Company of Australasia, Ltd., will be engaged entirely in wholesale distribution in New South Wales, and indenting and importing throughout all the states of Australia and in New Zealand. The Company handles such well-known lines as World Radio Sets, The Trav-Ler Five Valve Portable Set, the W.R.C. line of Radio parts, and will act generally as wholesale distributors for all local Radio factories. Full stocks of Australian-made and imported essential Radio lines are carried. Since April the business has grown steadily, month by month, and the registration of a limited Company at this stage is to make arrangements for much wider distribution during 1928.

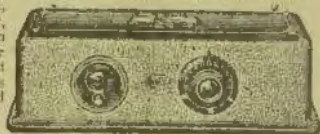
RADIOLUX AMPLION.

In a recent issue of "Wireless Weekly," we gave prominence to the well-known Amplion Loud Speakers. In referring to the various types of Radiolux we mentioned the Blackwood type. It should be pointed out that this is Tasmanian Blackwood.

Mr. H. J. Hapgood, Managing Director, Manufacturers Products Pty., Ltd., arrived back from New Zealand by the R.M.S. Aorangi on December 9th. H.J.H. is looking remarkably fit, and reports excellent business in Emmo and various other lines, which he has been pushing in New Zealand.

RECORD RADIO PRODUCTION.

The magnitude of the radio industry in U.S.A. would probably amaze most Australian listeners. As far back as December, 1926, the Atwater Kent Manufacturing Co., of Philadelphia, the largest radio manufacturers in the world, celebrated the completion of their millionth receiver. It is interesting to note that while this was accomplished in the comparatively short space of four years, the automobile industry had been in existence for something like twenty years before a manufacturer had completed his first million cars. The present



rate of production of Atwater Kent Receivers is about 8000 per day. Mass production methods enable such a huge output to be maintained successfully.

In face of this gigantic output, however, quality is never lost sight of. Every receiver must pass one hundred and fifty gauge and physical tests before leaving the factory. These tests are not merely specification checks. One employee in every ten is an inspector, and, as may be imagined, no faulty component is likely to survive such a barrage.

For twenty-two years before radio began, the Atwater Kent Company was known throughout the world as makers of fine, precision electrical apparatus and ignition parts, and the experience gained in this class of work was, of course, particularly valuable in the manufacture of radio receivers. The demand for Atwater Kent receivers in U.S.A. has increased phenomenally, so much so, that the plant at Philadelphia now covers fifteen acres. Atwater Kent experts recognise that the days when radio was regarded as the plaything of a few cranks are past. Their experience shows that the public has come to recognise radio as the ideal entertainer, and that listeners look first of all for tone in radio receivers. Consequently, they have directed their efforts towards producing a receiver of outstanding tone quality. The wisdom of this is best indicated by the remarkable demand for their product.

A. G. Healing, Ltd., of Sydney and Melbourne, are Australian distributors for Atwater Kent Radio.

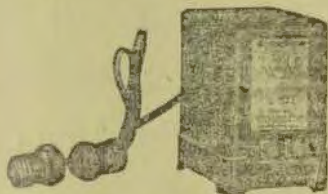


The magnificent new factory now occupied by the Battery Department of The Clude Engineering Co. Ltd. This building has a total concrete floor space of 20,000 square feet and is fitted with costly improved equipment such as automatic conveyors, etc., for the rapid handling of Eight Batteries in the process of manufacture. The factory gives employment to nearly 100 hands and has a present output of over 1000 batteries per week. Latest automatic means have of lead frames and does not as is claimed that the optimum arrangements are the most up to date in Australia. The equipment provides for the complete handling of over twice the present output of batteries if necessary.

THE RECTOX TRICKLE CHARGER

We have received advice from Messrs. Amalgamated Wireless (A/asia) Limited, that they have been appointed sole Australian Distributors of the Rectox Trickle Charger as manufactured by the Westinghouse Electric Company of the United States.

This battery charger has been de-



signed to meet the popular demand for a trickle charge rectifier for use in connection with the radio "A" storage battery at a rate of approximately 0.5 amperes, continuously. The use of this outfit as a charging device will also enable radio set owners to use a lower capacity battery, in view of the fact that energy is constantly being put into the cells to replace that drawn out by the operation of the set.

The ease of operation is one of its principal points, as no attention whatsoever is necessary, except to connect the battery to the charger and plug the A.C. lead into any convenient light socket.

The chief advantage of this charger is that it contains no bulbs, chemicals, liquids or vibrating points to wear or get out of order.

The fact that this trickle charger has no parts to consume current in heating makes it very efficient and

economical to operate, in comparison with other designs.

RECTOX TRICKLE CHARGER RATINGS.

D.C. Amperes 0.5 max.	A.C. Watts Input Cycles	D.C. Volts No. of Cells
11 1/2	50-60	5
Approximate Net Wt.	1 1/2	Wt. Lbs. Shipping 6

A "RESONANCE INDICATOR"

Radio Set Distributors and Manufacturers will appreciate the latest Engineering Circular issued by the Burgess Battery Company, describing a Resonance Indicator.

This is an instrument that should be in the hands of every manufacturer and seller of broadcast receivers.

Too much stress cannot be placed on the necessity of accuracy in aligning condensers in multi-tuned single control receivers.

This instrument, therefore, becomes an instrument of decided value to every dealer who desires to render service along with his sale of receivers.

There are times when Radio Receivers are jarred in shipment or handling which causes a slight shift in one or more condensers. This instrument will enable dealers to make adjustments that will make the receiver function properly, without having to return it to the maker.

The Burgess Engineering Circular describing this Resonance Indicator is carefully written and details are fully explained.

A limited number of copies will shortly be available for distribution by the Burgess Battery Agents, New System Telephones, Pty., Ltd., 230 Castlereagh Street, Sydney.

ADVANCE TRANSFORMER.

Prominent among components of the better class is the "Advance" audio-frequency transformer.

Designed expressly for Australian conditions, this transformer has been popular with discriminating set-builders since it was first introduced by the Radio Corporation of Australia Pty., Ltd.

Built with best alloy laminations of very liberal proportions; large primary and secondary windings and completely shielded, this transformer compares favorably with the most expensive transformers on the market.

Terminals are placed most conveniently for wiring, and the whole component presents a very attractive appearance.

Tested on a five-valve set, the transformer gave distortionless reception, combined with ample volume on both stages.

The "Advance" transformer is obtainable from all radio dealers in ratios of 2, 3, 4, and 5 to 1.

B ELIMINATORS REQUIRE REASONABLE CARE.

There are two main types of B eliminators, those embodying a valve rectifier and those incorporating liquids. The former type will last a reasonable length of time, providing the unit is not abused. Don't throw the load on a valve type eliminator after the valve has been lighted. Turn on the set first and then throw the switch to the eliminator.

Less harm will be caused the chemical rectifier if the eliminator is thrown into action first. The condensers will be severely strained, but the sudden shock is somewhat less. But the chemical rectifier should not be allowed to operate any length of time without a load. To do so causes a change in the chemical film which covers the electrodes and detroys their power of rectification.—C.L.P.

XMAS "RADIO"

By far the best issue of the new "RADIO" is the Christmas issue containing the following features:

DX. being a humorous treatise on long distance reception, by Charles D. Maclurean.

STRONG TEA. A short story of Amateur Radio, by Russell Roberts.

HISTORICAL AND MODERN SIGNALLING. By Sidney F. H. Laws, General Manager of 7ZL.

SOUTHWARD HO! Further adventures of Brasso.

FOUR FAMOUS ANNOUNCERS, in caricature and print. Meet Laurence Halbert, Arthur Cochrane, Alfred Andrew, and Maurice Dudley, face to face.

HAS IT EVER OCCURRED TO YOU THAT MEN MONOPOLISE RADIO? A protest against the common belief that women are not interested in radio.

THE STROBODYNE. A new eight valve receiving circuit, embodying the principles of the superheterodyne and the Stroboscope.

THE SIMPLICITY THREE. A receiver made possible by modern apparatus which gives clear volume on the loud speaker, yet remains simple to operate.

THE SAMPSON TWO VALVE RECEIVER. An inexpensive receiver remarkable for its astounding volume. An ideal receiver to build and present as a Christmas gift.

DO YOU KNOW THE BEST SYSTEM OF AUDIO AMPLIFICATION? By R. C. V. Humphery.

THE GO-GETTER SHORT-WAVE RECEIVER, by Don. B. Knock (2NO).

AMATEUR SECTION. A special enlarged Amateur Section is published, which includes Ham News from all seven districts.

"A DIGEST OF WORLD WIDE RADIO NEWS," "Christmas With Our Contributors," and "Your Choice Among Receivers," are the titles of other general articles.

On Sale Now—The

XMAS "RADIO"

One Shilling

BROADCASTING PROGRAMMES

For the COMING WEEK



Friday, Dec. 23
2FC, SYDNEY.

Farmer's Broadcasting Service.

Wave Length, 442 Metres.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

10 a.m. to 11.30 a.m.

MIDDAY SESSION.

- 11.45 a.m.—"Big Ben" and announcements.
12.00 p.m.—Stock Exchange, first call.
12.15 p.m.—Official weather forecast, rainfall.
12.30 p.m.—Studio music.
12.45 p.m.—Summary of "Sydney Morning Herald" news service.
1.00 p.m.—Right wireless news.
1.15 p.m.—Studio music.
1.30 p.m.—Annie Sedgwick, soprano.
"Love's Labour" (Michael Head).
1.45 p.m.—Studio music.
2.00 p.m.—"Big Ben." Weather intelligence.
2.15 p.m.—"Evening News" midday news service.
Producers' Distributing Society's Report.
2.30 p.m.—Studio music.
2.45 p.m.—Stock Exchange, second call.
3.00 p.m.—Studio music.
3.15 p.m.—Annie Sedgwick, soprano.
"Meadow Sweet" (Drahe).
3.30 p.m.—Studio music.
3.45 p.m.—"Big Ben." Close down.

AFTERNOON SESSION.

- 3.45 p.m.—"Big Ben" and announcements.
4.15 p.m.—The "Radio Triad" (Leader, Mr. Ewart Chapple).
4.30 p.m.—Fosse Brakel, contractor.
"Now, but the Lumpy Heart" (Thomson).
4.45 p.m.—A short talk.
5.00 p.m.—Janette Rooney, soprano.
"The Carpet" (Sanderson).
5.15 p.m.—Kathleen Horne, soprano.
"When You and I Were Seventeen" (Rams).
5.30 p.m.—The "Radio Triad" (Leader, Mr. Ewart Chapple).
5.45 p.m.—Muriel Watt, contralto.
"Here in the Quiet Hills" (Carnes).
6.00 p.m.—Studio records.
6.15 p.m.—Fosse Brakel, contractor.
"The Wild Rose" (Schubert).
6.30 p.m.—A Reading.
6.45 p.m.—Janette Rooney, contralto.
"Of the North I Sing" (O'Leary).
6.55 p.m.—The "Radio Triad" (Leader, Mr. Ewart Chapple).
7.00 p.m.—Kathleen Horne, soprano.
"The Carpet" (Sanderson).
7.15 p.m.—Muriel Watt, contralto.
"The Little Tump" (Lehr).
7.30 p.m.—The "Radio Triad" (Leader, Mr. Ewart Chapple).
7.45 p.m.—Stock Exchange third call.
8.00 p.m.—Studio music.
8.15 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

- 8.30 p.m.—The chimes of 2FC.
8.45 p.m.—The "Hello Man" talks to the children.
9.00 p.m.—Story time for the young folk.
9.15 p.m.—From Farmer's Oak Dining Hall.
The Oak Hall Instrumental Trio (Leader, Mr. Harvey Keah).
9.30 p.m.—Mavis Dearman, soprano.
"Phyllis has such charming grace" (Willson).
9.45 p.m.—The Oak Hall Instrumental Trio.
9.55 p.m.—David Craven, baritone.
10.00 p.m.—"Big Ben."
Latest Racing Information by the 2FC Commissionaire (from the Studio).
10.15 p.m.—Industry's market reports (wheat, wheat and stock).
10.30 p.m.—Fruit and vegetable markets.
10.45 p.m.—Weather and shipping news.
10.55 p.m.—"Evening News" late news service.

NIGHT SESSION.

- 11.30 p.m.—Programme announcements.
11.45 p.m.—Lionel Lunt, English baritone.
12.00 p.m.—Orchestraled reminiscences, prepared by Dr. Frederick Harper.
12.15 p.m.—Lionel Lunt, English baritone.
12.30 p.m.—"Big Ben."
From the Lyric Winter Garden Theatre, George Street, Sydney.
Orchestraled items.
12.45 p.m.—From the Studio.
Alice Frossie, contralto.
"How far is it to Bethlehem?" (Geoffrey Shaw) (arr. Beach).
1.00 p.m.—Ruth Garding.
"Mirth and Melody."
1.15 p.m.—The "Crackerjack" Trio.
1.30 p.m.—Lionel Lunt, English baritone.
1.45 p.m.—Alice Frossie, contralto.
"If there were dreams to sell" (John Ireland).
1.55 p.m.—From the Lyric Winter Garden Theatre, George Street, Sydney.
Orchestraled items.

12.00 p.m.—From the Studio.

- Ruth Garding.
8.45 p.m.—The "Crackerjack" Trio.
8.55 p.m.—Late weather forecast.
9.00 p.m.—Alice Frossie, contralto.
1. (a) "Ocean of Night."
(b) "The sun in the Moon" (Comins).
2. "Doom the barn" (Old Scots Ballad).
8.12 p.m.—From Her Majesty's Theatre, Sydney (by permission of J. C. Williamson, Limited), "The Second Act of the Mutual Comedy."
"WILDFLOWER"

Featuring Marie Bonke and Herbert Brown.
Singing The Benedictus Vile on Lake Como, Italy.

Musical numbers:

- "The best damn Tex had to-night."
"Curse a will."
"Gladmo."
"You can't blame a girl for dreaming."
"Goodie, Little Round."
"Fins".
10.12 p.m.—From the Studio.
The "Crackerjack" Trio.
10.25 p.m.—Len Marley, popular baritone.
10.35 p.m.—Late weather forecast.
10.51 p.m.—The "Crackerjack" Trio.
10.55 p.m.—Len Marley.
Popular songs.
10.57 p.m.—Late news and announcements.
11.00 p.m.—"Big Ben."
National Anthem.
Close down.

2BL, SYDNEY.

Broadcaster's Ltd.
Wave Length, 253 Metres.

Friday

EARLY MORNING SESSION.

5.0 a.m. to 9.0 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 Political."
10.50 a.m.—Musical Programme from the Studio.
11.00 a.m.—G.P.O. Clock and Chimes! Announcements.
11.10 a.m.—Musical Programme from the Studio.
11.15 a.m.—Women's Session: Talk on "Mating-up" by Miss Gwen Valey, Broadcaster's Women's Sports Authority; Social Notes; Replies to Correspondents by Mrs. Jordan; Talk on "A hot record about Xmas Goodery" by Mrs. Jordan.
12 noon.—G.P.O. Clock and Chimes! Musical Opera Forecast and Weather Report.
12.15 p.m.—Musical Programme from the Studio.
12.45 p.m.—Information, Mails, Shipping and Port Directory.
12.55 p.m.—Bells by Call by Wireless.
12.58 p.m.—Fruit Market Report.
12.58 p.m.—Vegetable Market Report.

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

- 2FC—Farmer's Broadcasting Station, Ltd., Sydney, wavelength 442 metres, power 5000 watts.
2BL—Broadcasters' Ltd., Sydney, wavelength 253 metres, power 5000 watts.
2GB—Homebush Broadcasting Station, Ltd., Sydney, wavelength 210 metres, power 3000 watts.
2KY—Trade and Labor Council, Sydney, wavelength 250 metres, power 1500 watts.
2UW—Sandell Radio, Sydney, wavelength 267 metres, power 500 watts.
2MK—Meeker Bros., Bathurst, wavelength 275 metres, power 250 watts.
2UE—Electrical Utilities Supply Co., Sydney, wavelength 293 metres, power 250 watts.
2RE—Rergin Electric Co., Sydney, wavelength 516 metres, 100 watts.
2BD—H. A. Douglas, Newcastle, wavelength 243 metres, 100 watts.

Philcos are Aristocrats among Batteries.

12.17 p.m.—London Metal Market Report.

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

12.23 p.m.—Ferrege Market Report.

12.24 p.m.—Fish Market Report.

12.28 p.m.—Rabbit Market Report.

12.32 p.m.—Stock Exchange Report.

12.33 p.m.—H.M.V. Gramophone Record.

1.27 p.m.—Stock Exchange Report.

1.30 p.m.—G.P.O. Clock and Chimes; Talk to Children and Special Entertainment for Children in Hospital.

2.0 p.m.—G.P.O. Clock and Chimes; Close Down.

AFTERNOON SESSION.

Racing Information Broadcast immediately after each race by courtesy of the "Sun" Newspapers.

2.5 p.m.—G.P.O. Clock and Chimes; News from the "Sun".

2.15 p.m.—Civil Service Stores Trio. Director, Miss de Courcy Brenner.

3.0 p.m.—G.P.O. Clock and Chimes. Talk on "Hemerafa" by "Prisilla".

4.0 p.m.—G.P.O. Clock and Chimes; Civil Service Stores Trio.

4.10 p.m.—Talk on "Women of the Orient of all Ages".

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

4.50 p.m.—News from the "Sun".

4.55 p.m.—Resume of Night's Programme.

4.57 p.m.—Hasting Resume.

4.59 p.m.—Special Ocean Forecast.

5.0 p.m.—G.P.O. Clock and Chimes; Close Down.

EARLY EVENING SESSION.

5.45 p.m.—G.P.O. Clock and Chimes; Children's Session.

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

SPECIAL COUNTRY SESSION.

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

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

7.30 p.m.—Talk by Mr. Gregory of the M.R.M.A.

7.50 p.m.—Talk on "Gardening Science" by Mr. Cooper, Park Superintendent, City Council.

8.0 p.m.—G.P.O. Clock and Chimes; Grand One-Hour Broadcasts: Tropical Chorus.

8.1 p.m.—Broadcasters' Trio.

8.15 p.m.—Mr. Leslie McCallum (Baritone).

8.21 p.m.—Miss Louise Gelsch and Mr. Alfred Wilmore.

8.25 p.m.—Miss Heather Kinnaird (Contralto).

8.30 p.m.—Mr. Moore McMahon (Violin Solo).

8.41 p.m.—Mr. Alfred Wilmore (Tenor).

8.44 p.m.—Miss Louise Gelsch (Soprano).

8.47 p.m.—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. U. J. Mackay, Government Meteorologist.

9.1 p.m.—Broadcasting All Sports Expert will talk on "Cricket".

9.15 p.m.—Mr. Leslie McCallum.

9.23 p.m.—Mr. Moore McMahon.

9.30 p.m.—Miss Louise Gelsch.

9.37 p.m.—Broadcasters' Trio.

9.47 p.m.—Mr. Alfred Wilmore.

9.54 p.m.—Miss Heather Kinnaird.

10.1 p.m.—The Sporting Editor of the "Sun" will talk on the prospects of Saturday's Racing.

10.18 p.m.—Dance Music by Daney Hogan's Frisco Dix, transmitting from the Ballroom of the Bondi Casino, during intervals between Dances "Sun" News will be broadcast.

11.0 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.—Good Cheer Talk.

9.55 a.m.—Music.

10.30 a.m.—Psychological Class.

10.40 a.m.—Music.

10.45 a.m.—Health and Diet.

10 a.m.—Close Down.

AFTERNOON SESSION.

2.57 p.m.—Address.

2.55 p.m.—Music.

4 p.m.—Address.

4.22 p.m.—Music.

4.30 p.m.—Close down.

EVENING SESSION.

7 a.m.—Music.

7.5 p.m.—Address: R. E. Bennett.

7.15 p.m.—Music.

7.20 p.m.—Address: Mr. J. K. Powell.

7.30 p.m.—Music.

7.40 p.m.—Address: F. Hodgson, P.A.

7.55 p.m.—Instrumental Trio: LEN BREWER, MURIELLE LANG, ADA BROOK.

8.5 p.m.—Address by Dr. P. K. Reed.

8.25 p.m.—Songs by ELSIE BROWN:
"Let me wander not in vain" (Holland).
"The Flower of Love" (Mr. Arno).

8.35 p.m.—Instrumental Trio: DAN SCULLY, MURIELLE LANG, ADA BROOK.

9 p.m.—Address by Mr. J. K. Powell.

9.15 p.m.—Songs by ELSIE BROWN:
1. "The Little Diamond" (Novello).
2. "Symphonic and Rhapsody" (Demberg).
3. 25 p.m.—Violin Solo: LEN BREWER.
4. "Antiphony" (Mastino Kreutzer).
5. "Lullaby" (Kreutzer).

9.30 p.m.—Instrumental Quartette: LEN BREWER, DAN SCULLY, MURIELLE LANG, ADA BROOK.

10.0 p.m.—"Good Bye" Talk.

10.10 p.m.—Close down.

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

- 2LD.—Broadcasting Company of Australia, Ltd., Melbourne, wavelength 321 metres, power 5000 watts.
- 2AR.—Associated Radio Co. Ltd., Melbourne, wavelength 424 metres, power 5000 watts.
- 4CQ.—Queensland Radio Service, Brisbane, wavelength 324 metres, power 5000 watts.
- 4L.—Central Broadcasters' Ltd., Adelaide, wavelength 331 metres, power 5000 watts.
- 5WF.—Western Australian Farmers, Ltd., Perth, wavelength 1220 metres, power 5000 watts.
- 7SD.—Tasmanian Broadcasters, Ltd., Hobart, wavelength 314 metres, 5000 watts.
- 8DB.—The 8DB Broadcasting Co. Pty., Ltd., Capital Hill, Melbourne, wavelength 255 metres, power 1000 watts.
- 12Z.—O. J. Nilson & Co., Melbourne, wavelength 315 metres, power 1000 watts.
- 14RF.—Old Radio Electric Service, Troonwood, Queensland, wavelength 254 metres, power 1500 watts.
- 5KA.—Sport Radio Broadcasting Station, Adelaide, wavelength 220 metres, power 1500 watts.
- 1DN.—1DN Pty., Ltd., Adelaide, wavelength 313 metres, 800 watts.

2 UW, SYDNEY

Sandel Radio, Ltd.
Wave Length, 287 Metres.

Friday

MORNING SESSION.

9 a.m.—News, Shipping, mail, studio items.

9.45 a.m.—Women's session.

10 a.m.—Resume of forward programme.

10 a.m.—Close down.

12.15 p.m.—Special entertainment Luncheon session.

12.45 p.m.—Close down.

AFTERNOON SESSION.

2 p.m.—Studio selection.

2.30 p.m.—Resume of forward programme.

3 p.m.—Close down.

EVENING SESSION.

5 p.m.—Studio items.

5.50 p.m.—Resume of forward programme.

6 p.m.—Close down.

NIGHT SESSION.

7 p.m.—Studio chorus.

7.15 p.m.—Where to Go.

7.15 p.m.—Studio selection.

7.30 p.m.—Mrs. A. Dalton, pianoforte solo. Selection from "Maid of the Mountains" (Lizant).

7.5 p.m.—Constantine Cooper, soprano:
(a) "Robin Adair."
(b) "Upon thy Blue Eyes" (Massines).

7.55 p.m.—Studio selection.

7.55 p.m.—Resume of forward programme.

8.00 p.m.—Clock chimes.

8.2 p.m.—Mrs. Constantine Cooper, soprano: Selected.

8.7 p.m.—Miss A. Dalton, pianoforte solo:
(a) "Valse Parisienne" (Roberts).
(b) "Bourgeois" Taux of Hoffman (Offenbach).

8.15 p.m.—Miss Constantine Cooper, soprano: Selected.

8.15 p.m.—Studio selection.

8.15 p.m.—Mrs. A. Dalton, violin solo selected.

8.20 p.m.—Studio selection.

8.30 p.m.—Jeanette Paterson, pianoforte solo: "Etude in G. Minor" (Chopin).

8.44 p.m.—G. E. Munnell, tenor:
(a) "Mary of Araby."
(b) "Maire my Gail."
(c) 20 p.m.—Studio selection.

8.50 p.m.—Weather forecast and news (London).

9 p.m.—Clock chimes.

9.2 p.m.—News items.

9.5 p.m.—G. E. Munnell, tenor: "I'll sing thee songs of Araby."
8.4 p.m.—Miss Jeanette Paterson, pianoforte solo: "Shades Dance" (McDowell).

9.14 p.m.—Studio selection.

9.10 p.m.—G. E. Munnell, tenor: "Song to me only with thine eyes."
8.24 p.m.—Studio selection.

9.30 p.m.—God Save the King.

3LO, MELBOURNE.

Friday.

Broadcasting Co. of Aust.
Wave Length, 371 Metres.

MIDDAY SESSION.

12 noon.—Melbourne Observatory time signal.

12.1 a.m.—Musical pieces received by the Australian News and Herald Association from the London Stock Exchange this day. Heister and the Australian Press Association cables. British official wireless news from Rugby. "Arax's" news service.

12.30 p.m.—STUDIO QUARTET:
Musical Melange, "Crème de la Crème" arr. (Tobani).

- 12.30 p.m.—BERNARD THOMAS, tenor:
"Oath" (Sanderson).
"Ballets" (Reberfinger).
12.37 p.m.—Stock Exchange information.
12.40 p.m.—REGINALD BRADLEY, violin:
"Bright Eyes" (G. Harris).
12.47 p.m.—STUDIO QUARTET:
Overture, "The Feast of Lanterns" (Langey).
1 p.m.—Melbourne Observatory time signal.
"Time to check, your obligations are infinite. Are your houses regulated, your children instructed, the afflicted relieved. Remember, the only way to be loved is to appear loathly; to possess and display kindness."
1.12 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.

FROM THE STUDIO.

- 1.11 p.m.—DAVID GRAHAM, baritone (by permission of J. C. Williamson, Ltd.):
"When a Maiden Takes Your Place"
(Mason).
"Youth" (Allison).
1.13 p.m.—Meteorological information. Weather forecast and rainfall for Victoria, Tasmania, South Australia and New South Wales. Ocean forecasts. River reports.
1.25 p.m.—STUDIO QUARTET:
"Musical Scenes from Switzerland" (Langey).
1.36 p.m.—BERNARD THOMAS, tenor:
"Merrill and Bess" (Marci).
"I Hear a Rose" (Gladman).
1.42 p.m.—STUDIO QUARTET:
"Sounds from Italy" (Fischer).
1.49 p.m.—DAVID GRAHAM, baritone:
"In Happy Moments" (H. V. Wallace).
"Aria, O Son" (M. C. Day).
1.55 p.m.—Announcements.
2 p.m.—Class hour.
2.15 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground by Mr. Rod McGregor.
2.45 p.m.—Class hour.
2.45 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.

AFTERNOON SESSION.

- 3 p.m.—Melbourne Observatory time signal.
3.1 p.m.—STUDIO QUARTET:
"Three Eastern Sketches" (Hawgill).
3.16 p.m.—MISS FRANCES FLAHER:
"Dickens and Christmas Time."
3.23 p.m.—ALBERT CARLISLE, tenor (by permission of J. C. Williamson, Ltd.):
"Ma Pari Titi Amor."
"Hambini Song" (Froden).
3.30 p.m.—STUDIO QUARTET:
"Pierrot" (Beetz).
3.38 p.m.—NELLIE JUDGES, soprano (by permission of J. C. Williamson, Ltd.):
"Stay with Me, Summer" (G. Harris).
"Here is the Great Hill" (Gamm).
3.45 p.m.—STUDIO QUARTET:
Mozzy, "A Musical Child's Dream" (Dix).
3.54 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground by Mr. Rod McGregor.
4.3 p.m.—ALBERT CARLISLE, tenor:
"In the Garden of Tomorrow" (Dempy).
"A New Year's List for You" (Lohr).
4.10 p.m.—STUDIO QUARTET:
"Santa Claus Suite" (Holland).
4.20 p.m.—NELLIE JUDGES, soprano:
"I Love the Moon" (Rubens).
"Maestri Valse Song" (Pascini).
4.27 p.m.—MRS. M. CALLAWAY WARDHOOD:
"The Study and Use of Color—Yellow."
4.45 p.m.—"Herald" news service. Stock Exchange information.
5 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
5.20 p.m.—Class hour.

EVENING SESSION.

- 5.30 p.m.—Answers to letters and Birthday Greetings by "BILLY BUNNY."
5.35 p.m.—Description of the final of to-day's INTERSTATE CRICKET MATCH, Victoria v. New South Wales, from Melbourne Cricket Ground, by Mr. Rod McGregor.
FROM THE STUDIO.
5.45 p.m.—Mr's greetings by "BILLY BUNNY."
5.57 p.m.—CLIFF BRADSHAW:
Cards for the Children.
6.14 p.m.—CAPT. DONALD MACLEAN:
Jolly Roger Goodness.
6.31 p.m.—"BILLY BUNNY":
More about Treasure Seekers.
6.40 p.m.—Original report of Newmarket stock sales by the Associated Stock and Station Agents, Bourke Street, Melbourne.
6.45 p.m.—"Herald" news service. Weather synopsis. Shipping movements.
6.53 p.m.—Stock Exchange information.
6.57 p.m.—Fish market reports by J. E. Burnett, Ltd. Rabbit prices.
6.59 p.m.—River reports.
7.2 p.m.—Market reports by the Victorian Producers' Cooperative Co. Ltd. Poultry, grain, hay, straw, lute, dairy produce, potatoes and onions. Market reports of Fruit by the Victorian Producers' Association. Retail prices. Wholesale prices of Fruit by the Wholesale Fruit Merchants' Association. Citrus fruits.

NIGHT SESSION.

- 7.35 p.m.—MISS E. G. HARRIS, Pabstly Officer of the Kindergarten Union will speak on:
"The Work of the Free Kindergarten."
7.58 p.m.—BRUNSWICK CITY BAND:
Overture, "The Great Oyl" (Downs).
7.49 p.m.—BERNARD THOMAS, tenor:
"A Day's March."
"Maestri" (MacMurrough).
7.47 p.m.—MR. H. K. LOVE:
"Technologies."
Mr. Love will be glad to attend to your wireless difficulties, and we ask you to write to him for any advice that you may require.
7.57 p.m.—BRUNSWICK CITY BAND:
Grand Chorus, "Hallelujah" (Handel).
8.1 p.m.—VAUDS AND VERNE, entertainers:
"Jolly Jokes."
8.14 p.m.—THE FRENCH BROT, banjoists:
"Blue Scales."
"Kentucky Blue."
8.20 p.m.—JESSIE IRWIN, soprano:
"The Waltz Song from Tom Jones" (Germans).
"Butterflies and Lilies" (Boaden).

NEW ZEALAND STATIONS:

- 1YA, Auckland, The Radio Broadcasting Co. of New Zealand, Ltd.
Power 600 Watts; Wave-length, 332 Metres. Silent Night, Monday.
2YA, Wellington, The Radio Broadcasting Co. of New Zealand, Ltd.
Power 8000 Watts; Wave-length, 425 Metres.
3YA, Christchurch, The Radio Broadcasting Co. of New Zealand, Ltd.
Power 500 Watts; Wave-length, 306 Metres. Silent Night, Thursday.
4YA, Dunedin, The Radio Broadcasting Co. of New Zealand, Ltd.
Power 750 Watts; Wave-length, 463 Metres.

- 8.27 p.m.—BRUNSWICK CITY BAND:
Selection, "The Cross of Jerusalem."
8.37 p.m.—HAROLD ELVINS, piano:
1. "Barnesville" (Hart).
2. "Scapino" (St. Sanna-Gluck).
3. "Minuet" (Liszt).
4. "Concert Study" (Goddard).
8.47 p.m.—Announcements.

The Royal Automobile Club of Victoria's Safety Message for today is for ALL DRIVERS. Don't unnecessarily obstruct another driver by holding to the centre of the road after recognizing his signal that he wishes to pass.

- 9.2 p.m.—BRUNSWICK CITY BAND:
Tortezzeno, "Les Gueules de St. Malo" (Blumner).

3AR, MELBOURNE

Associated Radio Co.
Wave Length, 484 Metres.

Friday.

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

MIDDAY CONCERT SESSION.

- 12.1 p.m.—Transmitted from Panatage House, 28, Collins Street (by the exclusive permission of Wills and Wynn, Ltd.) on the airwaves Panatage.
1.2 p.m.—Weekend stock sales. Special "Snap" (exclusive report on the progress of the purchasing stock sales at 2pm market by courtesy of John Macanemara and Co.) To be repeated at 3.30 specially for war Colony listeners.
1.32 p.m.—Class hour.

MATINEE SESSION.

- 2.40 p.m.—BRUNSWICK CITY BAND, Special "Snap" (exclusive report from the sale by the courtesy of John Macanemara and Co.)
2.44 p.m.—Studio Orchestra:
"State of the Desert" (Woodford-Jones).
2.46 p.m.—Mr. Tom Wainwright and Mr. Herbert Pelletier violin:
Instrumental Duets, "Lil, hear the gentle tick" (Bishop).
2.48 p.m.—Arya Dancings.
2.50 p.m.—Miss Ethel Kearley, piano:
"The Monetary Idea" (By request).
2.54 p.m.—Studio Orchestra:
1. Mr. Arthur Shaw, baritone:
"Grooms of the Desk" (Hawgill).
2. Mr. Arthur Shaw, baritone:
"Grooms of the Desk" (Hawgill).
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100. Mr. Arthur Shaw, baritone:
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CHILDREN'S SESSION.

- 6.30 p.m.—The Forward Five.

EVENING SESSION.

AMAS GAMP-FIRE NIGHT.

- 7.30 p.m.—Mr. George Beattie, Principal of the Beattie College of Physical Culture—Physical Fitness.
7.45 p.m.—"Field Games" special review for Amalgam's News.
7.58 p.m.—Announcement Stock sales.
8.37 p.m.—Weekend Tourist Guide.
8 p.m.—G.P.O. Clock says "Eight".

- 8.1 p.m.—Instrumental Trio, piano, violin and cello.
 "Suite from India" (Poppo).
- 8.16 p.m.—Mr. Herbert Sanderson, baritone:
 "The Great Awakening" (Kosman).
- 8.18 p.m.—Mr. Jack Bell, entertainer:
 "The Popular entertainer in a specially arranged performance of Leslie Harris' charming sketch."
 "Christmas Bell."
 "Christmas Bell."
- 8.21 p.m.—Miss Violet Woolcock, violin;
 "Canto Amoroso" (Emanuele-Salvadori).
 "La Gitana" (Krossler).
- 8.28 p.m.—"Lam" Bigbands and Blood Service.
 The adventures of a British secret Service officer in "The Sultan".
- 8.38 p.m.—"Ye Old English Christmas Carols."
 22 original sketches specially written and produced for radio by Mr. J. Harcourt-Bailey for the "Sunday News Radio Review Club."
 A delightful half hour of Christmas music, songs and stories.
 The Sandowners—Carol "Hark the Herald Angels Sing."
 Mr. Haines—Allen, Altus.
 "He shall feed His Buck" from The Messiah (Handel).
 Mr. Harcourt-Bailey—
 "Sweet Liberty" (Dunaway).
 The Sandowners—Quartette;
 "Bergale" (White).
 "Kritico Dangler" (Woods).
 Mr. Herbert Sanderson, baritone.
 "A Legend" (Tschickowsky).
 The Sandowners—
 Gaird—"Good King Wenceslas."
- 9.16 p.m.—Miss Elizabeth Lester, cello;
 "Spanish Instance—Vivo" (Poppo).
- 9.17 p.m.—"Round The Camp Fire" (Special Music Service).
 Music story and verse by the writers and poets of Australia.
 NARRATOR: Mr. V. Eyles-Broon.
- 9.52 p.m.—The Sandowners—
 "Love is Love" (Hear).
 "Writ of the Blues" (Henderson).
- 10 p.m.—G.P.O. Clock says "Ten."
- 9.51 p.m.—Special Final Weather report, especially for our Country Listeners.
- 10.2 p.m.—Mr. Jack Bell, Society Comedian.
 The favorite comedian in one of his most diverting comedy sketches.
 "At the Christmas Panmouine."
 The Dame explains her troubles.
- 10.8 p.m.—Mr. W. H. McManis.
 "Hush!"—Music amusing and entertaining together with Drake's favorite pastime by a former international.
- 10.15 p.m.—Mr. Robert Gillard, bass:
 "Old Barty" (Grant) by request.
- 10.22 p.m.—Instrumental trio:
 "Masual Gine of Tokarewsky."
- 10.32 p.m.—Mr. J. Harcourt-Bailey, Entertainer:
 Humorous Sketch: "Smocking" (Spurr) by request.
- 10.42 p.m.—Mr. Alex Walker:
 "The Bath Music."
 The noted Australian pianist in some wonderful and realisation of 22 and Anon's imitations.
- 10.47 p.m.—Mr. Tom Temple and Mr. Herbert Sanderson:
 Duet: "O Lovely Night" (Ronald).
 10.51 p.m.—"Ace" News Bulletin, exclusive to 3A.R.
- 10.57 p.m.—"Fonservar's" Nostalgical.
- 10.58 p.m.—Final weather forecast.
- 10.59 p.m.—Our Australian Grand Night Quete is from the poem, "The Circling Reel" by Rudolph Quilen.
 "Six baroque airs circled round our shores, and round."
 The six baroque group a common race. Though languages divide, the one light on their face;
 The baroque old songs and stories flee the word.
 Of kindred voice and the dear
 Old English tongue make music; and men move
 Front, heart to heart with little fear
 Of night save open arms and love."
- 11 p.m.—G.P.O. Clock says "Eleven."
 God Save the King.

4QG, BRISBANE

Queensland Radio Service

Wave Length, 385 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 music.
 1.54 p.m.—Standard time signal.
 2 p.m.—Close down.

AFTERNOON SESSION.

- 2.30 p.m.—A programme of music from the studio.
 4.15 p.m.—"The Telegraph" News. Weather news.
 4.30 p.m.—Close down.
 4.30 p.m.—EARLY EVENING SESSION
 5 p.m.—"Daily Standard" news, weather information; announcements.
 6.10 p.m.—A talk on the book "A General Discussion"—by Mr. W. G. Hingworth (General Surgeon).
 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.
 7.45 p.m.—Standard time signal.
 7.45 p.m.—A review of to-morrow's racing.

NIGHT SESSION.

- To-night's programme will be in the form of a jazz night.
 During the evening dance music will be played by Alf Featherstone and his Studio Syncopators.
 Between dance items vocal and instrumental numbers will be provided by the following:
 Mr. and Miss Griffiths—some Christmas music on an English Concertina.
 The Hawaiian Melody Makers in selected numbers.
 Contralto solo:
 "Sleepy Hollow Tune" (Kounts).
 Miss Laura Leck.
 Soprano solo: "Gee" (Lohr).
 Miss Jean McDougall.
 Pianoforte solo: "Myra's Brilliant" (Webster).
 7.30 p.m.—Dance Syncopators.
 Soprano solo: Selected.
 Mr. H. Huxley.
 Between 9.30 p.m. and 10 p.m. there will be some music only.
 10 p.m.—FROM THE STUDIO.
 "The Daily Mail" news.
 Weather News.

FOREIGN BROADCASTERS

- JOCK—Naxos Radio Broadcasting Co., BRISBANE, JAPAN 345 metres, 1000 watts. (Announcement in English and Japanese).
- JOBK—Osaka Central Broadcasting Co., Osaka, JAPAN; 345 metres, 1000 watts. (Announcement in English and Japanese).
- JOAK—Tokyo Broadcasting Co., Tokyo, JAPAN, 375 metres, 1000 watts. (Announcement in English and Japanese).
- JFC—Batavia Radio Vereniging, BATAVIA, 220 metres, 40 watts.
- KZRM—Manila, PHILIPPINE ISLANDS; 411 metres, 1000 watts. (Announcement in English and Philippine).
- KGL—Honolulu Advertiser, Honolulu, HAWAII, 270 metres, 500 watts.
- KGO—Oakland, CALIFORNIA; 281.3 metres, 1000 watts.
- KFI—Los Angeles, CALIFORNIA; 467 metres, 5000 watts.
- KCA—Denver, COLORADO; 372.4 metres, 1000 watts.

5CL, ADELAIDE

Central Broadcasters, Ltd.

Wave Length, 395 Metres.

Friday.

MIDDAY SESSION.

- 12 noon—G.P.O. Chimes.
 12.1 p.m.—General information and "Advertiser" news service.
 12.30 p.m.—Musical numbers from the studio.
 12.50 p.m.—S. C. Ward and Co.'s Stock Exchange Intelligence.
 12.57 p.m.—Meteorological information.
 1.1 p.m.—Entertainment for sick children.
 1.30 p.m.—Musical numbers from the studio.
 1.57 p.m.—Meteorological information.
 2 p.m.—Chimes and close down.

AFTERNOON SESSION.

- 4 p.m.—G.P.O. Chimes.
 4.1 p.m.—Orchestral selections from the Maple Leaf Cafe.
 9.30 p.m.—Orchestral selections from Foy and Gibson's Showrooms.
 4.30 p.m.—Orchestral selection from Arcadia Cafe.
 4.57 p.m.—S. C. Ward and Co.'s Stock Exchange Intelligence.
 5 p.m.—G.P.O. Chimes and close down.

EVENING SESSION.

- 8 p.m.—G.P.O. Chimes.
 8.1 p.m.—DINNER MUSIC by the Covered Garden Orchestra.
 8.30 p.m.—Children's time.
 8.35 p.m.—Belle solo, Hedley Smith.
 7 p.m.—Bong, Mary Rainbow.
 7.5 p.m.—Pianoforte solo, Hedley Smith.
 7.10 p.m.—Quartette by the Eddytime Quartette Party.
 4.15 p.m.—Belle solo, Hedley Smith.
 7.20 p.m.—S. C. Ward and Co.'s Stock Exchange Intelligence. Market reports by A. W. Sandford and Co. A. E. Hill and Co., Dalgety and Co. S. A. Farmers Co-operative Union, Taylor Bros, Retail Grocers' Association, J. H. Young's special report on the Tomato Market.
 7.30 p.m.—Extracts from "News Bulletin" supplied by Commonwealth Minister of Markets and Migration.
 7.45 p.m.—"Willow" will talk on Cricket.
 8 p.m.—G.P.O. Chimes.
 8.1 p.m.—Orchestral selections by Malcolm Reid's Orchestra, relayed from Warraboo.
 8.30 p.m.—Soprano solo, Linda Wald.
 8.25 p.m.—Orchestral selection by Malcolm Reid's Orchestra.
 8.40 p.m.—Soprano solo, Linda Wald.
 8.45 p.m.—Orchestral selections by Malcolm Reid's Orchestra.
 9 p.m.—G.P.O. Chimes.
 9.1 p.m.—Meteorological information.
 9.3 p.m.—Dalgety's Special report.
 9.5 p.m.—Belle solo; Harold Durbin.
 9.3 p.m.—Banjo solo and Violin solo:
 Percy Gardner.
 9.17 p.m.—Cecily; Will Rudge.
 9.35 p.m.—Belle solo; Harold Durbin.
 9.30 p.m.—Mr. D. L. Laurie (Poetry Editor) Talk on "Summer Hatching."
 9.45 p.m.—Mandy's Song; Percy Gardner.
 9.45 p.m.—Comedy; Will Rudge.
 9.57 p.m.—Baritone solo; Harold Durbin.
 10 p.m.—G.P.O. Chimes.
 10.1 p.m.—"Advertiser" General News Service.
 10.15 p.m.—Baritone solo; Harold Tideman.
 10.18 p.m.—Violin solo and Banjo solo:
 Percy Gardner.
 10.28 p.m.—Baritone solo; Harold Tideman.
 10.30 p.m.—Ray from the Musée De Danse, Glenelg Dance selections.
 10.35 p.m.—Saturday's programme and Meteorological information.
 11 p.m.—G.P.O. Chimes and National Anthem.

6WF, PERTH

Westralian Farmer's.
Wave Length, 1250 Metres.

Friday.

- 12.30 p.m.—Tune in.
12.35 p.m.—Markets News, and Cabins.
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:
2 p.m.—Close down.
2.30 p.m.—Tune in.
3.30 p.m.—Organ music relayed from the Grand Theatre, Murray Street.
Vocal interludes from the Studio.
4.30 p.m.—Close down.

EVENING SESSION.

- 6.45 p.m.—Tune in.
8.0 p.m.—Musical evening for the Kiddies by Uncle Harry and Duff.
7.20 p.m.—Stock, Markets, News.
7.45 p.m.—Racing talk by the Sporting editor of "Truth" Newspaper Co.
8 p.m.—Time signal from Perth Observatory.
8.15 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia.
Station announcements, such as alterations to programmes, etc.

POPULAR NIGHT

- 8.1 p.m.—Musical programme from the studio, including vocal and instrumental artists:
8.50 p.m.—Talk: "Sarf Work and Life Saving" by Mr. C. Bader, President, City of Perth Surf Club.
Orchestral Music, played by the Grand Symphony Orchestra, conducted by Mr. Val Smith, relayed from the Grand Theatre, Murray Street.
10 p.m.—Late news items by courtesy of "The Daily News" Newspaper Co.
Shows within Range announcement.
Weather report and forecast.
10.30 p.m.—Close down.

184.5 METRE TRANSMISSION.

Simultaneous broadcast on 184.5 metres of Programme given on 1250 Metres, commencing at 6.45 p.m.

7ZL, HOBART

Tasmanian Broadcasters, Ltd.
Wave Length, 516 Metres.

Friday

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

- 2 p.m.—G.P.O. Clock chimes the hour.
3.1 p.m.—Tune in selection.
3.15 p.m.—Hobart Stock Exchange Quotations.
Weather information.
Items of interest, announcements.
3.15 p.m.—Selections by 7ZL Studio Trio:
March: "National Gene" (Souza).
"Gondola d'Amore" (Candiani).
Selection: "Quaker Girl" (Meecher).
Violin solo: Selected. (Mr. E. J. McCann).
"Hungarian Ephebe" (Benda).
Piano solo: Selected. (Mr. A. Roberts).
"Dreams of Yesterday" (Humphries).
3.15 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.
7.25 p.m.—Fruit Poultry and produce sent through the courtesy of Roberts and Co. Hobart.
7.35 p.m.—Gardening talk by Mr. George Nation—Glen Nurseries Outcove.

7.50 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.—Selections by 7ZL Studio Trio:
"Mingot Bean Brummel" (Young).
"Caprice" (Rege Durocher) (Briegleb).
"Gavotte Primavera Tondross" (Mozart).
Clarinet Solo: Selected. (Mr. A. Cadden).
"Romance, A Tale of Two Hearts" (Rohets) (Sovani of Gernie Jacobs-Bund).
"Bourne" "Rosa Stained" (Drill).
Pianoforte solo: Selected. (Mr. A. Roberts).
"An Old Number" (Davis).
Intermission: "Spirit of Youth" (Dahlquist).
"Two Tainian Dances" (Jacobs-Bund).
Interpreted with items from the following:
Miss Mona McGuire (soprano).
Miss Dulcie Tate (soprano).
Miss Ruby Pines (pianist).
Miss Sarah Treney (soprano).
Mr. George Hook (comedian).
Mr. Harry Bates (singer).
Mr. Vincent Webb (comedian).

9.30 p.m.—Chat on Cricket by "Mid-off."
9.40 p.m.—British Official Wireless News.
9.45 p.m.—"Mercury" special interstate news service.
Shows within wireless range.
Tasmanian District Weather reports.
Weather forecasts.
Travellers week-end information.
National Anthem.

Saturday, Dec. 22
2FC, SYDNEY.

EARLY MORNING SESSION.

7 a.m. to 9 a.m.

MORNING SESSION.

10 a.m. to 11.30 a.m.

MIDDAY SESSION.

12 noon—"Big Ben" and announcements.
12.15 p.m.—Stock Exchange, first call.
12.3 p.m.—Studio music.
12.35 p.m.—"Sydney Morning Herald" news service.
12.52 p.m.—Rugby wireless news.
12.55 p.m.—Studio music.
NOTE: From 11.30 a.m. results and descriptions of the Cricket Match, New South Wales versus Tasmania, direct from the Sydney Cricket Ground.

Short Wave Broadcasters

Schedules and Wavelengths Subject to Change.

2NM, Gerald Marcus, Catterham, England, 23 and 26 metres (B.B.C. Programme).
PCJJ, Philips Experimental Station, Eindhoven, Holland, 30.2 metres (B.B.C. Programme).
2XAF, General Electric Co., Schenectady, New York State, U.S.A., 23.7 metres (W.G.Y. Programme).
2XAG, General Electric Co., Schenectady, New York State, 24, 24 and 22 metres (W.G.Y. Programme).
KDKA, Westinghouse Electric Co., Pittsburgh, Penn., U.S.A., 65.1, 14 and 42 metres.
WLV, Crowley Radio Corporation, Cincinnati, Ohio, U.S.A., 32 metres.
2EAL, "Radio News", New York City, U.S.A., 30.91 metres (W.N.Y. Programme).
JB, Johannesburg Broadcasting Company, South Africa, 20 and 22 metres.
ISW, Marconi Company, Chelmsford, England, 24 metres.
RPN, Moscow, U.S.S.R., 29 metres.

1 p.m.—"Big Ben."
Weather intelligence.
1.3 p.m.—"Evening News" midday news service.
1.20 p.m.—Studio music.

AFTERNOON SESSION.

NOTE: During the afternoon descriptions and results of the A.C. Meeting at Randwick will be given by the 2FC Racing Commissioner.
Intervals of Racing and Cricket will be filled with musical items as follows:
From the Crystal Palace Theatre, George Street, Sydney:
Orchestral music.
From the Studio:
GUY ARNOLD, novelty pianist.
GUY MONTAGUE, violinist numbers.
4.15 p.m.—Complete resume of the day's Sporting Events.
5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

5.40 p.m.—The chimes of 2FC.
5.45 p.m.—The "Hells 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" Weather intelligence.
7.3 p.m.—Late sporting news.
7.15 p.m.—"Evening News" late news service.
7.25 p.m.—Studio music.

NIGHT SESSION.

7.30 p.m.—Programme announcements.
7.35 p.m.—Live! Live! Live! Live!
7.45 p.m.—"Let's go around the World," a talk by the Rev. F. H. Roward. The third of the series.
7.50 p.m.—Announcement.
8 p.m.—"Big Ben."
From St. Andrew's Cathedral, by arrangement with the Very Rev. Dean Talbot: Christmas Carol by St. Andrew's Cathedral Choir.
8.50 p.m.—From the Studio:
Mr. Scott Alexander will present for the first time in the history of Radio a real old-fashioned Christmas Programme, specially written for 2FC by Cdrington Hall, entitled

"CINDERELLA."

Act I.

Scene 1. The Haunted Corridor.
Scene 2. The Fairy Glen—where Cinderella meets the Prince, and helps the old witch to gather sticks.
Scene 3. The bad Baron's Harem.
Scene 4. The Kitchen. Invites for the ball.
Cinderella and the steps left at home—the Fairy's arrival, Cinderella becomes a Royal Princess and goes to the ball.
6.10 p.m.—SCROOGE:

A Christmas Carol

Charles Dickens, adapted especially for broadcasting by Maurice Dudley, CHARACTERS:
Ebenezer Scrooge..... MAURICE DUDLEY
Bob Cratchit (his nephew)..... EDWIN J. LEWIS
Fred Wrayland (his nephew).....

Mr. Worthington..... ALAN HELL
Mr. Middlemark..... H. M. HILL
GHOST OF JACOB MARLEY..... J. HOWLETT BOIS

The Cratchitt children.
Martha..... KATE CUTLER
Bella..... MYRA MATHESON
Peter..... SYD DALE
Tiny Tim..... PAT McLELLAN
The Boy Scrooge..... PAT McLELLAN
Fanny (his sister)..... AILEA GAVAN
Scrooge's sweetheart (ie MRS. DUDLEY Mrs. Cratchitt)..... MRS. DUDLEY
Produced by Maurice Dudley.
Incidental Music arranged by Wm. G. Sears.

8.47 p.m.—BERNARD THOMAS, (singer):
"If With All Your Hearts" (Cooper).
"Cujus Animum" (Rossini).

Perfect Reception Every Day Possible with Philco.

AFTERNOON SESSION.

- 9.44 p.m.—FRENCH BROS. entertainers.
 "Pondar Air."
 10 p.m.—"Discosure" (Mr. Frank Dester, of the "Argus"), will speak on tomorrow's races.
 10.10 p.m.—VAUDE AND VERNE, entertainers.
 "Christmas Carolities."
 10.17 p.m.—BRUNSWICK CITY BAND; Anthem, "Awards and Last Ye."
 Chorus, "Break Four in Three."
 10.21 p.m.—THE BIRDS, soprano.
 "To a Messenger" (Peters).
 "The Cupid" (Mama Zaccas).
 10.33 p.m.—News service. Meteorological information. British official wireless news from Rugby. Road notes. Island steamer movements.
 10.45 p.m.—JOE ARDROWAN AND HIS SYNOPSISING SYMPHONISTS.
 "The Toy Town Parade" (Morelli).
 "That Once Again" (Ash).
 "Charmaine" (Raper).
 "Some Day, Sweetheart" (Spikes).
 "Yan Gotta Be Humo To-night" (Dukin).
 11 p.m.—OUR GREAT THOUGHTS.
 I have always thought of Christmas time, when it has come around, apart from the festivities due to its sacred nature and significance, if anything belonging to it can be apart from that as a good time; a kind, forgiving, charitable, pleasant time—Charles Dickens.

- 11.1 p.m.—JOE ARDROWAN AND HIS SYNOPSISING SYMPHONISTS.
 11.48 p.m.—GOD SAVE THE KING.

Act II.

- Scene 1. Exterior of the Royal Palace.
 Scene 2. The Ball Room. Cinderella receives the Prince's warning and her clothes change magic in a twinkling. The Prince finds the glass slipper.
 Scene 3. On the Road Home.
 Scene 4. Back home. The Prince's proclamation. The Prince and Cinderella's feet.
 The only change changed.
 Scene 5. The Prince's wedding to Cinderella.
 10.4 p.m.—From the Studio:
 Lionel Lind, English baritone.
 Lyle, weather forecast.
 10.5 p.m.—From the Ambassadors.
 The Ambassadors Dance Orchestra, conductor Mr. Al Hadden.
 Interests of the Ambassadors will be filled with "Big Band Blues Tonic the Hindle."
 10.55 p.m.—Lyle news and announcements.
 11 p.m.—"Big Band" The Wally.
 11.10 p.m.—From the Ambassadors.
 The Ambassadors Dance Orchestra.
 11.20 p.m.—"Big Band."
 National Anthem.
 Close down.

- NOTE: The British Broadcasting Corporation has very graciously accepted the invitation extended to them by Station 2BL to broadcast to Australia for relay a typical Christmas programme. This will be broadcast by B.B.C. on short wave station of the B.B.C., London, and will be relayed by 2BL.

In reciprocation, 2BL will broadcast on Monday morning, 24th December, a programme to be picked up and relayed by the B.B.C., London, on Christmas Day, between 6 p.m. and 8 p.m.

2BL, SYDNEY

Saturday.

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

MORNING SESSION.

- 11 a.m.—G.P.O. clock and chimes.
 Musical programme from the Studio.
 11.15 a.m.—Women's session. Social notes.
 Replies to correspondents by Mrs. Jordan.
 Talk on "Simple Cooking for Children" by Mrs. Jordan.

Race results broadcast immediately after each race by courtesy of the "Sun."

- 12 noon—G.P.O. clock and chimes.
 12.05 p.m.—Forecast and weather report.
 12.10 p.m.—Musical programme from the Studio.
 12.20 p.m.—News from the "Sun."
 12.25 p.m.—Sporting and athletic fixtures.
 12.30 p.m.—What's on at the pictures and theatres.
 12.50 p.m.—Musical programme from the Studio.
 12.55 p.m.—News from the "Sun."
 1.00 p.m.—Business results.
 1.05 p.m.—Musical programme from the Studio.
 1.10 p.m.—G.P.O. clock and chimes.
 Musical items from the Studio.
 1.15 p.m.—Sporting talk and athletic fixtures for the day.
 1.20 p.m.—Musical programme from the Studio.
 1.25 p.m.—G.P.O. clock and chimes.
 Talk to children and special entertainment for children in hospital.
 1.30 p.m.—G.P.O. clock and chimes.
 Racing course.
 1.40 p.m.—Talk on "Women of the Orient" at all ages.
 1.45 p.m.—G.P.O. clock and chimes.
 News from the "Sun."
 1.50 p.m.—Musical programme from the Studio.
 1.55 p.m.—News from the "Sun."
 2.00 p.m.—G.P.O. clock and chimes.
 Racing course.
 2.05 p.m.—Musical programme from the Studio.
 2.10 p.m.—News from the "Sun."
 2.15 p.m.—Musical programme from the Studio.
 2.20 p.m.—News from the "Sun."
 2.25 p.m.—Musical programme from the Studio.
 2.30 p.m.—News from the "Sun."
 2.40 p.m.—Dunwoody Dance Band broadcast from the Dunwoody Cabaret.
 1 p.m.—G.P.O. clock and chimes.
 4.5 p.m.—News from the "Sun."
 4.10 p.m.—Musical programme from the Studio.
 4.15 p.m.—News from the "Sun."
 4.20 p.m.—Musical programme from the Studio.
 4.25 p.m.—News from the "Sun."
 4.30 p.m.—Dunwoody Dance Band.
 4.40 p.m.—News from the "Sun."
 4.45 p.m.—Racing course.
 5 p.m.—G.P.O. clock and chimes.
 Close down.

EARLY EVENING SESSION.

- 4.45 p.m.—G.P.O. clock and chimes.
 Children's session.
 5.00 p.m.—Musical programme from the Studio.
 7.15 p.m.—Result of day's sporting and country news from the "Sun."
 7.30 p.m.—Talk on "The Aborigines" by "Bird."
 8 p.m.—G.P.O. clock and chimes.
 Broadcasters' Typical Chorus.
 8.15 p.m.—Broadcasters' Trio.
 8.20 p.m.—Mr. Peter Subbaldini, bass.
 8.25 p.m.—Miss Helena Stewart, soprano.
 8.30 p.m.—Duet, Miss Amy Quings and Mr. Peter Subbaldini.
 8.35 p.m.—Broadcasters' Trio.
 8.40 p.m.—Mr. Lance Jeffrey, tenor.
 8.45 p.m.—Miss Anne Gilling, contralto.
 8.50 p.m.—Duet, Miss Helena Stewart and Mr. Lance Jeffrey.
 8.55 p.m.—Broadcasters' Trio.
 9.00 p.m.—Weather report and forecast by courtesy of Mr. C. J. Mares, Government Meteorologist.
 9 p.m.—G.P.O. clock and chimes.
 9.1 p.m.—Cyril Kaye and the Westworth Cafe Orchestra transmitting from the ballroom of 21 Westworth.
 9.15 p.m.—Reg Harrison, comedian.
 9.21 p.m.—Cyril Kaye and the Westworth Cafe Orchestra.
 9.25 p.m.—Miss Mabel Fotheringham, soprano.

- 9.30 p.m.—Cyril Kaye and the Westworth Cafe Orchestra.
 9.45 p.m.—Mr. Reg Harrison.
 9.55 p.m.—Cyril Kaye and the Westworth Cafe Orchestra.
 10 p.m.—G.P.O. clock and chimes.
 10.1 p.m.—Resume of following day's programme.
 10.15 p.m.—Miss Mabel Fotheringham.
 10.22 p.m.—"Sun" news items.
 10.16 p.m.—Cyril Kaye and the Westworth Cafe Orchestra.
 10.25 p.m.—Christmas Carol.
 10.40 p.m.—Cyril Kaye and the Westworth Cafe Orchestra.
 10.50 p.m.—Christmas Carol.
 11 p.m.—G.P.O. clock and chimes.
 11.1 p.m.—Cyril Kaye and the Westworth Cafe Orchestra transmitting from the ballroom of the Westworth.
 11.20 p.m.—G.P.O. clock and chimes.
 National Anthem.

2 UW, SYDNEY

Saturday.

"Christmas Eve"
 Close down.

3LO, MELBOURNE.

Saturday.

- MORNING SESSION.
 11.0 a.m.—JOHNSTON'S STUDIO BOYS.
 March, "Silverwood."
 11.10 a.m.—BERNARD THOMAS, Tenor.
 "The House of the Rising Sun."
 "Evening Song" (Hummelball).
 11.17 a.m.—JOHNSTON'S STUDIO BOYS.
 A Sacred Song.
 11.20 a.m.—DAVID GRAHAME, Baritone.
 (By permission of J. C. Williamson, Ltd.)
 "Odeum in Fairland" (G. Suter).
 "Maire My Girl" (G. Aitken).
 11.23 a.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 FROM THE STUDIO.
 11.44 a.m.—JOHNSTON'S STUDIO BOYS.
 "Spring Song" (Mendelssohn).
 11.52 p.m.—BERNARD THOMAS, Tenor.
 "Lullaby" (Bucci-Peccia).
 "Bonny Mazy of Argyle."
 12.0 noon.—Melbourne Quaterly "Time Signal."
 "Are you contributing to the Christmas spirit—Be generous and pleasant-tempered and forgiving, even as God scatters favours on those who do so, rather than the reverse."
 12.3 p.m.—Metal Plates Received by the Australian Mines and Metals Association from the London Stock Exchange this day.
 British Official Wireless News from Rugby. Benier's and the Australian Press Association Cable; News Service.
 12.38 p.m.—STUDIO QUARTETTE.
 "Xmas Medley" (Anton).
 12.50 p.m.—DAVID GRAHAME, Baritone.
 "Descriptive Green and Gold" (Sanderson).
 "Fill a Glass With Golden Wine" (Quilter).
 12.57 p.m.—Stock Exchange Information.
 12.59 p.m.—STUDIO QUARTETTE.
 "Around the Christmas Tree."
 12.47 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.

FROM THE STUDIO.

- 12.47 p.m.—ETHEL FORSIAHL, Soprano.
 "Star Victim" (Salvator Rosa).
 "A Carol of Jess Child" (Haberli-Huehler).
 1.3 p.m.—Meteorological Information.
 Weather forecast and barometer for Victoria, Tasmania, New Australia and New South Wales; Ocean Forecasts; River Reports.
 1.11 p.m.—JOHNSTON'S STUDIO BOYS.
 Selection "Classical."

Philcos are Aristocrats among Batteries.

121 p.m.—VAUDE AND YERNE, enter-
tainers.
"Cherry Chippies"
1.24 p.m.—STUDIO QUARTETTE:
"A Kiss More" (Am.).
1.37 p.m.—REGINALD BRADLEY, Violin:
"The Old Refrain" (Reveries).
1.45 p.m.—ETHEL FORSHAW, Soprano:
"Thea Singer"
"The Elf Man" (Cello).
1.48 p.m.—JOHNSON'S STUDIO BOYS:
"The Elf Man" (Singing Globe).

2.0 p.m.—Description of Banjara Handicap, two miles, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
2.2 p.m.—Description of "The Sporting Globe."
2.15 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
2.30 p.m.—Description of Harlequin Handicap, four furlongs, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
2.43 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
2.45 p.m.—Close Down: A description of the WILLIAMS STAKES, one mile, A.J.C. Races, will be given during the afternoon from the Handicaps Racecourse, Sydney.

AFTERNOON SESSION.
3.0 p.m.—Melbourne Observatory Time Signal.
3.1 p.m.—Description of Koomubula Maiden, one mile, MELBOURNE, by "Musket" of "The Sporting Globe."
3.2 p.m.—Transmission from Auditorium, Collins-street, Melbourne.
3.3 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
3.40 p.m.—Description of Lalanga Handicap, one mile, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
3.45 p.m.—Transmission from Auditorium.
3.50 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
3.55 p.m.—Transmission from Auditorium.
4.0 p.m.—Description of Kiata Handicap, a furlong, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
4.10 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
4.15 p.m.—Transmission from Auditorium.
4.20 p.m.—Description of Kiata Handicap, a furlong, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
4.25 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
4.30 p.m.—Transmission from Auditorium.
4.35 p.m.—Description of Kiata Handicap, a furlong, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
4.40 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
4.45 p.m.—Transmission from Auditorium.
4.50 p.m.—Description of Kiata Handicap, a furlong, MOONEE VALLEY, by "Musket" of "The Sporting Globe."
4.55 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
5.0 p.m.—"Herald" News Service; Stock Exchange Information.
5.10 p.m.—Description of INTER-STATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
5.15 p.m.—Close Down.

EVENING SESSION.
CHILDREN'S HOUR.
5.30 p.m.—Late Sporting Results.
5.40 p.m.—Answers to Letters and Birthday Greetings by "LITTLE MISS KOOKA-SUBRA."
5.50 p.m.—Description of Finale of Today's Great Interstate Cricket Match, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
6.0 p.m.—STUDIO QUARTETTE:
"Little Class Suite."
6.10 p.m.—FAIRY PLAY for children of all ages, presented by the pupils of MISS VETTY LANDAU.
"LITTLE HEARTS."
Princess Darling JOHANNY BETHUNE
Fair Queen OWEN'S HULL
Ogie MLLA REWELL
Puck THELMA HULL
Fairy Bunch GILLIE DUNNIN
The Fairy LYLA BRYNOLP
Home: A GLADE IN THE FOREST.
Time: ONE UPON
Songs incidental to the play.—

"The Little White Girl of Dream," The Fairy Queen.
"A Wedding in Fairyland," Fairy Bluebell.
Incidental music by MISS ROSA HUSKIN.
A.C.M.
All the characters in the play are portrayed by children under 14 years of age.
6.40 p.m.—Sporting News v.
6.45 p.m.—"Herald" News Service: Weather Synopsis; Shipping Movements.
6.52 p.m.—Stock Exchange Information.
6.55 p.m.—"Herald" News Service.
7.0 p.m.—Market Reports by the Victorian Producers' Co-operative Co. Ltd.; Poultry, Grain, Hay, Straw, Jute, Dairy, Produce, Potatoes, and Domestic Market Reports of Fruit by the Victorian Fruit Growers' Association; Retail Prices; Wholesale Prices of Fruit by the Wholesale Fruit Merchants' Association; Citrus Fruits.

NIGHT SESSION.
During the evening, races to be selected will be described from the Melbourne.
7.15 p.m.—MR. F. CHAPMAN, National Museum.
"The Building of the Sea Shell."
7.20 p.m.—Another Interesting Chat with "MUSKET."
7.45 p.m.—The Right Hon. S. M. Bruce P.C. M.P., Prime Minister of Australia, will officially open the Mardalike Christmas Caravan.
Mr. Frank Gross, M.L.A. and Cr. D. White, Mayor of Melbourne and Moderator.

CHRISTMAS EVE A SPECIAL PROGRAMME
AND SOME CHRISTMAS CAROLS!
8.5 p.m.—We have pleasure in announcing that a special Christmas Eve programme has been arranged.
IN HOLIDAY SPIRIT.
10.10 p.m.—Description of Mardalike Maiden, one mile, MELBOURNE, by "Musket" of "The Sporting Globe."
10.15 p.m.—JOE ARONSON AND HIS SYMPHONISTS:
"I Can't Get Over a Girl Like You"
"There's Everything New About You" (Gypsy).
10.24 p.m.—Late Sporting Results; Answers to letters; Special Wireless News from Rugby; Island Racecourse Movements; The Royal Automobile Club of Victoria's message for ladies to get MILDREDS!
"Out and Out" setting, "Baby" setting a pleasure not a pearl, "Baby First."
10.30 p.m.—ETHEL FORSHAW, Soprano:
"Old Nan" (Happy Day) (Frank Reizel).
"Love Wink" (Archie) (Frank Reizel).
10.40 p.m.—JOE ARONSON AND HIS SYMPHONISTS:
"The Lullaby" (Lullaby) (Lullaby).
"Look-a-Doodle, I'm On My Needle" (Goin' Home).
"Song of Shanghai" (Gypsy).
10.55 p.m.—REGINALD BRADLEY, Violin:
"Midnight Bells" (Huberman).
11.0 p.m.—J. HOWARD KING, Baritone:
"The Carols" (Gould).
"Heard December's Names"
11.12 p.m.—JOE ARONSON AND HIS SYMPHONISTS:
"Lucky Day" (Hedden).
"Deep is My Heart" (Gould) (Rohmert).
"Zip Zap," piano solo (Hoson).
11.20 p.m.—AGNES FORTUNE, Piano, and REGINALD BRADLEY, Violin:
"Old Folk at Home" (Kretzler).
11.28 p.m.—ETHEL FORSHAW, Soprano:
"The Heart Warblers" (Holt).
"Sunder" (Reidinger).
"Hark! the Herald Angels Sing, Glory to the newborn King!
Peace on earth, and mercy mild,
God and sinners reconciled."
—Charles Webster.

11.32 p.m.—COLLINGWOOD CITIZENS' BAND.
11.55 midnight—OUR GREAT THOUGHT.
The earth has grown old with its kisses of care,
It's a million times I always is young
The heart of the jewel burns lustre and lay
And its soul full of music, breaks forth
When the song of the angels is sung.
—Phillip Brooks.
12.1 a.m.—GOD SAVE THE KING.

3AR, MELBOURNE

Saturday.
MORNING NEWS SESSION 11 to 12 noon.
MIDDAY CONCERT SESSION, 12.1 p.m.
Transmitted from Panatrophe House, 238 Collins Street, by exclusive permission of Wills and Wills Ltd., on the Brunswick Panatrophe.
1 p.m.—Sheffield Shield Cricket Series.
Close Down.

MATINEE SESSION
ORCHESTRAL CONCERT.

SPORTS RESULTS.—During the afternoon the results of the Moonee Valley races will be broadcast immediately each race is run. Also Sheffield Cricket Series.
2.00 p.m.—Moonee Valley Races. Result of Banjara Handicap, 2 miles.
2.10 p.m.—Kiata Handicap, 1/4 mile.
2.24 p.m.—Moonee Valley Races. Results of Barkula Handicap, 4/4 furlongs.
2.45 p.m.—Miss Dorothy Epton-Jones, conductor.
"Lured to Summer" (Johnson).
"Sometimes when Night is Rich" (Phillips).
2.50 p.m.—Studio Orchestra.
3.00 p.m.—Moonee Valley Races. Result of Koomubula Maiden Handicap, 1 mile.
3.15 p.m.—Miss Dorothy Epton-Jones, conductor.
"Lured to Summer" (Johnson).
"Sometimes when Night is Rich" (Phillips).
3.20 p.m.—Studio Orchestra.
3.30 p.m.—Moonee Valley Races. Result of Koomubula Maiden Handicap, 1 mile.
3.45 p.m.—Miss Dorothy Epton-Jones, conductor.
"Lured to Summer" (Johnson).
"Sometimes when Night is Rich" (Phillips).
3.50 p.m.—Studio Orchestra.
4.00 p.m.—G.P.O. Clock sets "Time."
4.10 p.m.—"A CHRISTMAS CAROL."
Special performance of selected scenes from Charles Dickens' immortal story of Christmas.
Narrator: Mr. V. Epton Jones.
With music by Frederick Gounod, and effects by Mr. Harold Bradley and the Studio Orchestra.
4.20 p.m.—Mr. Herbert Phillips, violin.
"The Merry Widow" (Koslosky).
4.30 p.m.—Moonee Valley Races. Result of Barkula Handicap, 4/4 furlongs.
4.45 p.m.—Mr. James Hunt, bass.
"Diaphanous" (Gounod).
"Dream Not, Young Lovers" (Handel).
4.45 p.m.—Studio Orchestra.
4.55 p.m.—Moonee Valley Races. Result of Kiata Handicap, 1/4 mile.
4.55 p.m.—"Herald's Entertainment."
5 p.m.—D.P.O. Clock sets "Five."
Close Down.

CHILDREN'S SESSION.
5.30 p.m.—Uncle Mac's entertainments.

EVENING SESSION.
XMAS EVE STAGE.

7.30 p.m.—"Eve's Story's Garden," special work and talk to Mr. W. Watson, President of the Nurseries' and Gardeners' Association of Victoria.
8.10 p.m.—Newmarket Centre talks. Notice: Today's sporting results.
8.15 p.m.—G.P.O. Clock sets "Eight."
A special Christmas Eve programme to be presented by the Frodothe Children's and Soldiers' Band (Conductor, W. H. Gate, Junr.).
The Royal Quartette: "Fairy, Miss Marie D. Conductor: Mr. Fred J. Watford, Junr., Contralto; Mr. Fred J. Watford, Tenor; Mr. Charles S. Tompkins, Baritone; Mr. Edwin Furell, Bass. Vocal Accompanist: Transmitted from St. Patrick's Hall, Heenan Street, Melbourne.
8.1 p.m.—Northcote Citizen's Band (Christmas Carols).
"Christmas Awake" (Wainwright).
"While Shepherds Watched their Flocks by Night" (Tall).
8.9 p.m.—Mr. Fred J. Watford, Tenor.
"Silent Noon" (Vaughan Williams).
"Electric" (Massenet).

Let Your Battery Save Your Purse: Philco.

- 8.18 p.m.—Miss Dorothy Eytos-Jones and Mr. Charles Treweek.
Duet, "It was a Lover and His Lass" (Walthow).
Duet, "Twilight" (Nevin).
8.23 p.m.—Northcote Children's Band.
Pavane, "Gems of Sacred Songs" (Veron).
- 8.34 p.m.—Miss Marie Scott, Soprano.
"The Wind in the South" (Ethel Scott).
"Southern Lullaby" (Helmman).
8.40 p.m.—Mr. Fred J. Wataford and Mr. Charles Treweek.
Duet, "Under the Desert Star" (Temple).
Duet, "The Two Beggars" (Wilson).
8.47 p.m.—Northcote Children's Band, and Royal Quartette Party.
"Hark the Herald Angels Sing" (Wesley).
9 p.m.—Northcote Children's Band.
"Aeolian Fancies" (Reading).
9.4 p.m.—Miss Dorothy Eytos-Jones, contralto.
"Bell" (Hurlston).
"Blossom" (Hurlston).
9.11 p.m.—Miss Marie Scott and Mr. Fred J. Wataford.
Duet, "A Night in Venice" (Lauristone).
Duet, "O, Lovely Night" (Ronald).
9.18 p.m.—"Mr. W. H. Gore, Jr., concert."
"The Star of Bethlehem" (Adams).
9.23 p.m.—Mr. Charles Treweek, baritone.
"I Will not Drive" (Schubert).
"The Rose-tree" (Scott).
9.30 p.m.—The Christmas Story.
9.50 p.m.—Northcote Children's Band.
"Xmas Carol—The First Noval" (Scott).
"Joy to the World".
9.57 p.m.—Miss Marie Scott and Miss Dorothy Eytos-Jones.
Duet, "Twin Stars" (Chaminade).
Duet, "Minuet" (Beethoven).
10.4 p.m.—The Royal Quartette Party.
Christmas Carols.
"O, Come all ye Faithful".
"Good King Wenceslaus".
10.18 p.m.—Mr. W. H. Gore, concert.
"Home, Sweet Home" (D. Hall), by re-voiced.
10.18 p.m.—Northcote Children's Band.
March, "Colonel Bogey" (Kennel Afford).
10.23 p.m.—Miss Marie Scott and Miss Dorothy Eytos-Jones.
Duet, "Dress Bagg" (Johnson).
Duet, "Crying Water" (Humber).
10.30 p.m.—Mr. Fred J. Wataford and Mr. Charles Treweek.
Duet, "Solenne in Quasi terra" (Verdi).
Duet, "The Moon in the Hallow" (Benjamin).
10.37 p.m.—Northcote Children's Band.
March, "Queen of the Fens" (Smith).
10.43 p.m.—Royal Quartette Party.
Christmas Carols.
"Infante Be Gentle".
"Come With us Sweet Flowers" (Old French).
"Silent Night" (Roberta).
10.50 p.m.—Tomson's Entertainment.
10.55 p.m.—Notices.
10.57 p.m.—Final weather forecast.
10.59 p.m.—Our Australian Good-Night.
Quote is from the King.
"The Circling Hoarths" in Roderic Quins.
11 p.m.—G.P.O. Clock says "Kleren".
God Save the King.

4QG, BRISBANE.

Saturday.

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

4.30 p.m.—A message for little listeners by Miss Warkah.
Close down.

EARLY EVENING SESSION.

The children's session will commence half an hour earlier than usual to-night in order to allow a special children's Christmas Eve entertainment to be staged.

- 6 p.m.—FROM THE STUDIO.
Children's Christmas entertainment in the Combined Bedtime Story-tellers at 4QG.
The session will include music by the 4QG Children's Quartette. A Christmas tale to the kiddies will be given by the Rev Canon J. Garland.
7.15 p.m.—Today's sporting news.
Selling notes by Mr. F. Smith.

7.48 p.m.—A gardening talk: "Select Shrubs for Home Gardens"—by "Tewocoo."

NIGHT SESSION.

"A Happy Christmas To All."
To-night's programme will tell the whole evening.

PART I.

TIVOLI THEATRE.

8 p.m.—FROM THE TIVOLI THEATRE.
Music by the Tivoli Operatic Orchestra under the baton of Mr. C. Goveas. Vendeville for the theatre.

PART II.

Radio Adaptation of Charles Dickens'

"CHRISTMAS CAROL."

(Arranged by Mr. H. Humphreys).

SYNOPSIS.

Scene 1: Scrooge and Marley's Counting House on Christmas Eve.
Scene 2: Scrooge's Chambers. The visit of Marley's Ghost.
Scene 3: Scrooge's Chambers at 1 o'clock in the Morning. The visit of the ghost of Scrooge's past. Fezziwig's Party.
Scene 4: Scrooge's Chambers: Visit of the ghost of the Present Christmas Party at Scrooge's nephew's home.
Scene 5: Scrooge's Chambers: Visit of the ghost of the Future. Scrooge's reclamation.
Scene 6: All well that ends well.

CAST.

Fred (Scrooge's Nephew) Mr. C. Cowan
Fred's Wife Miss Eileen McLennan
Ghost of the Past Mr. Stan. Ballinger
Ghost of the Present Mr. I. N. Viskib
Gentleman Collector Mr. C. Anderson
Bob Cratchit Mr. D. Whiteik
Fezziwig Mr. E. Cowan
The Boy Scrooge Mr. H. Humphreys
Jacob Marley Mr. H. Humphreys

8.30 p.m.—FROM THE STUDIO.
Christmas Carols.
Incidental music to the Radio Adaptation will be provided by the Studio Instrumental Quartette under the leadership of Mr. F. Smith.

PART III.

8.40 p.m.—FROM THE DAVIE PARK SPEEDWAY: A description of the motor cycle race.

PART IV.

LENNON'S HALLROOM
10 p.m.—FROM THE LENNON HOTEL:
Half an hour's dance music.

PART V.

"CHRISTMAS ENTERTAINMENT."
10.30 p.m.—FROM THE STUDIO:
Orchestra: "A Christmas Fantasia"
The Studio Instrumental Quartette.
(Conductor, Mr. F. Smith).

Choral Numbers:
"Adonia Fatale" (Reading).
The Bohemians.

Bass solo:
"Star of Bethlehem" (Adams).
Mr. J. P. Cornwell.

Orchestra:
"Hark the Herald Angels Sing" (Mendelssohn).
The Bohemians.

Tenor solo: "The Holy City" (Adams).
Mr. Gus. Williamson.

Violin solo: "The Lost Chord" (Sullivan).
Mr. M. Scott MacCallum with organ accompaniment by Mrs. H. Woolmer).

Monologue: "Christmas Tale" (Harris).
Mr. Tom Moller.

Orchestra: "Savoy Christmas Medley" (Somers).
The Studio Instrumental Quartette.

Tenor solo: "Ora Pro Nobis"
Mr. K. W. Miller.

Orchestra:
"We Have Seen His Star in the East" (Simpser).
The Bohemians.

Baritone solo: "Nazareth" (Gomond).
Mr. Ernest Harper.

Monologue:
"Christmas at Sea" (Robert Louis Stevenson).
Mr. T. Muller.

Vocal Trio: "Ye Shepherds Tell" (White).
Messrs. Williamson, Gilroy and Crane.

March: "Santa Claus" (Vekert).
The Studio Instrumental Quartette.
Orchestra: "Good King Wenceslas" (Crompton).
The Bohemians.

Violin solo: Selected.
Mr. H. Scott MacCallum (with organ accompaniment by Mr. H. Woolmer).
Chorus: "We Wish You All a Merry Christmas."
The Bohemians.

Orchestra:
"Collection of Christmas Carols."
The Studio Instrumental Quartette.

11.55 p.m.—Christmas Greetings to all from 4QG.

PART VI.
ST. STEPHEN'S CATHEDRAL—MID-NIGHT MASS.

The Midnight Mass will be relayed from St. Stephen's Roman Catholic Cathedral.

12 midnight—FROM ST. STEPHEN'S CATHEDRAL—Midnight Mass.
1 a.m.—Close down.

5CL, ADELAIDE.

Saturday.

MORNING SESSION.

11 a.m.—G.P.O. Chimes.
11.3 a.m.—General information and "Advertiser" news service.
11.30 a.m.—Musical numbers from the studio.
12.00 p.m.—G.P.O. Chimes and close down.

AFTERNOON SESSION.

2 p.m.—Musical numbers from the studio.
4 p.m.—G.P.O. chimes and close down.

EVENING SESSION.

8 p.m.—G.P.O. chimes.
8.1 p.m.—Dinner Music from Covent Garden Orchestra.
8.25 p.m.—Children's time.
8.30 p.m.—Christmas Greetings.
9 p.m.—The Kiddytyme Circus at the Radio.
7.15 p.m.—Song, "Wattle Lady".
7.30 p.m.—A Christmas Song by Uncle Mills.
7.50 p.m.—The Kiddytyme Band.
7.15 p.m.—Sporadic results.
8 p.m.—G.P.O. chimes.
8.1 p.m.—The Christmas Eve Impromptu Concert given the entire Company of the Station's "Kiddytyme Circus" after each item. A gala Programme.
8.30 p.m.—G.P.O. Chimes.
8.45 p.m.—Impromptu Concert continued.
9 p.m.—G.P.O. chimes.
10.1 p.m.—Sporting notes.
10.10 p.m.—Impromptu Concert (continued).
10.20 p.m.—G.P.O. Chimes.
11 p.m.—The Kiddytyme Circus by the Company.
11.15 p.m.—The Station's Greetings in Listeners.
11.25 p.m.—Christmas Day Programmes.
11.30 p.m.—National Anthem and close down.

6WF, PERTH.

Saturday.

MIDDAY SESSION.

12 noon.—Time in.
12.5 p.m.—Musical programme, including G.P.O. selections by Miss Evelyn White.
A.R.C.M.
12.47 p.m.—Market News and notes.

1 p.m.—Time signal from Perth Observatory.
1.1 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia.
1.5 p.m.—Close down.

AFTERNOON SESSION.

1.40 p.m.—Time in.

SPORTING SESSION.

Detailed description of Races relayed from Ascot racecourse, Belmont.

2 p.m.—Metropolitan Hurdles.
2.10 p.m.—W.A.T.F. Plate.
2.20 p.m.—Karrakatta Cup.

2.30 p.m.—FROM THE STUDIO:
Musical programme, including vocal and instrumental numbers.

Progressive Cricket scores.
4 p.m.—The Western Australian Derby.

4.45 p.m.—Perth Stakes.
5 p.m.—Metropolitan Handicap.
5.30 p.m.—Close down.

6.45 p.m.—Time in.
The evening transmission is broadcast on 12.5 metres, commencing at 6.45 p.m.

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RADIOKES QUALITY PRODUCTS

6.54 p.m.—Birthday greetings for the Kiddies by Uncle Daddy.
 7.10 p.m.—Sports results.
 7.20 p.m.—Markets, News and Cable.
 7.40 p.m.—Dinner music.
 8 p.m.—Time signal from Perth Observatory.
 8.1 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia. Station announcements, such as alterations to programmes, etc.

CONCERT NIGHT.

8.5 p.m.—Musical programme, including vocal and instrumental artists.
 Entering events described in detail from the W.A.T.A. Grounds.
 Band items.
 10 p.m.—Late news items by courtesy of "The Daily News" Newspaper Co.
 10.15 p.m.—Within Rings announcement, Weather report and forecast.
 Sports results.
 11 p.m.—Midnight Mass service relayed from St. Mary's Roman Catholic Cathedral, Perth.
 11.30 a.m.—Close down.

7ZL, HOBART

Saturday

MORNING SESSION.

11 a.m. to 11 noon.

AFTERNOON SESSION.

8 p.m.—G.P.O. Clock chimes the hour.
 9.1 a.m.—Broadcast by direct wire from the T.C.A. Ground sp-witness description by "Mid-On" Cricket Match News Town v Sandy Bay, English Batted and Sporting results announced during session.
 Close down.

EARLY EVENING SESSION

6.55 p.m.—Children's Corner by "Uncle Hector."
 7 p.m.—"Uncle Peters" half hour.

NIGHT SESSION.

7.50 p.m.—Musical selection.
 7.55 p.m.—Nature Lesson Book opened by Mr. F. G. Baker.
 7.58 p.m.—"Mercury" special Tasmania news service. Railway station produce sale. Weather forecast. Hobart Stock Exchange Quotations.
 8 p.m.—G.P.O. Clock chimes the hour.
 8.15 p.m.—Dances outside by Pavilion Band Band from City Hall Hobart, interspersed with musical items from the studio.
 10.20 p.m.—British Official Wireless News.
 Weather information.
 Station announcements—tomorrow's programme.
 Close down.

Sunday, Dec. 25

2FC, SYDNEY

CHRISTMAS DAY.

MORNING SESSION.

10.25 a.m.—Programme announcements.
 10.35 a.m.—From St. Mary's Cathedral (by arrangement with Rev. Father Crowley): The Hells of St. Mary's.
 10.50 a.m.—From the Christ Church, St. Laurence Sydney.
 Christmas Morning Service.
 A special musical programme, under the direction of Christiana Hellewans, Organist.
 12.50 p.m.—From the Studio.
 News items.
 12.45 p.m.—Close down.

AFTERNOON SESSION.

2.45 p.m.—Programme announcements.
 2.50 p.m.—From the Lyceum Hall, Pitt Street, Sydney.
 Pleasant Sunday Afternoon programme arranged by Station 2FC.

Laurence Macaulay, baritone:
 "Hail, who saith the Lord" (Handel's "Messiah").
 Air, "Who may abide the day of His Coming" (Handel's "Messiah").

2.55 p.m.—Daisy Richards, violinist:
 "Gavotte and Minuet" (Aulin).
 3.2 p.m.—Evel D'Arcy, soprano:
 "Life's Recompense" (del Regio).
 3.7 p.m.—Montgomery Stuart, alto-soprano:
 "The Newborn in Church" (Anon).
 3.15 p.m.—Suzanne Linn, contralto:
 "It is all for His Sake" (Handel).
 3.25 p.m.—Announcement.
 3.25 p.m.—Laurence Macaulay, baritone:
 "Hail, For Untold Darkness" (Handel's "Messiah").
 Air, "The People that walked in Darkness"
 3.22 p.m.—Daisy Richards, violinist:
 "Gypsy Scherzo" (Valkes).
 3.25 p.m.—Evel D'Arcy, soprano:
 "Down in the Future" (Loring Ronald).
 3.44 p.m.—Montgomery Stuart, alto-soprano:
 "Claverella" (Linton record).
 3.54 p.m.—Suzanne Linn, contralto:
 "Ondine ma' la" (Handel).
 4 p.m.—"Big Ben"
 Christmas Day Address.
 4.40 p.m.—Benediction. Close down.

EVENING SESSION.

6 p.m.—"Big Ben" and programme announcements.
 8.3 p.m.—A talk on the "Star of Bethlehem" by Mr. S. H. Bowden.
 8.20 p.m.—From the Presbyterian Congregational Church:
 A programme arranged by Mr. A. F. Gibbs, L.L.C.M., church organist:
 Song, "Naxareth" (Gounod).
 Herbert Hinton.
 8.25 a.m.—Organ, "In a Persian Market" (Hetzler).
 A. F. Gibbs, L.L.C.M.
 8.35 p.m.—Duet, "Good King Wenceslas"
 Miss Lillian Mackenzie and Herbert Hinton.
 8.45 p.m.—Organ, (a) "Cradle Song" (Schubert).
 (b) "Berencse" (Delbruck).
 8.46 p.m.—Meditation of Carols and hymns.
 8.50 p.m.—Carol, sung by Herbert Hinton.
 9 p.m.—Organ, (a) "Grand Offertoire in D" (Bastien).
 (b) "Fanfare Militaire" (Ascher).
 9.15 p.m.—Song, "The He's Child" (Easthope Martin).
 Miss Lillian Mackenzie.

9.16 p.m.—From the Presbyterian Congregational Church:
 Evening Service.
 Preacher, Rev. A. F. Dyer.
 9.30 p.m.—From the Studio:
 Lionel Lawson, violinist:
 "Ave Maria" (Schubert-Wilhelm).
 9.56 a.m.—Hazel His, baritone:
 "Who may abide" (Handel's "Messiah").
 9.40 p.m.—Captain Frank Hurley's continuation of his Adventure tale—will give a vivid description of Christmas in the Tropics, compared with the conditions of Christmas spent in the South Pole.
 9.49 p.m.—Rosalie Hill, baritone:
 (a) "Night" (Sophie Provanca).
 (b) "The Star of Bethlehem."
 9.47 p.m.—Lionel Lawson, violinist:
 "Lullaby" (A. Kreisler).
 9.53 p.m.—Rosalie Hill, baritone.
 9.54 p.m.—A programme of special Band Music.
 10.15 p.m.—National Anthem. Close down.

NOTE: From 4 a.m. till 5 a.m. tomorrow morning (Monday) 2FC is broadcasting a programme of Christmas music to be picked up and relayed by the British Broadcasting Corporation, London, on Christmas Sunday afternoon. Many interesting features will be included in the programme, and the microphone will be placed on the Manly Beach in the early morning to describe the conditions of a typical Australian day, compared with the Christmas spent by listeners in London.

2EL, SYDNEY

Sunday.

MORNING SESSION.

10.45 a.m.—"Six" news.
 11 a.m.—Service broadcast from Chalmers Presbyterian Church City.

NIGHT SESSION.

7 p.m.—Service broadcast from St. Jude's Church of England, Randwick.
 8.30 p.m.—Davidson Trio.
 8.45 p.m.—Miss Marjorie Skill, soprano.
 8.54 p.m.—Miss Marjorie Skill, S.S.I.
 9.1 p.m.—Weather report and forecast by courtesy of Mr. C. J. Moran, Govt. Meteorologist.
 9.2 p.m.—Mr. Donald Woodrow, baritone.
 9.3 p.m.—Miss Dulcie Dally, violinist.
 9.35 p.m.—Professor Manilla Woodhouse, tenor.
 9.42 p.m.—Davidson Trio.
 9.48 p.m.—Miss Marjorie Skill, S.S.I.
 9.49 p.m.—Mr. Donald Woodrow.
 9.47 p.m.—Mr. Bryce Carter.
 9.54 p.m.—Professor Harold Woodhouse.
 10.1 p.m.—Resume of following day's programme.
 10.5 p.m.—Broadcasters Trio:
 10.15 p.m.—G.P. Clock and chimes.
 National Anthem.

2GB, SYDNEY

Sunday.

10.15 a.m.—Music from St. Alban's Liberal Catholic church.
 10.20 a.m.—Morning Service from St. Alban's Church, Redfern.
 12 noon.—Close down.
 4.45 p.m.—Music from studio.
 7 p.m.—Lecture from Adyar Hall.
 8 p.m.—Violin duets Len Brewer, Phyllis Campbell.
 "Romance from Concerto to F. Minor" (Schubert).
 8.10 p.m.—Songs by Vis Hahob.
 8.15 p.m.—Violin duet Len Brewer.
 8.25 p.m.—Songs by Vis Hahob.
 8.30 p.m.—Violin duets Len Brewer, Phyllis Campbell.
 Ballet music from Beaumont.
 9.45 p.m.—Talk.
 9 a.m.—Close down.

2 UW, SYDNEY

Sunday

"Christmas Day"

Close down.

3LO, MELBOURNE

Sunday.

CHRISTMAS DAY

MORNING SESSION.

10 a.m.—AUBURN METHODIST CHURCH (Conductor J. Sutton Crow).
 "Christmas Carol."
 10.30 a.m.—Bells from ST. PAUL'S CATHEDRAL.
 10.45 a.m.—British official wireless news from Rugby. Express train information. News from yesterday's papers.
 "Cheerful at noon he wakes from short repose,
 Breathes the keen air, and carols us he goes."
 —Goldsmith.
 11 a.m.—MORNING SERVICE FROM THE INDEPENDENT CHURCH COLLINS STREET, MELBOURNE.
 Minister, Rev. J. Ernest James, B.D.
 Organist, Mr. Herbert Dyer.
 Hymn 52—"Christmas Awake"
 Plans of Invocation and Lect's Prayer (Chanted).
 Hymn 81—"Hark the Herald Angels Sing."
 Scripture Lesson. St. Luke's Gospel II. 1-20.

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Prayer.
Choir.—"Cradle Song" (A. Gilla).
Hymns.
Choir.—"Sing Christmas Bells" (Bridge).
Offerings.
Hymn 184: "The First Nowell."
SERMON: REV. J. ERNEST JAMES, B.D.
Hymn 53: "He came upon the midnight
hour."

Benediction.
12.10 p.m.—Close down.

AFTERNOON SESSION.

2 p.m.—COLLINGWOOD CITIZENS' BAND:
"Gloria in Excelsis."
"Peace, Peace, Peace."
2.10 p.m.—SISCA NAVARETTI, Dramatic
Soprano:

Jurusalem, St. Paul (Mendelssohn).
"Ave Maria" (Luzzi).

2.17 p.m.—COLLINGWOOD CITIZENS'
BAND:

Coronet Solo, "Aidie with Me."
2.23 p.m.—COLLINGWOOD CITIZENS'
BAND:

"Sunday Services."
2.30 p.m.—SISCA NAVARETTI, Dramatic
Soprano:

"Come Unto Me All Ye That Labor"
(Handel).

2.42 p.m.—AGNES FORTUNE, Piano:
"Santa—First Movement" (Bachowen).

2.50 p.m.—COLLINGWOOD CITIZENS'
BAND:

Selection, "Christmas Time."
3 p.m.—PLEASANT SUNDAY AFTERNOON
SERVICE FROM CENTRAL WESLEY
MISSION, LONSDALE STREET, MEL-
BOURNE.

Chairman: REV. DR. A. J. HOBAN.
Hymn No. 68: "Sing ye the King Who is
Coming to Reign."

Prayer: REV. J. H. CAIN.
Hymn No. 100: "Have You Had a Kindness
Shown?"

Solo, Miss Grace Jackson.
Collingwood Citizens' Band.
Solo, Miss Grace Jackson.
Notice.

Offering.

ADDRESS: REV. A. McCALLUM, D.D.:
"A Message of Christmas to the
World."

National Anthem.
Benediction.

4.26 p.m.—Close down.

EVENING SESSION.

7.30 p.m.—"BILLY BLIND" broadcasts
"Merry Christmas." Children: Many Happy
Returns of the Day, and Other Cheerful
Christmas Carols.

8 p.m.—THE PINK PIPERS.—Orphean
Philharmonic and the Nightingale will chant
sweetly this night from your distant music
groove:

Organ and Violin, "The Red Sarafan."
Hymn, "Hark, the Herald Angels Sing."
Solo, "The Holy Child."
Choir, "Good King Wenceslas."
Violin Solo, "Cradle Song."
Solo, "Bless, Holy Babe."
Choir, "Noel."
Hymn, "O Come, All Ye Faithful."

8.25 p.m.—"BROTHER BILL" has a special
Christmas Message to Young Australia:
The Men and Women of to-morrow, entitled:
"The Spirit of Christmas."

8.45 p.m.—Bells from St. Paul's Cathedral.

NIGHT SESSION.

7 p.m.—REVING SERVICE FROM ST.
PAUL'S CATHEDRAL.

Hymn (A. & M.), 68: "White Shepherd
Watch'd."

Recitation.
Exhortation.
General Confession.
The Absolution.
"The Lord's Prayer."

Versicles and Responses (Psalm).
Psalm 132.
1st Lesson: Isaiah 7, 10-14.
Magnificat.
2d Lesson.

Nine Domine I St. John, 6, 7.
The Agoutier's Creed.

Hymn 462, Angels, from the *vesperae* of
"Gery."

SERMON: THE ARCHBISHOP.

Hymn 68: "MATA! the herald angels sing."
Credo.

The Benediction.
FROM THE HIDDIO—

8.40 p.m.—COLLINGWOOD CITIZENS'
BAND:

Carol, "Adeste Fideles."
Coronet Solo, "Star of Bethlehem."

8.48 p.m.—MABEL COOK, Contralto:
"Sweet was the Song" (1819, 1822).
"Great is Jehovah" (Schubert).

8.47 p.m.—WILLIAM W. JAMES, Pianoforte
Soloist:

"Hungarian Dance" (Mendelssohn).
"To a Water Lily" (Schubert).

"Hungarian Dance" (Mendelssohn).
"Gavotte" (Chopin—Le mouvement).

(Lazarevsky).
At the Second Piano: Miss AGNES
FORTUNE.

9.1 p.m.—COLLINGWOOD CITIZENS'
BAND:

"Celebrated Largo."
9.14 p.m.—J. ALEXANDER BROWNE, bar-
itone:

Recit. from "The Messiah" (Handel).
"Thus saith the Lord."
Aria, "Who may abide" (Handel).

9.21 p.m.—COLLINGWOOD CITIZENS'
BAND:

Hymn, "It is Well."
9.28 p.m.—ROBEL HIBBELT, contralto:

"The L' smiling at Thee" (Oliver).
"Hear Thou the Lord, Oh my soul"
(Croft).

9.33 p.m.—STANLEY DAINES, Guitlet:
"Gardens Vale" (German).
"Gavotte" (German).

"Hungarian" (Handel).
9.41 p.m.—J. ALEXANDER BROWNE, bar-
itone:

"The Washman" (Square).
Recit. "I feel the Deity within" (Judea
Macchabae).

Aria, "Arm, Arm, ye brave" (Judea
Macchabae).

9.44 p.m.—COLLINGWOOD CITIZENS'
BAND:

"The Heavens are Telling."
9.47 p.m.—Announcements, Island shipping
movements.

10 p.m.—OUR GREAT THOUGHT:
"Be thou like the lily perched upon some
fragrant stem, although he feels the branch
break beneath him, yet boldly sings, know-
ing full well that he has wings."
—Mrs. de Gasparis.

GOD SAVE THE KING.

3AR, MELBOURNE

Sunday. MORNING SESSION

11 a.m.—Special Xmas Morning Festival.
Broadcast from Panatrophe House, 252
Collins street, by exclusive arrangement
with Willis and Patten Ltd.

6.30 a.m.—SPECIAL CHRISTMAS ADDRESS.
The Head Master of Wesley College, Mel-
bourne.

Mr. L. A. ADAMSON, C.M.G. M.A.,
will give a short address on Christmas.
"THE WORLD'S GREATEST EVENT."

12.10 p.m.—The Sheffield Choir:
"Hallelujah Chorus" from the Messiah
(Handel).

12.19 p.m.—The Christmas Choir (accom-
panied by His Majesty's Grenadier Guards
Band):

Carols and Christmas Greetings:
"The Christmas Wails."

12.27 p.m.—THE AUSTRALIAN COMMON-
WEALTH BAND:
"God Save the King."

12.30 p.m.—"A MERRY CHRISTMAS TO
ALL AUSTRALIANS."

AFTERNOON SESSION.

3 p.m.—Christmas Afternoon, Special
"Messiah" Programme will be broadcast by
leading vocalist assisted by the Schieleles
String Quartette, Personal Accompanist:
Miss Lina Anderson.

2.1 p.m.—Schieleles String Quartette.
"Overture from the Messiah" (Handel).

2.2 p.m.—Mr. Percy HUNDERT, tenor:
"This regular voice in low notes from the
Messiah":

"Comfort Ye, My People" (Handel).
"Every valley shall be exalted" (Handel).

2.14 p.m.—Mr. Henry LOUGHEE, cellist:
"Solo" (Handel).

2.19 p.m.—MR. ANDERSON, organ, harpist:
"Love songs from 'The Messiah':
"Love unto the Lord."
"I will sing Unto the Day of His
Mercy" (Schubert).

2.25 p.m.—Mr. Frank SCHIELELES, violin:
"Andante Cantabile" (Tchaikovsky).

2.31 p.m.—Sommerville String Quartette.
"Musical company" from the "Messiah"
(Handel).

2.35 p.m.—Miss Mabel COOK, Contralto:
"He shall feed his Flock like a shepherd"
from "The Messiah" (Handel).

2.42 p.m.—Miss Mabel COOK, soprano:
"Come Unto Him" from the "Messiah"
(Handel).

2.45 p.m.—Miss Gretchen SCHIELELES, violin:
"Ave Maria" (Schubert).

2.51 p.m.—Miss Mabel COOK, contralto:
"He Was Dropped" from the Messiah
(Handel).

2.57 p.m.—Mr. Percy HUNDERT, tenor:
"Benediction and aria" from the Messiah.

3 p.m.—Schieleles String Quartette:
"Empower's Hymn" (Haydn).

3.02 p.m.—Mr. soloist BURT, baritone:
"Why do the Nations" from the Messiah
(Handel).

3.08 p.m.—Schieleles String Quartette:
"Largo" (Handel) by request.

3.12 p.m.—Miss Pauline, soprano:
"I Knew my Redeemer Early" from the
Messiah (Handel).

3.25 p.m.—Schieleles String Quartette:
"Adeste Fideles" (Handel).

3.31 p.m.—Instrumental Quartette and Chorus:
"Hallelujah Chorus" from the Messiah
(Handel).

4.40 p.m.—Close the King.

CHILDREN'S SESSION.

8 p.m.—Special Children's Hour.

8.40 p.m.—Special Xmas Carol Service (con-
stituted from the Unitarian Church, Ger-
rard Street, Eastern Hill, Melbourne).

Minister: Rev. Wm. D. BOUTMER.
Organ: Gerald, with old Christmas stn. by
the Church Organist, Mr. E. T. FRENCH.

7 p.m.—Hymn, "It Came Upon the Midnight
Clear" (B. H. HARRIS).

Prayer, Rev. W. BOUTMER.
Carol, "Good Christian Men Rejoice."
Choir.

Hending, "The Vigil of the Magi" (St.
Matisse's) (Gounod).

Autism, "O Come All Ye Faithful" (Choir).
Carol, "The First Nowell" (Choir and Con-
gregation).

Carol, "Good King Wenceslas" (Choir).
Address, "A Modernist Christmas Mes-
sage" Rev. W. BOUTMER.

Organ Solo, "The Pastoral Symphony"
(Handel). Mr. E. T. FRENCH.

Choir, "Make a Joyful Noise" (Simplex).
Choir.

Organ Solo, "March of the Magi" (Dubois).
Mr. E. T. FRENCH.

Carol, "Silent Night" (Choir).
Hymn, "Think We Now the Lord of
Heaven" (Hawkins).

Organ Solo, "Hallelujah Chorus" Mr. E. T.
FRENCH.

BENEDICTION.

EVENING CONCERT SESSION.

8.30 p.m.—Heatswick Panatrophe Entertain-
ment, broadcast from Panatrophe House, 252
Collins Street, Melbourne (by exclusive per-
mission of Willis and Patten Ltd.), under the
direction of the Panatrophe programme
Committee.

8.55 p.m.—The "Age" news bulletin, exclusive
to 3AR.

9.55 p.m.—Tomorrow's Entertainment.
10 p.m.—Miss Helen WEBER, force.

10.1 p.m.—Our Australian Good-night is from
the poem.

"The Circling Heron" by Rodric QUINN.
10.2 p.m.—"The Merry Xmas to all listeners in
to 3AR Melbourne."

God Save the King.



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4QG, BRISBANE.

Sunday.

MORNING SESSION.

ST. STEPHEN'S ROMAN CATHOLIC CATHEDRAL.

The complete morning service will be relayed from St. Stephen's Roman Catholic Cathedral.

11 a.m.—FROM ST. STEPHEN'S CATHEDRAL: Morning Service.
12.30 p.m.—Close down.

AFTERNOON SESSION.

CITYBENS' BARD.

8.15 p.m.—FROM THE BOTANIC GARDENS: Band Concert.
8.54 p.m.—Close down.

NIGHT SESSION.

ST. JOHN'S ANGLICAN CATHEDRAL.

The complete evening service will be relayed from St. John's Anglican Cathedral.

7 p.m.—FROM ST. JOHN'S CATHEDRAL: Children's Service.
7.55 p.m.—Evening Service.

BAND CONCERT.

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

6WF, PERTH.

Sunday.

MORNING SESSION.

10.45 a.m.—Tune in.
11 a.m.—Christmas Day Church service relayed from Wesley Church, Hay street, Perth.
12.15 p.m.—Close down.

AFTERNOON SESSION.

1.30 p.m.—Special Christmas Day Session.
4.30 p.m.—Close down.

NIGHT SESSION.

7 p.m.—Tune in.
The Evening transmission is broadcast on 104.5 metres as well as the usual wavelength.
7.5 p.m.—Children's bedtime stories by Mr. Robert Edmondson.

7.50 p.m.—Christmas Day Church service relayed from St. George's Cathedral, Perth.

8.45 p.m.—A Holiday: Christmas Concert by the Perth City Band (conducted by Mr. A. M. Pries) and vocal soloists.

10.5 p.m.—Close down.

194.5 METRE TRANSMISSION.

Simultaneous broadcast on 194.5 metres. Programme given on 1250 metres, commencing at 7 p.m.

7ZL, HOBART

Sunday.

MORNING SESSION.

11 a.m.—Church Service from Memorial Congregational Church, Hobart; President Rev. Arthur C. Nelson.
Close down.

AFTERNOON SESSION.

8.30 p.m.—G.P.O. Clock chimes.
8.31 p.m.—Pleasant Sunday afternoon concert from the studio.
8.50 p.m.—Close down.

EARLY EVENING SESSION.

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

NIGHT SESSION.

7 p.m.—Church service from St. David's Cathedral, Hobart; President, the Bishop, Fellows 123, 154.

At the conclusion of Church Service broadcast from St. David's Park or studio concert.

6.40 p.m.—"Mercury" special interstate news service. British Official Wireless news. Begins within wireless range. Station announcements—Tomorrow's programme. National Anthem.

Monday, Dec. 26
2FC, SYDNEY.

EARLY MORNING SESSION.

HOLIDAY PROGRAMME.

4 a.m.—BROADCAST TO LONDON on the usual wave length of 441 metres and 28.2 metres.

In conjunction with Amalgamated Wireless (Australia) Limited, 2FC will transmit the following programme to be picked up and relayed by the British Broadcasting Corporation, London, on Christmas Sunday afternoon between 8 p.m. and 2 a.m. Carols by the Choir of St. Andrew's Cathedral.

Patronal greetings and good wishes exchanged by prominent people of Australia. The 2FC Studio Orchestra, conducted by Mr. Horace Keast, in music typical of the occasion.

From the "Merry Beach": A description of the early morning surfers and an idea of what the scene is like on one of Australia's most famous beaches—so direct contrast to the old-fashioned Christmas spent in London.

6 a.m.—Close down.
11 a.m.—"Big Ben" Programme announcements.

11.5 a.m.—News Items, weather intelligence, sporting information. Interspersed with musical items from the Studio, until 11.30 a.m.

11.35 a.m.—From the Sydney Cricket Ground: A description of the match. New South Wales versus Tasmania, with progress scores until the luncheon adjournment at 1.15 p.m. Intervals will be filled with music from the Studio.

NOTE: Events of the A.F.C. Meeting at Randwick will be given and described by the 2FC Racing Commissioner throughout the day.

1 p.m.—"Big Ben" Weather information. "Evening News" holiday news service.

2 p.m.—From the Sydney Cricket Ground: Further descriptions and progress scores of the Cricket match, New South Wales versus Tasmania.

From the Studio: During Cricket and Racing intervals the following musical items will be heard:

Lined Link, English lullabye.
Katherine Hershey, soprano:
(a) "I Love Thee" (Grieg).
(b) "Love makes the Sunshine" (Meale).
Dorothy Hencke, contralto:
(c) "In quiete Tunc Obsecra" (Beethoven).
(d) "Killarney" (Balfe).

Notes Gillespie, soprano:
(a) "Oude John" (Weatherly).
(b) "The greatest source that flows" (Hayley).
Jack Wright, novelty pianist.

Progress Cricket scores until 5.40 p.m.

EARLY EVENING SESSION.

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

5.50 p.m.—"Big Ben" Stanzas drawn scores of the Cricket match, N.S.W. versus Tasmania.

6.0 p.m.—Continuation of Children's Hour, by the "Hello Man".

6.15 p.m.—Happy time for the young folk.
6.30 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keast:

(a) "Two light spruced pieces" (Grieg).
(b) "Impressions of Italy" (Chapinoff).
(c) "Topsy Mia" (Boccherini).

7 p.m.—"Big Ben." Complete sporting news of the day's events.
7.15 p.m.—Weather intelligence.
7.30 p.m.—Late "Evening News" news service.
7.40 p.m.—Studio music.

NIGHT SESSION.

7.45 p.m.—Programme announcements.
7.45 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keast:

"The Song" (Frobenius).
8 p.m.—"Big Ben".
Norman McLennan, baritone.

8.4 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keast:
(a) "Serenade" (Richard Strauss).
(b) "Furioso in G Minor" (Rachmaninoff).

8.44 p.m.—"Gee Dree" stanzas, told by Miss Gwynne Stuart.
8.53 p.m.—Norman McLennan, baritone.
8.58 p.m.—Gavin Fay, pianoforte solo.
8.58 p.m.—Daisy Mangan, soprano:
"Careless" (Hart).

9.0 p.m.—The 2FC Studio Orchestra, also conducted by Mr. Horace Keast:
(a) "Lullaby" (Kvech).
(b) "The Song" (Frobenius).
9.07 p.m.—Charles Lawrence, celloist/organist.
9.08 p.m.—Daisy Mangan, soprano:
"Gathering In" (Homerell).

9.08 p.m.—Daisy Mangan, soprano:
9.11 p.m.—Norman McLennan, baritone.
9.14 p.m.—Gavin Fay, pianoforte solo.
9.15 p.m.—Wally Baynes, comedian.
9.16 p.m.—Daisy Mangan, soprano:
"Little" (Hart) and "Little" (Homerell).
9.23 p.m.—Norman McLennan, baritone.
9.25 p.m.—The 2FC Studio Dances Band of 11 Dancers, conducted by Mr. Gee Morrison.
9.42 p.m.—Charles Lawrence, celloist/organist.
10 p.m.—"Big Ben".
10.05 p.m.—Daisy Mangan, soprano:
"Tune of Werner Wald" (Strauss).
10.1 p.m.—The 2FC Studio Dance Band, conducted by Mr. Gee Morrison.
10.15 p.m.—Montgomery Stuart:
Humorous sketch.
10.25 p.m.—2FC Studio Dance Dancers:
Popular numbers.
10.30 p.m.—Late weather forecast.
10.32 p.m.—Wally Baynes, comedian.
10.42 p.m.—The 2FC Studio Dance Band.
10.57 p.m.—Late news and announcements.
11 p.m.—"Big Ben".
11.15 p.m.—The 2FC Studio Dance Band until midnight.
11.30 p.m.—National Anthem.
Close down.

2BL, SYDNEY

Monday.

MORNING SESSION.

11.30 a.m.—G.P.O. Clock and chimes.
Musical programme from studio.

11.40 p.m.—News from title "Daily Telegraph".
11.45 p.m.—Musical programme from the Studio.

11.50 a.m.—Musical programme from the Studio.
12 Noon.—G.P.O. Clock and chimes.
Special Order forecast and weather report.
12.5 p.m.—Musical programme from the Studio.

12.50 p.m.—News from the "Sun".
12.55 p.m.—Sporting and athletic fixtures.
12.57 p.m.—What on at the Picture and Theatre.

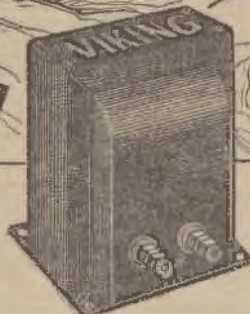
1.00 p.m.—Musical programme from the studio.
1.10 p.m.—News from the "Sun".
1.15 p.m.—Musical programme from studio.
1.16 p.m.—Sporting talk and athletic fixtures for the children to children and special entertainment for children in hospital.
1.20 p.m.—G.P.O. Clock and chimes.
1.25 p.m.—Musical programme from the studio.
1.30 p.m.—News from the "Sun".



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10/6

2.40 p.m.—Musical programme from studio.
 2.45 p.m.—News from the "Sun."
 3 p.m.—G.P.O. Clock and chimes.
Racing Resumé.
 During the afternoon race results from A.J.C. at Randwick by courtesy of the "Sun."
 3.15 p.m.—Musical programme from the studio.
 3.20 p.m.—News from the "Sun."
 3.25 p.m.—Musical programme from studio.
 3.40 p.m.—Dunbarrow Prince Band, broadcast from Dunbarrow Colaba.
 4 p.m.—G.P.O. Clock and chimes. Racing Resumé.
 4.5 p.m.—Musical programme from the studio.
 4.50 p.m.—News from the "Sun."
 4.55 p.m.—Dunbarrow Prince Band.
 5 p.m.—Resumé of night's programme.
 5.30 p.m.—Racing Resumé.
 6 p.m.—G.P.O. Clock and chimes. Close down.

EARLY EVENING SESSION.

5.45 p.m.—G.P.O. Clock and chimes.
 Duo Jack and Uncle Sam will entertain the kiddies.
 5.50 p.m.—Musical programme from the studio.
 6.15 p.m.—The Newtown Band broadcast from Industrial Hall, Newtown.
 6.30 p.m.—Talk of News.
 6.35 p.m.—Miss Hilda Walker, soprano.
 6.42 p.m.—Mr. Warwick McKenzie, violin solo.
 6.49 p.m.—The Newtown Band.
 6.50 p.m.—G.P.O. Clock and chimes.
 From the Stadium: A description by Mr. Walter E. Withers of the Boxing Contest.
 7.10 p.m.—Sid and Molly Owen and Jack Nethercote, novelty entertainers.
 7.15 p.m.—Mr. Leslie Harford.
 7.20 p.m.—Mr. Warwick McKenzie.
 7.25 p.m.—Resumé of following day's programme.
 Weather report and forecast by courtesy of Mr. H. J. Murray, Dept. Meteorology.
 7.35 p.m.—Romantic's Dance Orchestra under the direction of Mr. Merv. Lyons broadcast from Romany's.
 7.50 p.m.—G.P.O. Clock and chimes.
 National Anthem.

2 UW, SYDNEY

Monday.

"Boxing Day"
 Close Down.

3LO, MELBOURNE.

Monday

MORNING SESSION.

7.15 a.m.—Herald Morning Session.
 7.35 a.m.—Close Down.

MIDDAY SESSION.

11.30 a.m.—Description of Interstate Cricket CRICKET MATCH, Victoria v. New South Wales, at M.C.G., by Mr. Rod McGregor.
 11.44 a.m.—Close Down.

FROM THE STUDIO.

12.9 p.m.—Melbourne Observatory Time Signal.
 12.1 p.m.—British Official Wireless News from Rugby: Report and the Australian Press Association Cables: "Archie" News Service.
 12.31 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS:
 "Society Boy" (Stamper).
 "Love's Love" (Aber).
 "Go, Joe, Go" (Kotzner).
 12.39 p.m.—VAUDE AND VERNE:
 Verbose and Varied.

12.35 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS:
 "Boney" (Swift).
 "Lonely Across in the West" (Robinson).
 "My Sunny Girl" (Huby).
 12.48 p.m.—ERN TROTSMAN, Entertainer:
 "Coccolina Musical."
 12.52 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS:
 "Cherise" (Babo).
 "I Walked Back from the Buggy Ride"
 "My Tumbledown Cottage of Dreams" (Leslie).
 1.4 p.m.—Meteorological Information:
 Weather Forecast and Palatral for Victoria, Tasmania, South Australia and New South Wales: Ocean Forecasts, River Reports.

Are you going away for the holidays? What arrangements are you making for the comfort of your domestic animals meanwhile? Don't leave them to suffer hunger and thirst in your absence.

1.11 p.m.—JESSIE IRWIN, Soprano:
 "Piper" (Robson).
 "The Waking of Spring" (Del Negro).
 1.18 p.m.—Description of Interstate Cricket (Victoria v. N.S.W.), at M.C.G., by Mr. Rod McGregor.
 1.30 p.m.—Description of Choochoo Turf, 1 mile, 65 yards, CAULFIELD, by "Newbury."
 1.35 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS:
 "The Beehive Bee from Sunny Italy" (Leslie).
 "Lo Down" (Roco).
 "Oh What a Pal was Whozza" (Kahai).
 1.45 p.m.—JESSIE IRWIN, Soprano:
 "Lendary" (Crangston).
 "La Serenata" (Rood).
 1.51 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS:
 "Sweet O'Mine" (O'Gagan).
 "The Wind Blew Through His Whiskers Just the Same" (Conrad).
 "The Birth of the Blues" (Herscovici).
 2 p.m.—Close Down.
 2.10 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 2.18 p.m.—Description of Juvenile Handicap, 6 furlongs, CAULFIELD, by "Newbury."
 2.28 p.m.—Close Down.
 Results of Kerang and Trenkard Races will be given as they come to hand.
 Program results will be given of the Nacchable Rowing Club Regatta.

AFTERNOON SESSION.

3.10 p.m.—Melbourne Observatory Time Signal.
 3.1 p.m.—Announcements.
 3.5 p.m.—Description of Melburn Handicap, 1 mile, CAULFIELD, by "Newbury," of "The Argus."
 3.10 p.m.—STUDIO QUARTETTE:
 "Ole Ole Sule" (Coleridge Taylor).
 3.25 p.m.—EILEEN VAUGHAN, Soprano:
 "Jeanne D'Arc" (Tschukowsky).
 "La Cloche" (Saint Saens).
 3.32 p.m.—REGINALD BRADLEY, Violin:
 "Andantino and Allegro" (Coleridge Taylor).
 3.40 p.m.—Description of Xmas Handicap, 6 furlongs, CAULFIELD, by "Newbury," of "The Argus."
 3.50 p.m.—STUDIO QUARTETTE:
 "Petite Suite de Concert" (Coleridge Taylor).
 3.53 p.m.—VAUDE AND VERNE, Entertainers:
 Harlequin Humor.
 4.0 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 4.11 p.m.—EILEEN CASTLES, Soprano:
 "Deep Blue" (Negro Spiritual) (Burlleigh).
 "Ma Little Banjo."
 4.20 p.m.—Description of Hopetown Handicap, 1 mile, 65 yards, CAULFIELD, by "Newbury," of "The Argus."
 4.25 p.m.—CAPTAIN DONALD McLEAN:
 "Under the Black Flag."
 4.32 p.m.—Herald News Service.

4.41 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 4.55 p.m.—Description of Koorang Welter, 1 mile, CAULFIELD, by "Newbury," of "The Argus."
 5.0 p.m.—Close Down.
 5.20 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 During the afternoon a description of the A.J.C. SUMMER CUP, a mile & a furlong, will be broadcast from Randwick Racecourse, Sydney—repeated from 2FC, Sydney.

EVENING SESSION.

5.30 p.m.—Acceptances for Wednesday's Races at Ascotville.
 5.35 p.m.—Answers to Letters and Birthday Greetings by "LITTLE MISS KOOKABURRA."
 5.40 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at Melbourne Cricket Ground, by Mr. Rod McGregor.
 5.45 p.m.—More Birthday Greetings of "LITTLE MISS KOOKABURRA."
 5.7 p.m.—CAPTAIN DONALD McLEAN:
 "Gentlemen of Fortune."
 6.25 p.m.—STUDIO QUARTETTE:
 "Fairies' Flirtation" (Lowy).
 6.30 p.m.—"LITTLE MISS KOOKABURRA":
 "The Pinky Patrol."
 6.40 p.m.—Herald News Service: Announcements.
 6.40 p.m.—TARMA TIERNAN, Cello:
 "Aria" (Louri).
 6.57 p.m.—JESSIE IRWIN, Soprano:
 "The Robin's Song" (White).
 "The Guckoo" (Lehman).
 7.4 p.m.—THE STUDIO QUARTETTE:
 "A Christmas Carol."
 7.10 p.m.—JESSIE IRWIN, Soprano:
 "The Call of the Maytime" (Gagan).
 "A Dream Song of Spring" (Mona McBurney).
 7.15 p.m.—Under the auspices of the Boy Scouts Association, COMMISSIONER DR. C. GORDON READMAN will give:
 "A Xmas Message to Scouts."
 7.20 p.m.—MR. E. B. TAYLOR will speak to Young Australians on:
 "School Life and School Sport."
 7.25 p.m.—MR. CHARLES NUTTALL:
 "Pipe Dreams."

NIGHT SESSION.

8.0 p.m.—"THE STUDENT PRINCE," Act 1, Transmitted from His Majesty's Theatre by permission of J. C. Williamson, Ltd. Music by Sigmund Romberg. Lyrics and book by Dorothy Donnelly, with the Royal Comic Opera Company.
CAST OF CHARACTERS:
 (In order of appearance):
 First Lacker J. HANNON
 Second Lacker J. DAVIS
 Third Lacker H. V. HAINES
 Fourth Lacker J. DOWNE
 Von Mark NOEL DAINTON
 Prince Earl RUDOLPH HALL
 Prince Earl JAMES LIDDY
 Ruler CONRAD CHARLTON
 Gratchen VERA SPAULL
 Toni JOHN FORDE
 Nicholas H. GARY
 Desfel RUSSELL SCOTT
 Lucas DAVID GRAHAM
 Asterberg GEORGE CONYNGRAM
 Kathie BEBE DE VRIES
 Luc ARTHUR STONE
 Hubert MASON WOOD
 Grand Duchess Anastasia.
 MILIE ENGLER
 Captain Marquet ABLE CRANE
 Captain Turpin FRANK WRBSTER
 Countess Deyven EIC DESMOND
 Baron Arnecht NOEL SMITH
 Freshman K. LAWSON
 Countess J. BOWEN
 Captain of the Guard REG DESMOND
SYNOPSIS OF SCENES.
ACT I.
 Prologue An Antroom at the King's Palace, Karlsruhe.
 Scene 1—Garden of the Inn of the "Three Golden Apples," Heidelberg (next day).

SYNOPSIS OF MUSIC NUMBERS.

Prologue:

- Quartets, LAURAYS.
"Golden Days"..... ENGEL AND PRINCE
Scene 1.
"Garlanda, Brigh, with Glowing Flowers."
GLEICHEN, RUDELL and GIRLS
Act 1—Scene 2.
"To the Lin Weite Marching!"
DELFY, ASTERBERG, LUCAS,
STUDENTS and CHORUS
"Drinking Song."
DELFY, ASTERBERG, LUCAS,
STUDENTS and CHORUS
"I'm Coming at Your Call."
KATHIE and STUDENTS
"You're in Heidelberg."
KATHIE, ENGEL, PRINCE and RUDER
"Goldsands Igitur"..... STUDENTS
"Golden Days"..... ENGEL
"Deep In My Heart"
KATHIE and PRINCE
"Serenade."
PRINCE, LUCAS, DELFAY, VON
ASTERBERG and STUDENTS
"Caucasian Igitur"..... STUDENTS
"Hall, Youth and Love."
KATHIE, PRINCE and ENSEMBLE
"Come, Boys, Let's All Be Cas."
STUDENTS
"Deep In My Heart"..... FINALE
FROM THE STUDIO.
9.0 p.m.—Amenity menu.
ONE THING AFTER ANOTHER
9.4 p.m.—COLLINGWOOD CITIZENS'
BAND:
March, "Aragadah."
Overture, "Rouge et Noir."
9.14 p.m.—Description of To-solich's Stadium
Event, by Mr. Norman McCance.
9.23 p.m.—FROM THE STUDIO:
EILEEN CASTLES, Soprano:
"Schubert's Song" (Grieg).
"Will o' the Wisp" (Spont).
9.35 p.m.—COLLINGWOOD CITIZENS'
BAND:
Selection, "Pirates of Penzance."
9.45 p.m.—JOHN D. FRASER, Baritone:
"Yellow Slippers" (Countryside Clarke).
"Myriad of Diamonds" (Countryside Clarke).
9.52 p.m.—GEO. FINDLAY, Piano:
"Grillen" (Schumann).
"Warum" (Schumann).
"Ende Vom Land" (Schumann).
"Romance" (Doblinger).
"Valse Capricieuse" (Frank Bridge).
"Dance Nocturne" (Cyrl Scott).
10.7 p.m.—"Arenas" News Service: Meteorological
information; British Official Wire-
less News from Rugby; Island Steamer
Movements.
10.14 p.m.—COLLINGWOOD CITIZENS'
BAND:
Fugal Solo, "Schubert's Serenade"
Soloist, J. Bramwell.
10.21 p.m.—EILEEN CASTLES, Soprano:
"Still as the Night" (Hahn).
"Si vous Vezz avient des ailes" (Hahn).
10.24 p.m.—THELMA READY, Barjo:
"Love's Dream."
"Silver Threads Among the Gold."
10.32 p.m.—JOHN D. FRASER, Baritone:
"Beauties' Eyes" (Tosti).
"Trees" (Rahbach).
10.43 p.m.—COLLINGWOOD BAND:
Selected.
10.51 p.m.—ERN TROTMAN, Entertainer:
"The Vocalists' Guide" (Original).
"Fate of a Popular Tune" (Original).
At the conclusion of To-solich's Stadium
Event a resume will be given by Mr. Nor-
man McCance.
11.0 p.m.—OUR GREAT THOUGHT:
"Our opportunities in do good are our
talents."—Dr. Mather.
11.1 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
11.40 p.m.—GOD SAVE THE KING.

3AR, MELBOURNE

Monday.

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

MIDDAY CONCERT SESSION.

12.1 p.m.—Transmitted from Panatrophe House,
252 Collins Street by exclusive permission.

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P.M.2 (Power)	0.15 amp. 12/6

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P.M.3 (General Purpose)	0.1 amp. 12/6
P.M.3 A. (Resist Cap.)	0.1 amp. 12/6
P.M.4 (Power)	0.1 amp. 12/6

For 6-volt accumulator or 4 dry cells.

P.M.5 (General Purpose)	0.1 amp. 12/6
P.M.5 B. (Resist Cap.)	0.1 amp. 12/6
P.M.5 (Power)	0.1 amp. 12/6

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P.M.256	(6 volts) 0.25 amp. 12/6

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Australia.

of Wills and Paton Ltd.) on the Brunswick Parade.

1 p.m.—Close down.

MATINEE SESSION.

ORCHESTRAL CONCERT.

Sports Results. During the afternoon results of the races at Sydney and Caulfield will be given and other information as it comes to hand. Sheffield Shield Cricket series will be given at frequent intervals during the afternoon.

2.30 p.m.—Caulfield Races. Result of Stobbs Hurdle, 2 miles 50 yards.

2.35 p.m.—Studio Orchestra.

2.40 p.m.—"The Maid of the Mountains" (Fraser-Simons).

"Resignation" (Hems).

2.55 p.m.—Caulfield Races. Results of Juvenile Handicap, 5 furlongs.

3.00 p.m.—Miss Alice Mallon, soprano:

"When You're in Kind"

"Morning" (Cobak).

3.10 p.m.—Studio Orchestra.

3.15 p.m.—Caulfield Races. Result of Matern Handicap, 1 furlong.

3.18 p.m.—Miss Ethel Stearns, pianist:

"A Chopin Bracket"

3.25 p.m.—Studio Orchestra.

3.30 p.m.—Miss Alice Mallon, soprano:

"Les Quatre ans de Bonette" (Old French).

"Who is Sylvia?" (Gibbault).

3.40 p.m.—Studio Orchestra.

3.45 p.m.—Caulfield Races. Result of Ghern Steeple, 2 miles.

3.50 p.m.—Mr. Herbert Pettifer, violin:

"Allegretto and Scherzo" (Bispi).

4 p.m.—G.P.O. Clock says "Four."

4.1 p.m.—2nd Weather forecast.

4.2 p.m.—Amusements.

4.4 p.m.—Studio orchestra.

4.18 p.m.—Mr. Keith Davis, bass baritone:

"Thoughts have wings" (Lehmann).

"Men of Harlech" (Fiddie Ait).

4.24 p.m.—Caulfield Races. Results of Hope-toun Handicap, 1 mile, 4 furlongs.

4.30 p.m.—Studio Orchestra.

4.35 p.m.—Mr. Keith Davis, bass baritone:

"Invocations" (Nicolai).

"King Charles" (White).

4.40 p.m.—Studio Orchestra.

4.50 p.m.—To-night's entertainment.

4.55 p.m.—Special racing reports acceptance and barrier positions for Appendix Races by "Daybreak."

4.59 p.m.—Caulfield Races. Result of Kooragang Welter, 1 mile.

5 p.m.—G.P.O. Clock says "Five."

Close down.

CHILDREN'S SESSION.

8.30 p.m.—The Paramount Five.

EVENING SESSION.

Australian Bowlers' Carnival Night.

7.30 p.m.—Amateur Sports—Special sporting talk, arranged by Mr. B. R. Weir, Hon. Sec. of the V.A.A.A.

7.45 p.m.—Mr. Horace Zoo, Honk, Secretary of the National Safety Campaign will continue his interesting series of popular address.

8 p.m.—G.P.O. Clock says "Eight."

8.1 p.m.—Australian Bowlers' Carnival rally at the new lawn ball Melbourne. In connection with the Australian Bowling Carnival, on Monday evening, 26th December at 8 p.m., the Victorian Bowling Association will be welcoming interested and welcoming visiting players at the "Bowlers' Rally" to be held at the Town Hall, Melbourne. Sir William Branton, President, Victorian Bowling Association and J. B. Gird, President Australian Bowling Council will do the honours and a first class musical programme will be provided by the following artists: Miss Mary Mack, the well-known Melbourne contralto.

Miss Thelma Noll, the popular Melbourne soprano.

The "W's Four" Quartette Party, consisting of Messrs. Hooks, Watford Skilling and Birchleigh will render concerned members and

Mr. Ernest Trueman will give humorous items.

Mr. Eric Fox will act as accompanist. The items will be daily announced to Listeners in the order in which they are appointed to appear on the programme.

10.30 p.m.—Studio entertainment.

10.35 p.m.—To-night's Entertainment.

10.40 p.m.—The "Age" News Bulletin, exclusive to 3 A.B.

10.45 p.m.—Final Weather forecast.

10.50 p.m.—Our Australian Good-night songs to front the poem, "The Vagabond" by Henry Lawson.

11 p.m.—G.L.O. Clock says "Eleven."

God Save the King.

4QG, BRISBANE

Monday.

NO MIDDAY TRANSMISSION.

AFTERNOON SESSION.

2.30 p.m.—Afternoon Tea Music.

4.15 p.m.—News service supplied by "The Telegraph."

4.30 p.m.—Close down.

EARLY EVENING SESSION.

6 p.m.—News service supplied by "The Daily Standard."

6.15 p.m.—Lectures: nil.

6.30 p.m.—The Children's Session:

Singers by "The Scamlers."

6.45 p.m.—Market reports; stock reports.

7.30 p.m.—Weather news: "Daily Standard" news.

7.45 p.m.—Standard time signal.

7.45 p.m.—Lectures: NIL.

NIGHT SESSION.

PART I.

A programme by the Richmond Party:

4 vocalists solo: "Tax der Pleasen" (Delibes).

Mr. Jack Ellis.

Barytone solo: "The Last Hour" (Krauss).

Mr. Max Aronstein.

Soprano solo: "Winnifred" (Del Arca).

Miss Dorcas Morgan.

Vocal solo: "Serenity" (Ordo).

Mr. Max Aronstein.

Mezzo-Soprano solo: "Ballad Songs" (Eustache Martin).

Mrs. W. F. Hamilton.

Vocal Duet:

"In the Garden of My Heart" (E. R. Ball).

Mr. Hamilton and Mr. Max Aronstein.

Baritone solo: "O Cool is the Valley Now" (Kowenshick).

Mr. Max Aronstein.

Pianoforte solo:

"Etude de Concert" (MacDowell).

Mr. Jack Ellis.

Soprano solo:

(a) "The Robin's Song" (Edward White).

(b) "Cuckoo" (Merrill Shaw).

Miss Dorcas Morgan.

Old English Folk-Song: "Simple Simon" (arr. by Baring Gould and Cecil Sharp).

Miss Dorcas Morgan, Mrs. W. F. Hamilton and Mr. Max Aronstein.

Mezzo-Soprano solo:

"Thoughts Have Wings" (Liza Lehmann).

Mr. W. F. Hamilton.

Vocal solo: "Heure Kati" (Hubny).

Mr. Max Aronstein.

Soprano solo:

"Aubade from La Roi Dye" (Lalo).

Miss Dorcas Morgan.

Vocal Duet:

"Come in the Fair" (Eustache Martin).

Mrs. W. F. Hamilton and Mr. Max Aronstein.

Pianoforte solo:

"Loving Water" (Byron-Beer).

Mr. Jack Ellis.

PART II.

RADIO INTERLUDE—"AROUND THE WORLD '27 GO."

(Written and Produced by Miss Thelma Chapman.)

The second portion of the programme will comprise a radio interlude written by Miss Thelma Chapman.

In the adventures of a party of artists who set off on a tour are depicted. The cast will comprise members of the 4QG staff and artists.

6 p.m.—Radio Interlude: "Around the World We Go."

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

6WF, PERTH.

Monday.

12.30 p.m.—Tea in.

12.35 p.m.—Markon, News and Cable.

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

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

1.3 p.m.—Musical programme from the studio, including vocal and instrumental artists!

1.40 p.m.—At Auset. Detailed description of the following racing events relayed from Auset Racecourse, Belmont.

2 p.m.—Prize Handicap.

2.40 p.m.—W. A. Breeders' Plate.

3.20 p.m.—Other Handicap.

3.40 p.m.—Fryze the Studio.

Musical programme from the Studio, including vocal and instrumental artists!

4 p.m.—Railway Stakes.

4.40 p.m.—Suez Handicap.

5.30 p.m.—Welter Handicap.

5.50 p.m.—Close down.

EVENING SESSION.

6.45 p.m.—Tea in.

The evening transmission is broadcast on 104.5 metres of programme given on 420 metres, commencing at 6.45 p.m.

6.50 p.m.—Series for the Kiddies by Ginea Henry and Duffy.

7.30 p.m.—Market, News and Cable.

7.45 p.m.—Talk by Lionel Gull to the Director of the Zoological Gardens, South Perth.

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

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

Station announcements such as alterations to programmes, etc.

BAND NIGHT.

8.5 p.m.—Concert by the R.S.L. Band, conducted by Mr. W. A. Halesworth, relayed from the Institute.

10 p.m.—Daily News items by "The Daily News" Newspaper Co.

Shows within range announcement.

Weather reports and forecast.

10.30 p.m.—Close down.

104.5 METRE TRANSMISSION.

Simultaneous broadcast on 104.5 metres of Programme given on 1250 metres commencing at 6.45 p.m.

7ZL, HOBART

Monday.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

5 p.m.—G.P.O. Clock chimes the hour.

3.1 p.m.—Fryze in selection.

3.5 p.m.—Weather information.

Items of interest—announcements.

2.15 p.m.—Musical items from the studio and progress racing and sporting events.

4.35 p.m.—Close down.

EARLY EVENING SESSION.

6.50 p.m.—Children's Corner with "Ugla Hooter."

5 p.m.—"Uncle Peter's" half hour.

NIGHT SESSION.

7.30 p.m.—Musical selection.

7.55 p.m.—Physical Culture talk by Lieutenant Reginald MacKinnon.

7.50 p.m.—"Mercury" special Tasmanian news service. Rarely arrives produce sales.

Weather information.

Hobart Stock Exchange quotations.

8 p.m.—G.P.O. Clock chimes the hour.

8.1 p.m.—Vocal and instrumental numbers from Findlers Music Showroom, Elizabeth Street, Hobart.

10 p.m.—British Official wireless news.
 11 p.m.—"Mercury" special Interstate news service.
 11.30 p.m.—Special District Weather reports.
 12 a.m.—Weather report.
 12.15 a.m.—Special announcement—To-morrow's programme.
 National Anthem.

Tuesday, Dec. 27 2FC, SYDNEY.

HOLIDAY PROGRAMME.

MIDDAY SESSION.

11.30 a.m.—"Big Ben" and programme announcements.
 11.35 a.m.—News items, weather intelligence, sporting information, interspersed with musical items from the Studio until 11.50 a.m.
 11.55 a.m.—From the Sydney Cricket Ground: Continuation of the District match, New South Wales versus Tasmania. Descriptions and progress scores will be given until the match adjournment at 1.15 p.m.
 1 p.m.—"Evening News" midday news service. Walker information.
 NOTE: Throughout the day the events of the Macfield Racing Club's Meeting will be described by the 2FC Racing Commissioner.
 1.15 p.m.—by Dunstone, mezzo.
 1.20 p.m.—"Big Ben."

From the Sydney Cricket Ground:
 Further Cricket scores and descriptions.
 NOTE: Cricket and Racing intervals will be filled with the following items from the Studio:

Thomas Lancdowne, mezzo:
 (a) "Ye banks and braes o' bonnie Doon" (Barbara).
 (b) "Only the river running by" (Soprano).

Edna Nelson, mezzo:
 (a) "Nightfall at sea" (Montague Phillips).
 (b) "Dolorosa" (Montague Phillips).
 Acte Luciano, soprano.

1.45 p.m.—Complete recitals of the day's sporting events.
 1.50 p.m.—"Big Ben." Celicist scores.
 Cue given.

EARLY EVENING SESSION.

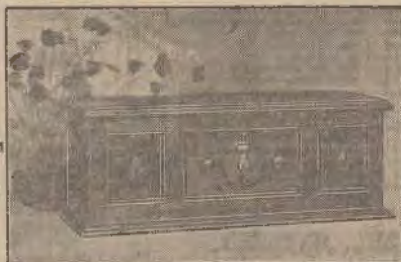
7.45 p.m.—The chimes of 2FC.
 8 p.m.—The "Hello Man" talks to the children.
 8.15 p.m.—Story time for the young folk.
 8.30 p.m.—The "Radio-Triad," instruments—leader, Mr. Ewart Chapple.
 8.45 p.m.—"Big Ben." Sporting: recitals of the day's events.
 9 p.m.—Weather intelligence.
 9.15 p.m.—Late "Evening News" news service.
 9.30 p.m.—Studio music.

NIGHT SESSION.

10 p.m.—Programme announcements.
 10.15 p.m.—"Flotman and Jetman."
 10.30 p.m.—"Big Ben."
 From the Studio:
 The N.S.W. State Military Band.
 10.35 p.m.—Lionel Lunt, English baritone.
 10.40 p.m.—Peggy Dunbar, contralto:
 "The Worldly Hope" (Liza Lehmann).
 10.45 p.m.—Win and Windie, English enter-tainers.
 10.50 p.m.—The N.S.W. State Military Band.
 10.55 p.m.—The "Two Festive Carollers":
 "Hats Sound every Minute" (Donaldson).
 11 p.m.—Bert Farrell, tenor:
 "Mairi, my Girl" (Aikman).
 11.05 p.m.—Fervid Spouse—reappearance of Australia's Champion Mouth Organ Player:
 "Hedley of Scotch Ails."
 11.10 p.m.—Peggy Dunbar, contralto:
 "Bring High" (Bradley-Keefer).
 11.15 p.m.—Miss Van Der Kiel, vocal solo:
 (a) "Sonata" (Boccherini).
 (b) "Wiegandell" (Schubert).
 11.20 p.m.—Latest weather forecast.
 The Two "Festive Carollers":
 "His Heaven" (Donaldson).

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"Porta" (Portable 4) £27/10/-		Absolutely complete.

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- 9.4 p.m.—Bert Farrell, tenor:
(a) "Thy beaming eyes" (MacDowell).
(b) "Yank (Go for a Garden)" (Del Riego).
- 9.16 p.m.—The N.S.W. State Military Band.
9.20 p.m.—Lionel Lusk, baritone.
9.24 p.m.—Further impressions of Hollywood, given by Miss Goodie Beave.
9.25 p.m.—Perchard Spoons, mouth organ player:
"Jolly Coppermith" March.
- 9.42 p.m.—The New South Wales State Military Band.
9.50 p.m.—Peary Dunbar, contralto:
(a) "Child, what stirs the Morning" (Maitland).
(b) "Dainty Boy" (Weatherly) (request).
9.58 p.m.—Julie Van Der Klo, cello solo: Request numbers.
- 10.5 p.m.—From the Ambassadors:
The Ambassadors Orchestra, conducted by Mr. A. Hammett.
- 10.16 p.m.—Lionel Lusk, English baritone.
10.24 p.m.—The Ambassadors Dance Orchestra, conductor, Mr. A. Hammett.
10.35 p.m.—From the Studio:
Late weather forecast.
10.42 p.m.—From the Ambassadors:
The Ambassadors Dance Orchestra.
10.47 p.m.—The "Two Festive Carolers":
(a) "Baby Boy."
(b) "Choicest Breeze Be" (Wayte).
- 10.57 p.m.—Late news and arrangements.
11 p.m.—"Big Ben."
The Ambassadors Dance Orchestra, interspersed with musical numbers from the Studio until midnight.
12 midnight—"Big Ben."
National Anthem.
Close down.

2BL, SYDNEY.

Tuesday.

- MORNING SESSION.**
11.30 a.m.—G.P.O. Clock and Chimes.
Musical programme from the Studio.
11.45 a.m.—News from the "Daily Telegraph".
11.55 a.m.—Musical programme from the Studio.
12 noon.—G.P.O. Clock and Chimes.
Special Great forecast and Weather report.
12.3 p.m.—Musical programme from the Studio.
Race results from Moresfield broadcast immediately after each race by means of the "Sun."
12.25 p.m.—News from the "Sun."
12.35 p.m.—Sporting and Athletic features.
12.47 p.m.—What's on at the Pictures and Theatres.
12.57 p.m.—Musical programme from the Studio.
12.40 p.m.—News from the "Sun."
12.50 p.m.—Musical programme from the Studio.
1 p.m.—G.P.O. Clock and Chimes.
Musical programme from the Studio.
1.10 p.m.—Sporting Talk and Athletic features for the day.
1.30 p.m.—Musical programme from the Studio.
1.50 p.m.—G.P.O. Clock and Chimes.
Talk in Children and Special Entertainment for Children in Hospital.
2 p.m.—G.P.O. Clock and Chimes.
Losing resume.
2.5 p.m.—Talk on "Women of the Orient" of all ages.
2.20 p.m.—Musical programme from the Studio.
2.40 p.m.—G.P.O. Clock and Chimes.
Losing resume.
2.40 p.m.—Musical programme from the Studio.
2.50 p.m.—News from the "Sun."
3 p.m.—G.P.O. Clock and Chimes.
Losing resume.
3.5 p.m.—Musical programme from the Studio.
3.20 p.m.—News from the "Sun."
3.45 p.m.—Musical programme from the Studio.
3.40 p.m.—Dungowan Dance Band, broadcast from Dungowan Cabaret.
4 p.m.—G.P.O. Clock and Chimes.
Losing resume.

- 4.5 p.m.—Musical programme from the Studio.
4.50 p.m.—News from the "Sun."
4.55 p.m.—Dungowan Dance Band.
4.55 p.m.—Resume of night's programme.
4.55 p.m.—Losing resume.
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.

- Uncle Jack and Uncle Hans will entertain the Children.

EVENING SESSION.

- 6.50 p.m.—Musical Recital by courtesy of His Masters Voice Gramophone Co.
7.45 p.m.—Haring news and news from the "Sun."
8 p.m.—G.P.O. Clock and Chimes.
Broadcasters' Topical Chorus.
8.15 p.m.—Broadcasters' Light Orchestra, under the direction of Mr. J. Knight Barnett.
8.19 p.m.—Miss Milla Hughes (soprano).
8.29 p.m.—Miss Dulcie Blair (violin solo).
8.37 p.m.—Mr. Wm. Green (tenor).
8.45 p.m.—Mr. Lawrence Dampbell (solicitor).
8.49 p.m.—Mr. Leslie McCallum (bale solo).
8.58 p.m.—Weather report and forecast by courtesy of Mr. C. J. Mars, Govt. Meteorologist.
Resume of following day's programme.
9 p.m.—G.P.O. Clock and Chimes.
9.15 p.m.—Broadcasters' Light Orchestra.
9.21 p.m.—Miss Milla Hughes.
9.28 p.m.—Mr. Leslie McCallum.
9.35 p.m.—Mr. Wm. Green.
9.35 p.m.—Mr. Hissgen Holenburgh (piano solo).
9.42 p.m.—Miss Mary Neal (soprano-contralto).
9.50 p.m.—Miss Dulcie Blair.
9.57 p.m.—Broadcasters' Light Orchestra.
10.14 p.m.—Cyril Kaye and The Westworn Cafe Orchestra broadcast from the Ballroom of the Westworn. During intervals between the dances "Sun" news will be broadcast.
11.30 p.m.—G.P.O. Clock and Chimes.
National Anthem.

2 UW, SYDNEY

Tuesday.

- MORNING SESSION.**
9 a.m.—News, Shipping, male 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 employee Lutebeck session.
12.45 p.m.—Close down.
- NIGHT SESSION.**
7 p.m.—Clock chimes.
7.15 p.m.—What is on.
7.30 p.m.—Orchestral selection: Selected.
7.45 p.m.—Professor O. Seaver: pianoforte solo.
7.51 p.m.—Miss Kathleen Dancy, soprano:
(a) Selected.
(b) Selected.
7.57 p.m.—Lillian Joyce, contralto:
"Here's to you" (Rabara).
7.57 p.m.—Amy Wilson, soprano:
"The Silver Bug" (Chamisso).
7.55 p.m.—Robert Meadows, Euphonium solo:
"Geornig" (White).
7.59 p.m.—Hilary Hudson, violin solo:
(a) "Tremolo" (Schumann).
(b) "Melody in F" (Rubenstein).
7.55 p.m.—Raybert Wilson, tenor: Selected.
7.59 p.m.—Professor G. Seaver, pianoforte solo: Selected.
7.55 p.m.—News items.
7.55 p.m.—Resume of forward programme.
8 p.m.—Clock chimes.
8.15 p.m.—Lillian Joyce, contralto:
(a) "Hans" (Davies).
(b) "Rose in the Dust" (Forster).
8.3 p.m.—Hilary Hudson, violin solo:
"Lindens" (Kreutzer).

- 8.14 p.m.—Miss Kathleen Dancy, soprano:
(a) Selected.
(b) Selected.
8.20 p.m.—Robert Meadows, euphonium solo:
"Just an Ivy Covered Shack" (Ruff).
8.24 p.m.—Miss Amy Wilson, soprano:
"Alah".
8.28 p.m.—Lillian Joyce, contralto:
(a) "Love's Old Sweet Song".
(b) "Glove Song" (Clay).
8.25 p.m.—Hilary Wilson, tenor: Selected.
8.40 p.m.—Studio selection.
8.45 p.m.—G. F. Mansel: Genn of the Opera No. 10.
"André Chénier" (Giodeno).
9 p.m.—Clock chimes.
9.17 p.m.—Genn of the Opera, continued.
9.20 p.m.—Weather forecast and news items.
9.25 p.m.—Studio selection.
9.30 p.m.—God Save the King.

3LO, MELBOURNE

Tuesday.

- MORNING SESSION.**
7.15 a.m.—"Herald" morning music.
7.15 a.m.—Close down.
- MIDDAY SESSION.**
11.30 a.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at M.C.G. by Mr. Rod McGregor.
11.45 a.m.—Close down.
12 noon.—Melbourne Observatory time signal.
12.1 p.m.—Metal prices received by the Australian Mines and Metals Association from London Stock Exchange this day.
12.15 p.m.—Official wireless news from Highbury Rovers and the Australian Press Association cables.
12.30 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
Maestro: Captain (Hosack).
Overture, "Light Cavalry" (Scpe).
12.50 p.m.—EILEEN CASTLES, soprano:
"Mon ver euvre a la voix"—Samson and Delilah (Saint Saens).
"Adieu" (Bartzi).
12.57 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
Selection, "Rose Marie" (Prinzl).
12.50 p.m.—ERN. TROTMAN, entertainer:
Grand Opera (original).
12.58 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
Saxophone solo, "Valse Erica" (Weissert).
Soloist, Jack Harney.
1.4 p.m.—Meteorological information, Weather forecast and rainfall for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecasts, River reports.
1.11 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
"Valse Triette" (Biblat).
1.15 p.m.—"The Wedding" (Mendelssohn).
1.18 p.m.—EILEEN CASTLES, soprano:
"St. Peter and the Rose."
"Tears April" (Nevin).
1.25 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
Three Dances—"Nell" (German).
1.25 p.m.—ERN. TROTMAN, entertainer:
"Ritz" (Lawe revised E.T.).
1.42 p.m.—ERNEST G. MITCHELL AND THE REGENT CONCERT ORCHESTRA.
"Ain't She Sweet" (Yellen).
"Positively—Absolutely" (Agar).
Selected.
2 p.m.—MR. PETER DRUMMOND, president of the Koroit Shire, will speak for a few moments.
2.15 p.m.—Description of Interstate Cricketers Match, Victoria v. New South Wales, at M.C.G. by Mr. Rod McGregor.
2.30 p.m.—Close down.
2.40 p.m.—Description of Interstate Cricketers Match, Victoria v. New South Wales, at M.C.G. by Mr. Rod McGregor.
During the afternoon results will be given of the Fitzroy Pony Race.

AFTERNOON SESSION.

- 12.15 p.m.—Melbourne Observatory time signal.
 12.30 p.m.—JOE ARONSON AND HIS SYMPHONIZING SYMPHONISTS:
 "Month's Wobbery" (Friend).
 "Swinging's Fashy" (Squire).
 "Mama's Just Younger" (Lew).
 12.45 p.m.—ONCE-ACT PLAY, Featuring EUGENE DUGGAN:
 "Is he guilty?" (Temple Harrison).
 News The Castle Inn
 The Time After Midnight
 12.55 p.m.—VAUDE AND VERNE, entertainers:
 "Variety."
 1.00 p.m.—JOE ARONSON AND HIS SYMPHONIZING SYMPHONISTS:
 "Tappertie"—piano solo (Greer).
 "Al Peasants" (Donatison).
 "Cable" (Bain).
 1.15 p.m.—VERA SPAULL, soloist (by permission of J. C. Williamson, Ltd.):
 "A Love in Spain."
 "My Double of Love."
 1.30 p.m.—JOE ARONSON AND HIS SYMPHONIZING SYMPHONISTS:
 "The Whole World is Laughing at Me" (Grudden).
 "Filling in Love with You" (Meyer).
 "Wish Your Blues Away" (Meyer).
 1.45 p.m.—ALBERT CARLISLE, tenor (by permission of J. C. Williamson, Ltd.):
 "Lorraine" (Henderson).
 "Paving By" (Puredell).
 2.00 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at M.C.G., by Mr. Rod McGregor.
 2.15 p.m.—VERA SPAULL, soloist:
 "Would I Certainly Could."
 "Do, You Know I Do."
 2.30 p.m.—ALBERT CARLISLE, tenor:
 "A Heed in Your Garden" (Russell).
 "That's How the World was Made" (Hendell).
 2.45 p.m.—"Herald" news service.
 3.00 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. New South Wales, at M.C.G., by Mr. Rod McGregor.
 3.15 p.m.—Class hour.

EVENING SESSION.

- 7.15 p.m.—Answers to letters and birthday greetings by "BILLY BUNNY."
 7.30 p.m.—Description of Finale of to-day's Interstate Cricket Match, Victoria v. New South Wales, at M.C.G., by Mr. Rod McGregor.
 7.45 p.m.—"BILLY BUNNY" will continue the Birthday Greetings.
 8.00 p.m.—Programme by the Pupils of Miss FREGA NORTHCOOTE:
 Song, EDNA HERR.
 Song, EILEEN O'LEARY.
 Song, ALFRED BROOKS.
 Devotion, NORMA LAMBERT.
 Song, BILDA FRODGS.
 Song, PHYLLIS and EDNA HERR.
 8.15 p.m.—"Herald" news service. Announcement.
 8.30 p.m.—FRANCES LEA, soprano:
 "We Lads Men" (Caldridge-Taylor).
 "To Let a Little Lonely Heart" (Needham).
 "The Night Nursery" (Arncliffe).
 8.45 p.m.—STATION QUARTETTE:
 "Serenade" (Muller).
 9.00 p.m.—DOROTHY ROXBURGH, violin:
 "The Grand Maman" (Benhart).
 "Number Song."
 9.15 p.m.—FRANCES LEA, soprano:
 "The Old Plugged Path" (Arncliffe).
 "The Lullaby Song"—Rip Van Winkle.
 9.30 p.m.—THE STUDIO QUARTETTE:
 "A Christmas Carol."

NIGHT SESSION.

- 10.00 p.m.—Mr. C. J. MILLER will speak on "Cruqua."
 10.30 p.m.—Under the auspices of the University of Melbourne Extension Board, MR. C. E. LONG, M.A., will speak on:
 "How the First Settlers in Victoria Spent their First Christmas Day."



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13-15 WENTWORTH AVENUE SYDNEY.

3AR, MELBOURNE

Tuesday.

MORNING NEWS BROADCAST.

11.0 a.m. to 12 noon.

MIDDAY CONCERT SESSION.

Transmitted from Parliament House, 212 Collins Street, by exclusive permission of Wills and Paton, Ltd., on the Broadway Programme.

1.0 p.m.—Close Down.

MATINEE SESSION.

ORCHESTRAL CONCERT.

SHEPPHIELD SHEILD CRICKET. Scores will be given at frequent intervals. During the afternoon the results of the Fitzroy People's Meeting and other information will be broadcast.

1.20 p.m.—Studio Orchestra.

1.45 p.m.—The Sparrows. Soprano Soloist: "Carmen" (Wilson).

"At Davonia" (Gidman).

1.55 p.m.—Studio Orchestra.

2.0 p.m.—Mr. Ronald Bramley. "Cello": "Tanzoni" (Schumann), by request.

2.15 p.m.—Studio Orchestra.

"Jingle" (Poncilguc).

"French Serenade" (Grieg).

2.30 p.m.—The Sparrows. Humorous Duo: "There Never Was a Love Like Ours" (Lawrence).

"Sustaining" (Jones).

2.40 p.m.—Studio Orchestra.

2.50 p.m.—G.P.O. Clock says "Four."

3.0 p.m.—2nd Weather Forecast.

3.1 p.m.—Announcements.

3.25 p.m.—Mademoiselle Jeannette.

Timely Topics, Home Hobbies, and News: Nothing for our Lady Listeners.

4.16 p.m.—Studio Orchestra.

4.35 p.m.—The Sparrows. Humorous Soloist: "Puck's Very Much" (Hal Zarem).

"Nini, Ninetta, Ninea" (Mendelssohn).

4.45 p.m.—Studio Orchestra.

5.0 p.m.—To-night's Entertainment.

5.1 p.m.—G.P.O. Clock says "Five". Close Down.

CHILDREN'S SESSION.

6.10 p.m.—Uncle Mac's Entertainment.

EVENING SESSION.

EMAS BAND CONCERT.

7.30 p.m.—"The Captain." School, lady and school sport for all the boys and girls of Australasia.

7.55 p.m.—Newmarket stock sales. Notices.

8 p.m.—G.P.O. clock says Eight.

8.1 p.m.—Special reports, weather information for the Northcote Soldiers and Citizens' Band. (Conductor: Mr. Wm. R. Gore junr.). The whole of the band numbers being those requested in letters from listeners-in to 3AR.

8.2 p.m.—"The Northcote Soldiers and Citizens' Band."

Waltz, "Migraine" (Lask).

8.7 p.m.—Miss Julia Russell, soprano: "Piano, piano," from Der Freischutz (Wagner).

8.13 p.m.—Mr. Alex Adams, entertainer. In seven minutes of happy bonhomie:

"These hard times" (Weston and Lee).

"That's a good girl" (Herlin).

8.20 p.m.—Announcements.

8.26 p.m.—"Northcote Soldiers and Citizens' Band."

Favourite, "Military Church Parade" (Hume).

8.37 p.m.—Mr. Bruce Calvert, tenor: "Bird song at evening" (Gidman).

"I hear you calling me" (Marchall).

8.45 p.m.—Miss Billie Lorraine, entertainer:

A dainty singer and her ukulele: "Hawaiian Heart" (Laine).

"Here a ukulele lady had a double babe" (Williams).

8.52 p.m.—Mr. John Box, bass: "The Border Ballad" (Cowen).

"Away in Albion" (Lohr).

7.45 p.m.—MR. E. M. FARCOE will speak on "Dovis."

A MISCELLANEOUS PROGRAMME OF MUSIC, SONG, AND STUNT.

8 p.m.—COLLINGWOOD CITIZENS' BAND: Intermission, "On the News."

8.7 p.m.—MARY MAICK, contralto: Song, "The Little Silver Ring" (Chambliss).

Whistling solo, "I Heard a Thrush at Eve" (Gidman).

8.15 p.m.—AGNES FORTUNE, piano: Songs and Favourite Dances (Olson).

8.25 p.m.—Hiddehøj on Evening Newspaper Production by GEORGE TAYLOR, News Editor of the Herald.

"How News is Obtained."

8.40 p.m.—COLLINGWOOD CITIZENS' BAND: Fox trot, "At Sundown."

8.47 p.m.—VAUDE AND VERTÉ: "Pantomimi."

8.54 p.m.—EILEEN CASTLES, soprano: "Lullaby of the Sky Blue Water."

"Nuthin'."

9.2 p.m.—ERN TROTMAN, entertainer: "The Village Doctor" (Original).

"Say No More About It" (Coxe).

9.16 p.m.—COLLINGWOOD CITIZENS' BAND:

March, "Foster's Own."

9.41 p.m.—LINE-UP PLAY, by the Third Prize Winner in S.L.O. Melbourne's Ocean Flag Competition.

Frank H. Goldsmith's play, entitled: "Geography's Dilemma."

9.57 p.m.—EILEEN CASTLES, soprano: "One Spring Morning" (Newin).

"Go Down, Moses"—Negro Spiritual (Barleigh).

9.54 p.m.—REGINALD BRADLEY: "Adepts from Spanish Scepters" (Lainé).

"Bolder" (Hiddehøj).

9.54 p.m.—MARY MAICK, contralto: Song, "My Shing" (Harvati).

Whistling solo, "I Hear You Calling Me."

10 p.m.—"Argus" news service. Meteorological information. Sporting news by "Glympus." British official wireless news from Rugby.

10.7 p.m.—COLLINGWOOD CITIZENS' BAND: Selected.

10.16 p.m.—ERN TROTMAN, entertainer: "At a Christian" (Original).

10.22 p.m.—JOE ARONSON AND HIS SYNCOMPATING SYMPHONISTS: "Can't Get Over a Girl Like You" (Byran).

"There's Everything Nice About You" (Byran).

"The Lullaby Lullaby" (Laille).

10.31 p.m.—PAT McLEAN, contralto: "Child Impersonations."

10.38 p.m.—Announcements. Island flower movements.

10.42 p.m.—JOE ARONSON AND HIS SYNCOMPATING SYMPHONISTS: "Cook a Doodle, I'm OK My Noodle" (Johnson).

"Song of Shanghai" (Ezan).

"Lucky Day" (Henderson).

10.51 p.m.—PAT McLEAN, contralto: "Child Impersonations."

11 p.m.—OUR GREAT THOUGHT—"Time is short; your obligations are infinite" (Massillon).

11.1 p.m.—JOE ARONSON AND HIS SYNCOMPATING SYMPHONISTS.

11.40 p.m.—GOD SAVE THE KING.

8 p.m.—Northcote Soldiers' and Citizens' Band:

March, "Contemplation" (Rising).

9.4 p.m.—Mr. Arthur Douglas, Scottish comedian:

Australia's popular Caledonian will entertain you with one of his own original comedy sketches:

"They can see silly Willie" (Douglas).

9.15 p.m.—Miss Julia Russell, soprano:

"Valse d'arte" from La Tosca (Puccini).

"The Swallows" (Gosset).

9.22 p.m.—Announcements.

9.27 p.m.—Northcote Soldiers' and Citizens' Band:

Selection, "Emerald Gems" (Smith).

9.38 p.m.—Mr. Alex Adams, entertainer, in 6 humorous songs:

"Paddy McGinty's goat" (Weston, 1926 Ed.).

"Ballroom" (Weston and Lee).

8.45 p.m.—Mr. Bruce Calvert, tenor:

"I shall know" (Zucca).

"I hear a thrush at eve" (Gidman).

8.52 p.m.—Miss Billie Lorraine, entertainer:

A dainty singer and her ukulele:

"I love to fall asleep in Mammy's arms" (Laine).

"Little Black Nigger" (Lorraine).

10 p.m.—G.P.O. clock says Ten.

10.1 p.m.—Sentimental weather forecast specially for our country listeners.

10.2 p.m.—Answers by "Audio." Replies and answers to 3AR radio engineers' mail to listeners who seek expert advice. "The service is free."

10.15 p.m.—Mr. John Box, bass:

"Brian of Glenasmole" (Grattan).

"When I go home" (Towers).

10.22 p.m.—Mr. Arthur Douglas, Scottish comedian, in one of Harry Lauder's very big Caledonian comic song sketches:

"The Waggle of the Kilt" (Lauder).

10.30 p.m.—Northcote Soldiers' and Citizens' Band:

March, "The victor's return" (Blissner).

Waltz, "Thoughts" (Alford).

10.40 p.m.—Special racing report, statistics and latest track information for tomorrow's races, by "Strip."

10.45 p.m.—"Cowboy's" entertainment.

10.52 p.m.—"The Argus" news bulletin, exclusive to 3AR.

10.58 p.m.—Final weather forecast.

10.59 p.m.—Our Australian good-night quote is taken from the poem:

"The Wish" by Max Gilchrist.

11 p.m.—G.P.O. clock says Eleven.

Good-bye the King.

4QG, BRISBANE.

Tuesday.

MIDDAY SESSION.

1 p.m.—Market reports, weather information.

"The Daily Mail" and "The Daily Standard" news.

1.50 p.m.—Lunch music.

1.55 p.m.—Standard time signal.

2 p.m.—Close down.

AFTERNOON SESSION.

The various events in connection with the Q.T.C. Christmas Meeting will be described direct from Ascot Racecourse. In between news music will be broadcast from the Studio.

2 p.m.—From Ascot. A description of the races.

2 p.m.—Close down.

EARLY EVENING SESSION.

6 p.m.—"Daily Standard" news, announcements.

6.15 p.m.—Lecturers' Nil.

6.30 p.m.—"The Children's Hour" stories by "Uncle Jim."

7 p.m.—Special News Service: Market commentary. Stock reports.

12.30 p.m.—Weather notes, announcements.
 1.45 p.m.—Standard time signals.
 7.45 p.m.—Lecturette: "Photography," by Mr. F. L. South (Manager Kodak Ltd.).

NIGHT SESSION.

PART I.

STUDIO PROGRAMME—THE STUDIO INSTRUMENTAL QUARTETTE.

8 p.m.—From the Studio:
 Overture: "La Tournaelle" (Marle).
 The Studio Instrumental Quartette.
 (Conductor Mr. F. C. Smith).
 Song: "Wings of Delight" (Brewer).
 Miss Vera McLeary.
 Piano:
 "Sonata F-Minor" (Beethoven), 1st movement Op. 57.
 Miss Marjorie Heese.
 Song: "The Horn" (Fletcher).
 Mr. Frank Currow.
 Fox Trot:
 (a) "The Springtime Again" (Comkoseau).
 (b) "Kilish" (Owens).
 The Studio Instrumental Quartette.
 Monologue: "The Obstructive Hat."
 Miss Fay Todd.
 Song: "The Lilac Domain" (Highland).
 Miss Fay Todd.
 Orchestra: "Fifth Nocturne" (Liszt).
 The Studio Instrumental Quartette.
 Song: "In Mustard and in Cream" (Lohmann).
 Mr. Frank Currow.
 Piano: "Liebestraume" (Liszt).
 Miss Marjorie Heese.
 Song: "My Dreams" (Tosti).
 Mr. Jack Land.
 Fox Trot: "You Remind Me of My Mother" (Cohen).
 The Studio Instrumental Quartette.
 Musical Monologue: "Peter."
 Miss Fay Todd.
 Song: "The Piper of Loo" (Caraw).
 Miss Fay Todd.
 March: "Home Town Band" (Weidt).
 The Studio Instrumental Quartette.
 Duet:
 "The Moon Hath Rained Her Lamp Above" (Beisdel).
 Messrs. Jack Land and Frank Currow.
 8.30 p.m.—FROM THE CENTENNIAL HALL:
 Dance Music.
 10 p.m.—The Daily Mail news service:
 Weather news.
 Close down.

6WF, PERTH.

Tuesday.

11.45 p.m.—Tune in.
 12.30 p.m.—Market, News and Cables.
 1 p.m.—Time signal from Perth Observatory.
 1.15 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia.
 1.30 p.m.—Studio Instrumental Trio.
 1.35 p.m.—Close down.
 1.50 p.m.—Tune in.
 2.15 p.m.—Organ music relayed from the Grand Theatre, Murray street.
 Vocal interludes from the studio.
 4.25 p.m.—Close down.
 4.45 p.m.—Tune in.
 The evening transmission is broadcast on 104.5 metres as well as the aerial wavelength.
 6.00 p.m.—Stories for the Kiddies by Uncle Henry and Duffy.
 6.30 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 Observatory.
 8.15 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia.
 Station announcements such as alterations to programmes, etc.

VARIETY NIGHT.

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



Farmer's Standard Five-valve Receiver, with Single-dial Control

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FARMER'S

10 p.m.—Late News Item by courtesy of "The Daily News," Newspaper Co.
Ships within Range announcement.
Weather report and forecast.

10.30 p.m.—Close down.

194.5 METRE TRANSMISSION.

Simultaneous broadcast on 194.5 metres of Programme given on 1230 metres, commencing at 9.45 p.m.

7ZL, HOBART

Today.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

8 p.m.—G.P.O. Clock chimes the hour.
11 p.m.—Time in substitute.
11.15 p.m.—Hobart Stock Exchange Quotations.
Weather information.
Items of interest—announcements.
11.15 p.m.—Selections by 7ZL Studio Trio:
"First Love" (Milkmaid).
"Rattle of Spring" (Ständchen).
Valse: "Bottom" (Drings).
"Melodia" (Agonini).
"Serenade Elera" (Carpaiz).
Selections: "Tanzhausener" (Wagner).
Vocal solo: Selected (Mr. E. J. McCann).
4.15 p.m.—Cooking Talk by "Regulo."
4.30 p.m.—Close down.

EARLY EVENING SESSION.

4.30 p.m.—Children's Corner by "Uncle Hector."

NIGHT SESSION.

7.00 p.m.—Musical selection.
7.55 p.m.—Library Lapses and Library Lists by Mr. W. E. Fuller.
7.59 p.m.—"Mercury" special Tasmanian news service.
Railway auction, produce sale.
Weather forecasts.
Hobart Stock Exchange Quotations.
8 p.m.—G.P.O. Clock chimes the hour.
8.15 p.m.—Broadcast by direct wire from Imperial Hotel, Hobart. Dance numbers by Mrs. Sheppard's Dance Trio interspersed with items from the Studio by the following:
Miss Alice Briggs, soprano.
Miss Edith Terry, soprano.
Mr. Joseph Hight saw violinist.
9 p.m.—Radio Question Corner by "Anoda."
9.40 p.m.—British Official Wireless news.
9.50 p.m.—"Mercury" special interstate news service. Ships within Wireless range.
9.55 p.m.—Weather forecast Station announcement—To-morrow's programme.
National Anthem.

Wednes., Dec. 28

2FC, SYDNEY

EARLY MORNING SESSION.

7 a.m. to 1 a.m.

MORNING SESSION.

10 a.m.—"Big Ben" and announcements.
10.5 a.m.—Studio music.
10.15 a.m.—"Sydney Morning Herald" news service.
10.25 a.m.—Studio music.
10.35 a.m.—A reading.
10.45 a.m.—Studio music.
11 a.m.—"Big Ben." Studio music.
11.5 a.m.—A.P.A. and Reuter's Cable Services.
11.10 a.m.—Studio music.

11.15 a.m.—A talk on Home Cooking and Recipes, by Miss Ruth Furst.
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.
12.15 p.m.—"Big Ben" wireless news.
12.20 p.m.—Studio music.
12.40 p.m.—Kathleen Stobley, mezzo.
12.45 p.m.—Studio music.
1 p.m.—"Big Ben" Weather intelligence.
1.1 p.m.—"Evening News" midday news service.

Producers' Distributing Society's Report.
1.20 p.m.—Studio music.
1.25 p.m.—Stock Exchange, second call.
1.30 p.m.—Studio music.
1.40 p.m.—Kathleen Stobley, mezzo.
1.45 p.m.—Studio music.
2 p.m.—"Big Ben" Close down.

AFTERNOON SESSION.

2.3 p.m.—"Big Ben" and announcements.
2.3 p.m.—Lionel Lunt, English baritone.
2.5 p.m.—From the Lyceum Theatre, Pitt Street, Sydney:
Orchestral items.
3.17 p.m.—From the Studio:
New Ballet, sourette:
"Dreaming of a Castle in the Air" (Ward).
3.21 p.m.—Freda Fish, violinist.
"Romance" (Swendsen).
3.26 p.m.—Florence Grant, soprano.
3.30 p.m.—From the Lyceum Theatre, Pitt Street, Sydney:
Orchestral items.
3.40 p.m.—From the Studio:
Lionel Lunt, baritone.
3.45 p.m.—Freda Fish, violinist:
"Meditation" (Glazounoff).
3.50 p.m.—William Bowyer, basso:
"Meeting" (Hight).
3.54 p.m.—Florence Grant, soprano.
3.58 p.m.—From the Lyceum Theatre, Pitt Street, Sydney:
Orchestral items.
4.10 p.m.—From the Studio:
New Ballet, sourette:
"Autumn Leaves are Falling" (Silver).
4.15 p.m.—William Bowyer, basso:
"Trade Winds" (Keel).
4.20 p.m.—From the Lyceum Theatre, Pitt Street, Sydney:
Orchestral items.
4.35 p.m.—From the Studio:
Freda Fish, violinist:
"Morris Dance" (German).
4.40 p.m.—Popular records.
4.45 p.m.—Stock Exchange, third call.
4.47 p.m.—A Pianoforte reproduction.
5 p.m.—"Big Ben." Close down.

EARLY EVENING SESSION.

5.45 p.m.—The chimes of 2FC.
5.45 p.m.—The "Hello Man" talks to the children.
6.15 p.m.—Uncle Rus and "Jerry" entertain.
6.30 p.m.—Story time for the young folk.
6.40 p.m.—Studio music.
7 p.m.—"Big Ben." Late sporting news.
7.18 p.m.—Daigley'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.—Late "Evening News" news service.

NIGHT SESSION.

7.40 p.m.—Programme announcements.
7.45 p.m.—Lionel Lunt, English baritone.
7.47 p.m.—A One-Act Play produced by Scott Alexander and his Company.
8 p.m.—"Big Ben."
From the Haymarket Theatre, George Street, Sydney: Items by the Haymarket Operatic Orchestra, conducted by Mr. Stanley Porter.
8.15 p.m.—From the Studio:
Re-appearance of the Russian operatic baritone, Signor Ubaldo Russo.

8.40 p.m.—W. P. Kay will complete his theatrical reminiscences, leaving this evening with "Incidents behind the Scenes."
8.51 p.m.—Lionel Lunt, English baritone.
8.40 p.m.—Rayne and Powell, entertainers:
(a) "They love it" (Arthur Powell).
(b) "You like a Hairier?" (Wood).
Lily Rayne.
(c) "Why be like because I love you?"
Rayne and Powell.
8.51 p.m.—Virginia Bassetti, contralto.
8.55 p.m.—Ad Cress, Scotch comedian.
9 p.m.—"Big Ben." Weather forecast.
9.1 p.m.—Scott Alexander: Radio Play.
9.14 p.m.—Signor Ubaldo Russo, Russian operatic baritone.
9.20 p.m.—Rayne and Powell, entertainers:
(a) "Night Time" (Edmond Beaumont).
Lily Rayne.
(b) "I'd love to be a baby again" (Ayer).
Arthur Powell.
(c) Duet: "Yesterday" (Williford).
Rayne and Powell.
9.28 p.m.—From the Haymarket Theatre, George Street, Sydney:
Items by the Haymarket Operatic Orchestra, conducted by Mr. Stanley Porter.
9.30 p.m.—From the Studio:
Ad Cress, Scotch comedian.
9.45 p.m.—Virginia Bassetti, contralto.
9.54 p.m.—Mr. Fazul, novelty musical act.
10 p.m.—Lionel Lunt, English baritone.
10.3 p.m.—Dance music, arranged by Len Maurice.
10.20 p.m.—Len Maurice, popular baritone.
10.24 p.m.—Mr. Faola: Musical act.
10.30 p.m.—Late weather forecast.
10.31 p.m.—Dance music, interspersed with vocal items by Len Maurice.
10.47 p.m.—Late news and announcements.
11 p.m.—"Big Ben."
National Anthem.
Close down.

2BL, SYDNEY.

Wednesday.

EARLY MORNING SESSION.

8.0 a.m. to 9.0 a.m.

MORNING SESSION.

11.5 a.m.—G.P.O. Clock and Chimes; Musical Programme from the Studio.
11.15 a.m.—Women's Session; Talk on "Aviation" by Miss Varley; Social Notes; Replies to Correspondents by Mrs. Jordan. Talk on "Dental Hygiene" by a member of the Dental Board.

AFTERNOON SESSION.

Race Results broadcast immediately after each race, by courtesy of the "Sun."
12.4 noon—G.P.O. Clock and Chimes; Special Ocean Forecast and Weather Report.
12.3 p.m.—Musical Programme from the Studio.
12.4 p.m.—Information, Mail, Shipping and Port Directory.
12.11 p.m.—Boats 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.
12.23 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 Record.
1.27 p.m.—Stock Exchange Report.
1.30 p.m.—G.P.O. Clock and Chimes; Talk to Children and Special Entertainment for Children in Hospital.
2.0 p.m.—G.P.O. Clock and Chimes; Racing Results.
2.5 p.m.—Musical Programme from the Studio.
2.20 p.m.—News from the "Sun."
2.80 p.m.—Musical Programme from the Studio.
2.45 p.m.—Talk on "Celtic Mythology."

- 1.30 p.m.—G.P.O. Clock and Chimes; Racing Results.
 1.35 p.m.—News from the "Sun."
 2.10 p.m.—Pianoforte Recital from Studio.
 2.20 p.m.—News from the "Sun."
 2.35 p.m.—Musical Programme from the Studio.
 2.41 p.m.—Dungowan Dance Band; Broadcast from Dungowan Cabaret.
 2.45 p.m.—G.P.O. Clock and Chimes; Racing Results.
 3.15 p.m.—Musical Programme from the Studio.
 4.15 p.m.—Talk on Women of the Orient of all ages.
 4.30 p.m.—Dungowan Dance Band.
 4.50 p.m.—Resume of Night's Programme.
 4.52 p.m.—Special Ocean Forecast.
 4.54 p.m.—Racing Results.
 5.6 p.m.—G.P.O. Clock and Chimes; Close Down.

EARLY EVENING SESSION.

- 5.43 p.m.—G.P.O. Clock and Chimes. Children's Session. Uncle Jack and Uncle Boas will entertain the Kiddies.

SPECIAL COUNTRY SESSION.

- 6.26 p.m.—G.P.O. Clock and Chimes; Australian Mercantile Lard 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 Reports; Grain and Fodder Report ("Sun"); Dairy Produce Report ("Sun"); N.R.M.A. Talk.
 6.40 p.m.—Country News from the "Sun."
 7.0 p.m.—Musical Recital by courtesy of His Master's Voice Gramophone Co.
 7.30 p.m.—Talk on "Tennis," by Dr. McKibben.
 8.0 p.m.—G.P.O. Clock and Chimes; Broadcasters' Topical Clerus.
 8.3 p.m.—King's Mandolin Orchestra.
 8.10 p.m.—Miss Mildred Hansen (Soprano).
 8.17 p.m.—Miss Nell Crane (Contralto).
 8.24 p.m.—Mr. C. Weatherley (Instrumentalist).
 8.31 p.m.—The Canterbury District Band (Bandmaster, Mr. Brian Nichols), broadcast from Birnie Campine.
 8.51 p.m.—Mr. Herbert C. Hinchcliffe (Baritone).
 8.58 p.m.—Weather Report and Forecast by courtesy of Mr. Marns, Government Meteorologist.
 9.0 p.m.—G.P.O. Clock and Chimes.
 9.1 p.m.—The Canterbury District Band.
 9.21 p.m.—Miss Mildred Hansen.
 9.28 p.m.—Miss Nell Crane.
 9.35 p.m.—King's Mandolin Orchestra.
 9.42 p.m.—Mr. Herbert C. Hinchcliffe.
 9.48 p.m.—Mr. C. Weatherley.
 9.56 p.m.—Resume of Following Day's Programme.
 10.0 p.m.—G.P.O. Clock and Chimes; Broadcasters' All Sports Expert will talk on General Sporting in Bill Campine.
 10.15 p.m.—Romano's Dance Orchestra, under the Direction of Mr. Merv. Lyons. Broadcast from Romano's.
 11.30 p.m.—G.P.O. Clock and Chimes; National Anthem.

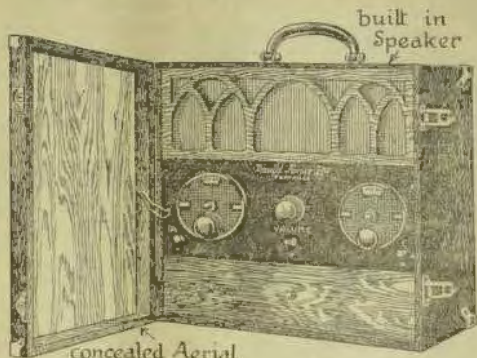
2 UW, SYDNEY

Wednesday.

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

AFTERNOON SESSION.

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



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A good Christmas Box!

"D.J. PORTABLE-4"

for £2/10/- deposit

The "D.J. Portable-4" is just the Set for the holidays. It is in a neat 16 x 16 x 9-inch case that packs easily in car or boat and only weighs 31 lbs. complete.

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The "Trave-Ler-5" is another good portable, too. It comes in a 13-inch black leatherette case. You can take delivery on payment of £3 and 11/6 weekly for one year. Cash Price £30

Radio Dept., Lower Ground Floor, New Store.

DAVID JONES'

Castlereagh, Market & Elizabeth Streets

EVENING SESSION.

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

NIGHT SESSION.

- 7 p.m.—Studio chimes.
7.30 p.m.—Where to go.
7.45 p.m.—Studio selections.
7.50 p.m.—Miss Sylvia Churchill, mezzo soprano:
(a) "Love's Wish."
(b) "Lullaby sung at Eventide."
8 p.m.—Studio selections.
8.15 p.m.—Gordon McDonald, jazz interlude:
(a) "Follow the Swallows."
(b) "Wonderful eyes."
(c) "Russian Lullaby."
8.30 p.m.—News items.
8.45 p.m.—Resume of forward programme.
8 p.m.—Chick chimex.
8.55 p.m.—Douglas Rae, tenor:
(a) "I Hear a March at Sea" (Caldman).
(b) "An Evening Song" (Rhamenthal).
8.58 p.m.—Mr. and Mrs James Campbell, steel guitar selections.
9.15 p.m.—Miss Sylvia Churchill, mezzo soprano:
(a) "Toss."
(b) "Carissima."
9.24 p.m.—Studio selections.
9.34 p.m.—Miss Mabel Ramsbotham, violin solo:
(a) Selected.
(b) Selected.
9.40 p.m.—Gordon James McDonald, jazz interlude:
(a) "C'est Vous."
(b) "Muddy Water."
(c) "Nightie-Night."
9.50 p.m.—Douglas Rae tenor:
(a) "A Dream" (Ballet).
(b) "Down Here" (Brahm).
9.55 p.m.—News items.
9 p.m.—Chick chimex.
9.2 p.m.—Weather forecast and news.
9.5 p.m.—Mr. and Mrs James Campbell, steel guitar selections.
9.15 p.m.—Miss Sylvia Churchill, mezzo soprano:
(a) "No more alone."
9.23 p.m.—Miss Mabel Ramsbotham, violin solo:
(a) Selected.
9.30 p.m.—Studio selections.
9.35 p.m.—God Save the King.

3LO, MELBOURNE

Wednesday.

MORNING SESSION.

- 1.15 p.m.—Herald Morning Session.
2.15 p.m.—Close down.

MIDDAY SESSION.

- 11.30 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
12 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. Reuter's and The Australian Press Association Cables. "Argus" news service.
12.30 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS:
"Sue Me a Baby Song" (Kahn).
"Moonlit Waters" (Friend).
"What Does it Matter" (Berlin).
12.35 p.m.—THE PREMIER FOUR (by permission of C. Williamson, Ltd.):
"How I Love You" (Brown and Friend).
"Dont Sing Alahs" (Morat).
12.45 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS:
"Everything is made for Love" (Johnson).
"Who Could be More Wonderful than You" (Davis).
"Upright and grand". Piano solo (Hloom).

- 12.45 p.m.—ERN TROTMAN, Entertainer:
Conciliations.
12.55 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS:
"Muddy Water" (the Ross).
"Looking for a Boy" (Gerstein).

- 1 p.m.—Melbourne Observatory Time Signal. Enjoying yourself? But don't forget—keep on remembering. Safety First.
1.15 p.m.—VAUDE and VERNE:
"Vaudesillennites."
1.21 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
1.25 p.m.—FROM THE STUDIO:
1.30 p.m.—Meteorological information. Weather forecast, and rainfall for Victoria, Tasmania, South Australia and New South Wales. Current "Ararat" River reports.
1.37 p.m.—THE PREMIER FOUR:
"Pastoral Clover."
"Just An Ivy Covered Shack" (Davidson).
1.54 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS:
"That Certain Feeling" (Gerstein).
"I Won't Go Home Tonight" (Gilbert).
"Pleading" (Jimm).
1.58 p.m.—ERN TROTMAN, Entertainer:
1.59 p.m.—"The Ladies."
1.59.10 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS:
"Glimpses the Fair, next door" (Morat).
"Tinker, Tallow, Soldier, Sailor" (Frank).
"Crazy Moon" (Knaubann).
2 p.m.—Close down.
2.15 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
2.20 p.m.—"Ararat" River reports. Two entries, ASPENDALE RACES, by "Musk".
2.25 p.m.—Close down.
Results of the Ararat Turf Club Races will be given as they come to hand.
2.45 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
3 p.m.—Melbourne Observatory Time Signal.
3.1 p.m.—Description of MAIDEN PLATE, 3 furlongs, ASPENDALE RACES, by "Musk".
3.5 p.m.—BRUNSWICK CITY BAND:
Selection, "Lullaby."
3.15 p.m.—ELLEN CASTLES, Soprano:
"Lovely Spring" (Comer).
"Maiden's Wish" (Chopet).
3.22 p.m.—BRUNSWICK CITY BAND:
Overture, "Chanson de soir."
3.30 p.m.—Description of ASPENDALE PLATE, 4 furlongs, ASPENDALE RACES, by "Musk".
3.35 p.m.—GERTRUDE HUTTON, contralto:
"The Minstrel" (Easthope Martin).
"Wake Soul of Mine" (Jordan).
3.45 p.m.—BRUNSWICK CITY BAND:
Jodel, "My Irish Maid."
3.55 p.m.—CAPT. DONALD MACLEAY:
"A sail, a sail—but she fits the Jolly Roger."
4 p.m.—Description of ASPENDALE PARK HANDICAP, 1 mile, ASPENDALE RACES, by "Musk".
4.5 p.m.—BRUNSWICK CITY BAND:
Waltz, "The Prairie Flower."
4.15 p.m.—EILEEN CASTLES, soprano:
"Love's Young Dream" (Irish).
"Bells of Shandon" (Irish).
4.25 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
4.30 p.m.—Description of ASPENDALE PURSE, 4 furlongs, ASPENDALE RACES, by "Musk".
4.35 p.m.—GERTRUDE HUTTON, contralto:
"Love Went a Riding" (Bridley).
"The Night" (Morat).
4.42 p.m.—BRUNSWICK CITY BAND:
Selection, "The Thistle and the Rose."
4.50 p.m.—"Herald" news service.
5 p.m.—Description of Jumpers' Flat Race, ASPENDALE RACES, by "Musk".
"The Sporting Globe".

- 5.5 p.m.—Description of INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, at the Melbourne Cricket Ground, by Mr. Rod McGregor.
5.20 p.m.—Close down.

EVENING SESSION.

- 5.35 p.m.—Answers to Letters and Birthday Greetings to all by "MARY, MARY."
5.50 p.m.—Mr. Rod McGregor will give the final results of the INTERSTATE CRICKET MATCH, VICTORIA v. NEW SOUTH WALES, from the Melbourne Cricket Ground.
6 p.m.—STUDIO QUARTETTE:
"My Waves of Minnetonka" (Leinstrick).
6.15 p.m.—BOBBIES, Master E. J. MILLER, of Qualified Grammar School, winner of First Prize in his collection of books displayed at the school, will give a talk on "The Building of Model Ships."
6.25 p.m.—STUDIO QUARTETTE:
"Sad Moon and Falling Leaf."
6.30 p.m.—"MARY, MARY," will tell about "The Little Goose Girl."
6.40 p.m.—Official report of Newmarket Stock and by the Associated Stock and Station Agents, Bourke-street, Melbourne.
6.45 p.m.—"Herald" news service. Weather forecast. Shipping movements.
6.55 p.m.—Stock Exchange information.
6.57 p.m.—Fish Market reports by J. P. Gotts, Ltd. Fish prices.
6.58 p.m.—River reports.
7 p.m.—Market reports by Vic. Producers' Co-operative Co., Ltd., Poultry, Grain, Hay, Straw, Jute, Dairy Produce, Potatoes and Onions. Market reports of Fruit by the Victorian Fruitgrowers' Association—retail prices. Wholesale prices of Fruit by the Wholesale Fruit Merchants' Association, Citrus Fruits.

NIGHT SESSION.

- 7.15 p.m.—MR. C. ELLIS:
"In the Nursery."
7.30 p.m.—MR. P. W. FEARCE:
"A Talk to Business Men."
7.45 p.m.—CAPT. C. H. PETERES:
"Boys, Wise and Otherwise."
8 p.m.—BRUNSWICK CITY BAND:
March, "Sour."
March, "Little Drummer."
8.10 p.m.—EILEEN CASTLES, Soprano:
"Flower Song," Faust (Gounod).
"Crying of the Water" (Campbell Libby).
8.17 p.m.—MOANA LUA DUO, Hawaiian Instrumentalists:
Hawaiian and Spanish Guitars:
"Pelinko Blues."
"Hawaiian Jodel."
8.24 p.m.—Sidelight on Evening Newspaper Production by MR. GEORGE TAYLOR, News Editor of "The Herald."
"What is News?"
8.40 p.m.—BRUNSWICK CITY BAND:
Overture, "Isola."
8.50 p.m.—EILEEN CASTLES, Soprano:
"Autumn Song" (Schert).
"Autumn Sadness" (Nevin).
8.55 p.m.—VAUDE and VERNE:
Cross Words.
9.5 p.m.—Announcements.
9.10 p.m.—Second and Third acts of "THE STUDENT PRINCE," transmitted from His Majesty's Theatre, by permission of J. C. Williamson, Ltd.
CAST:
First Lockety J. BANNON
Second Lockety K. DAVIS
Third Lockety H. V. BAINES
Fourth Lockety J. DOWNE
Van Hook NOEL DAINTON
Dr. Engel REDLEY HALL
Prince Earl JAMES LIDDY
Ruler CONRAD CHABLON
Gretchen VERA SPAULL
Furth Lockety JOHN FORDE
Nicholas RAY CAREY
D-Off RUSSELL SCOTT
Lockety DAVID GRAHAM
Anstey GEORGE GUNYINGHAM
Rath BEPPIE DE VRIES
Lute ARTHUR STEGANT
Hubert MASON WOOD

Grand Duchess Anastasia

MILLIE ENGLER
Princess Margaret ADRIE CRANE
Capt. Trancy FRANK WESTER
Countess Dejala FRANK DESMOND
Baron Aradim NOEL SMITH
Freshman R. LAWSON
Coachman T. HOLM
Captains of the Guard ERIC DESMOND

SYNOPSIS OF SCENES:
Princess Kar's study room at the Inn of the "Three Golden Apples" (Four months later).

ACT III.

The Throne Room of the King's Palace at Karlsberg (two years later).

MUSICAL NUMBERS.

Ermar Jacob, Students of stage. "Student Life": Prince, Engel, Kathie, Ersteben, Detlef, Lucas, Van Asterberg, Toni and Students.

"Farewell Dear," Prince and Kathie.
"Deep in My Heart," Entire company.

ACT III.

"Waltz"—Ensemble.
"Just We Two," Princess, Tarnik and company.

Cavalcade.
Finale: Karl, Franz, Kathie, Engel, and Students.

FROM THE STUDIO.

10.30 p.m.—BRINSWICK CITY BAND.

Lancers. "All Stars."

10.42 a.m.—ERN TROTMAN, Entertainer:

Holiday Humour.

10.48 p.m.—MOANA LUA DUO.

Spanish Guitar Solo.

"Melley of Spanish Waltzes" (G. Compton).

Mandolin and Spanish Triplet Duet:

"Wonder How I Look When You Absent."

Hawaiian and Spanish Guitar:

"Hilo."

10.55 p.m.—"Argus" news service, meteorological information, British official wireless news from Remy, announcements.

11 p.m.—OUR GREAT THOUGHT:

"The sure way to miss success is to miss the opportunity." — Phillares Charley.

11.7 p.m.—JOE ARONSON'S SYNCOPATING SYMPHONISTS.

11.48 p.m.—GOD SAVE THE KING.

4QG, BRISBANE.

Wednesday.

EARLY MORNING SESSION.

6.30 a.m.—Physical culture session.

7 a.m.—Close down.

MIDDAY SESSION.

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

1.30 p.m.—Lunch Hour Music.

1.53 p.m.—Standard time signal.

2 p.m.—Close down.

AFTERNOON SESSION.

3.30 p.m.—FROM THE STUDIO:

Afternoon Tea Music.

4.15 p.m.—"The Telegraph" news.

4.50 p.m.—Close down.

EARLY EVENING SESSION.

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

6.10 p.m.—Lecture:

A Beauty Talk by Dorothea Webster.

6.30 p.m.—The Children's Hour:

Stories by "Little Miss Brisbane."

7 p.m.—Special news service; Market reports; Stock reports.

7.30 p.m.—Weather news; announcements.

7.45 p.m.—Standard time signal.

7.45 p.m.—Lecture: "The Agricultural High School," by Professor J. K. Murray (University of Queensland and Principal Gatton College).

TWO NEW EVER-READY RADIO BATTERIES

Below you will find full particulars of the two new Ever-Ready 45-Volt H.T. "E" Batteries.

They are a typically fresh when you buy them as the other Ever-Ready types, but are of even sturdier construction to counteract the heavy current drain imposed on them by modern multi-valve receiving sets.

Used in conjunction with the EVER-READY No. 125 "C" Battery, they represent the most economical Radio Battery service obtainable in Australia.



Type H.D. 45-Volt.
Dimensions: 8" x 8 1/2" x 3 1/2".
PRICE, 22/6.

The new EVER-READY 45-volt HEAVY DUTY "H" Battery is made up of 50 large cells in moisture-proof containers, with positive active terminal tops at 16, 24, 30 and 45 volts. Heavy Gauge Zinc Containers, High grade 2 1/2 x 1 1/2 cells, perfectly balanced and the whole efficiently insulated, insures long life and noiseless operation, warranted to give service NOT EXCEEDED by any other make of Battery of equal size and capacity.

The new EVER-READY 45-volt SUPER SERVICE "S" Battery is similar in design to the above listed Heavy Duty Battery, but the cells are of the same size as those contained in our well-known and popular No. 125 EVER-READY "C" Battery, but of even sturdier build and more powerful output capacity. They have been specially designed to withstand the heavy current drain imposed by the use of Multi-valve Sets, of the Neurodyon and Super Heterodyne types.



Type S.S. 45-Volt.
Dimensions: 8" x 6 1/2" x 3 1/2".
PRICE, 26/6.

Ask your dealer, or write us, for an interesting folder about Ever-Ready Radio Batteries, which gives many valuable economy hints to "E" Battery users.

The Ever-Ready Co. (Gt. Britain) Ltd.
163 Pitt Street :: Sydney

NIGHT SESSION.

- 8 p.m.—FROM THE STUDIO:
Monologue: "De Quincey's Deed."
Miss Gladys Hancock.
Piano: "Aufschwung" (Schumann).
Miss Hilda Vinecat.
Duet: "Something" (Fryml).
Miss Pat McOnigly and
Mr. Ernest Harper.
Keclogue: "The Last Puma."
Miss Gladys Hancock.
Tenor solo: "The Garraun" (Adams).
Mr. Jack Land.
Soprano solo: "The Amorous Goldfish"
(Jones).
Miss Pat McOnigly.
Monologue: "Wishing."
Miss Gladys Hancock.
Piano solo:
"Ballade," Op. 10, No. 1 (Brahms).
Miss Hilda Vinecat.
Bass Solo:
"O Flower of All the World" (Pindoro).
Mr. Ernest Harper.
Tenor Solo:
"Waves of the Ladies" (Day).
Mr. Jack Land.
Soprano Solo: "Araby" (Nicholls).
Miss Pat McOnigly.
Piano solo:
(a) "Valse Capriccio Minor" (Chopin).
(b) "Waltz 'Stagall'" (Scott).
Miss Hilda Vinecat.
Bass Solo:
"Star of My Soul" (Jones).
Mr. Ernest Harper.
9 p.m.—Metropolitan Weather Forecast.

PART II.—DANCE MUSIC.

- A programme of dance music by Alf Fetherstone and his Studio Syncopators. Between dances solo items will be broadcast as follows:
Contraalto solo:
(a) "Parowell to Summer" (Johnson).
(b) "Soul of Mine" (Harris).
Miss Jessie McDonald.
Bass solo:
(a) "My Dreams" (Tort).
(b) "The Temple Bells" (Woodford-Finden).
Mr. D. K. Symes.
Group of Radio Numbers by Mr. N. Gould.
10 p.m.—"The Daily Mail" news; Weather news. Close down.

6WF, PERTH.

Wednesday.

- 12.30 p.m.—Tune in.
12.35 p.m.—Markets, News, and Cable.
1 p.m.—Time signal from Perth Observatory.
1.15 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia.
1.2 p.m.—Studio Quintette.
9 p.m.—Close down.

AFTERNOON SESSION.

- 2.30 p.m.—Tune in.
2.35 p.m.—Talk: "Shop Windows" by Jazetta.
2.55 p.m.—Orchestral music played by Hoyte Regent Orchestra, conducted by Mr. Harold Partington, relayed from Hoyte Regent Theatre, William Street.
Vocal interludes from the studio.
4.30 p.m.—Close down.
4.45 p.m.—Tune in.
The evening transmission is broadcast on 194.5 metres as well as the usual wavelength.
6.50 p.m.—Stories for the Kiddies by Uncle Henry and Duffy.
7.20 p.m.—Stocks, Markets, News.
7.45 p.m.—Sporting talk by Mr. R. E. Craven.
8 p.m.—Time signal from Perth Observatory.
8.1 p.m.—Weather notes supplied by the Meteorological Bureau of Western Australia. Station announcements, such as alterations to programmes etc.

- 9 p.m.—Concert Night:
Musical programme, including vocal and instrumental artistes:
Orchestral music played by Harold Partington and his seventeen piece orchestra, relayed from Hoyte Regent Theatre, William Street.
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.

194.5 METRE TRANSMISSION.

Simultaneous broadcast on 194.5 metres of programme given on 1250 metres, commencing at 6.45 p.m.

7ZL, HOBART

Wednesday.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

- 3 p.m.—G.P.O. Clock chimes the hour.
3.1 p.m.—Tune in selection.
3.5 p.m.—Hobart Stock Exchange Quotations. Weather information.
Items of interest—announcements.
3.35 p.m.—Musical items from the studio.
4 p.m.—Social and Educational Calendar from Illustrated Tasmanian Mail.
4.15 p.m.—Story from Illustrated Tasmanian Mail.
4.30 p.m.—Close down.

EARLY EVENING SESSION.

- 5.30 p.m.—"Uncle Peters" half hour.
7 p.m.—Story from Illustrated Tasmanian Mail—Birthday Greetings.

NIGHT SESSION.

- 7.30 p.m.—Musical selection.
7.35 p.m.—Weekly Sporting Correspondent.
7.55 p.m.—"Mercury" special Tasmanian news service. Railway auction products sale.
Weather forecasts.
Hobart Stock Exchange Quotations.
8 p.m.—G.P.O. Clock chimes the hour.
8.1 p.m.—Selections by Tally Studio Trio:
Selections from "Tally" (Kera).
"Fiddle Bouton D'ore" (Pittman).
"Sparkling" (Miles).
Violin solo: Selected. (Mr. Bernard Freeman).
"Lambourne Dance" (Dunhill).
Intermezzo: "Araby" (John).
Overture: "Soldiers' Return" (Grunwald).
Clarinet solo: Selected (Mr. A. Caddie).
Tango: "Les Mysterieuses" (Barbirelli).
Pianoforte solo: Selected (Mr. A. Roberts).
Hermann Lehr Popular Songs.
Interpreted with items from the following:
Miss Jean Ribbard, mezzo-soprano.
Mr. George Hair, tenor.
Mr. Hugh Taylor, electrician.
8.10 p.m.—British Official wireless news.
9 p.m.—"Mercury" special interstate news service. Ships within wireless range.
Weather forecasts.
Station announcements—Tomorrow's programme.
National Anthem.

- 10.30 a.m.—Studio music.
10.35 a.m.—Last minute racing information by the 2FC 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.
11.10 a.m.—Studio music.
11.15 a.m.—A reading.
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.
12.3 p.m.—Studio music.
12.15 p.m.—Summary of "Spinny Morning Herald" news service.
12.15 p.m.—Engly wireless news.
12.20 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.

- 1.20 p.m.—Studio music.
1.28 p.m.—Stock Exchange, second call.
1.30 p.m.—Studio music.
1.40 p.m.—Margaret Butterworth, contralto:
(a) "My Starry Soul" (Gardner).
(b) "Little Cousin's Prayer" (Hope).
1.45 p.m.—Studio music.
1.52 p.m.—The 2FC Racing Commissioner is the latest sporting information.
2 p.m.—"Big Ben" Close down.

AFTERNOON SESSION.

- 3 p.m.—"Big Ben" and announcements.
3.5 p.m.—From the Christ Church, St. Lawrence, Sydney:
An Organ Recital by Christian Hellemann.
3.20 p.m.—From the Studio:
May Craven, mezzo:
"Man in the Moon" (Dulmer).
3.25 p.m.—From the Christ Church, St. Lawrence, Sydney:
Items from the Organ Recital by Mr. Christian Hellemann.
3.40 p.m.—From the Studio:
Eileen Mureau, soprano:
"Walt of Hinderbach".
3.45 p.m.—Rita Head, mezzo:
"At Grandon Pair" (Marie).
3.50 p.m.—Lionel Lunt, English baritone.
3.55 p.m.—Beiler Herzog, soprano:
"Sing of the Little Folk" (Gustes).
4 p.m.—"Big Ben".
May Craven, mezzo:
"In the dim light of the night" (Philibe).
4.5 p.m.—From the Christ Church, St. Lawrence, Sydney:
Considering items of the Organ Recital by Mr. Christian Hellemann.
4.20 p.m.—From the Studio:
Eileen Mureau, soprano:
"I love you truly" (Jacobs-Bond).
4.25 p.m.—Rita Head, mezzo:
"Wind in the Trees" (Goring Thomas).
4.30 p.m.—Pannular records.
4.40 p.m.—Eather Herford, soprano:
"Off in the still night" (Old Irish Air).
4.45 p.m.—Stock Exchange, third call.
4.47 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" talks to the children.
6.30 p.m.—Stories for the young folk, told by Miss Dorothy McKeown.
6.40 p.m.—Studio music.
7 p.m.—"Big Ben" Late sporting news.
7.10 p.m.—Dulgety's Market Reports (wool, wheat and stock).
7.15 p.m.—Fruit and vegetable markets. P.D.S. Poultry reports.
7.22 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.—Mrs. Matthews will continue her impressions of the Tour to America with the Industrial Commission.

Thurs., Dec. 29

2FC, SYDNEY

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

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

8 p.m.—"Big Ben."
The 2FC Studio Orchestra, conducted by Mr. Horace Keats:
(a) Overture "Hoy Blas" (Mendelssohn).
(b) "Hymn to the Sun" (Rimsky-Korsakov).
12 p.m.—Raymond Ellis, English operatic baritone:
(With Orchestral accompaniment).
14 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keats:
Selection, "Catherine" (Tchickalowsky).
18 p.m.—Gwen Selva, soprano:
(With Orchestral accompaniment).
19 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keats:
(a) Waltz, "The Girl of the Golden West" (Puccini).
(b) "Rondo Caricioso" (Mendelssohn).
19 p.m.—Rus Gurling in "Mirth and Melody"
20 p.m.—The 2FC Studio Orchestra:
Selection, "Lullaby" (Schubert).
1 p.m.—"Big Ben." Latest weather forecast.
2 p.m.—Raymond Ellis, English operatic baritone:
(With Orchestral accompaniment).
10 p.m.—Carlton Fay will take listeners for another Cook's Tour of the World. Part I.
10 p.m.—Gwen Selva, soprano:
(With Orchestral accompaniment).
15 p.m.—The 2FC Studio Orchestra, conducted by Mr. Horace Keats:
(a) Sextette from "Lucia de Lammermoor" (Donizetti).
(b) "Liebestraum" (Von Elan).
15 p.m.—Raymond Ellis, English operatic baritone; Recount numbers.
15 p.m.—Rus Gurling.
16 p.m.—From the Ambassadors:
The Ambassadors Orchestra, conducted by Mr. Al Hammet.
16 p.m.—"Big Ben."
From the Studio:
Gwen Selva, soprano.
18 p.m.—The 2FC Studio Orchestra:
"Northern Impressions" (Grieg).
12 p.m.—Carlton Fay:
Part II. of Cook's Tour.
22 p.m.—From the Ambassadors:
The Ambassadors Dance Orchestra, conducted by Al Hammet.
30 p.m.—From the Studio:
Latest weather forecast.
22 p.m.—From the Ambassadors:
Dance music.
27 p.m.—From the Studio:
Lute news and announcements.
p.m.—"Big Ben."
From the Ambassadors:
The Ambassadors Dance Orchestra in popular numbers until 11.45 p.m.
Intervals at the Ambassadors will be filled with musical items from the Studio.
45 p.m.—National Anthem.
Close down.

2BL, SYDNEY.

Thursday.

EARLY MORNING SESSION.
3 a.m. to 8 a.m.

MORNING SESSION.

3.30 p.m.—G.P.O. clock and chimes.
Musical programme from the Studio.
4.0 p.m.—News from the "Daily Telegraph"
"Futurist."
4.30 p.m.—Musical programme from the Studio.
5 a.m.—G.P.O. clock and chimes.
Announcements.
5.15 a.m.—Musical programme from the Studio.
5.30 a.m.—Women's session. Social notes.
Replies to correspondents by Mrs. Jordan.
Talk on "Architecture" by Mr. Brogan.
Talk on "Denslow Craft" by Miss Hoyles.
noon.—G.P.O. clock and chimes.
Special ocean forecast and weather report.
2 p.m.—Musical programme from the Studio.

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12.1 p.m.—Information. Made, shipping, and port directory.
 12.11 p.m.—Boats 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 fats and produce market report.
 12.22 p.m.—Furze 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.S. Gramophone recital.
 1.27 p.m.—Stock Exchange report.
 1.00 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.

Racing information broadcast immediately after each race by courtesy of the "Sun" Newspapers.
 2 p.m.—G.P.O. clock and chimes.
 Musical programme from the Studio.
 2.10 p.m.—News from the "Sun".
 2.20 p.m.—Pianoforte recital from Studio.
 2.30 p.m.—News from the "Sun".
 2.40 p.m.—Dunagwan Dance Band, broadcast from the Dunagwan Cabaret.
 4 p.m.—G.P.O. clock and chimes.
 News from the "Sun".
 4.1 p.m.—Musical programme from the Studio.
 4.15 p.m.—Talk on songs of the Orient of all ages.
 4.30 p.m.—Dunagwan Dance Band.
 4.50 p.m.—News from the "Sun".
 4.55 p.m.—Resume of night's programme.
 4.57 p.m.—Racing review.
 4.59 p.m.—Special ocean forecast.
 5 p.m.—G.P.O. clock and chimes.
 Close down.

EARLY EVENING SESSION.

8.45 p.m.—G.P.O. clock and chimes.
 Children's session. Uncle Jack and Uncle Bass will entertain the kiddies.
 SPECIAL CHURCH SESSION.
 9.30 p.m.—G.P.O. clock and chimes.
 Australian Maccanite, Land and Fijian Co's request.
 Weather report and forecast by courtesy of Government Meteorologist.
 Producers' Distributing Society's fruits and vegetable market report.
 Stock Exchange report.
 Grain and foodstuffs report ("Sun").
 Dairy produce report ("Sun").
 Weekly traffic bulletin.
 Talk about books.
 9.45 p.m.—Country news from the "Sun".
 9.50 p.m.—Helpful hints to listeners by Mr. Alan Bunney.
 7 p.m.—Musical recital by courtesy of His Master's Voice Gramophone Co.
 9.54 p.m.—Talk on the romantic lives of the world's greatest composers (by courtesy of Home Recreations).
 9 p.m.—G.P.O. clock and chimes.
 Entertainer "Tommy" Chorus.
 An hour's programme presented by Home Recreations, Limited.

8.2 p.m.—The Salsomela Dance Orchestra.
 8.13 p.m.—Miss Phyllis Atkinson, soprano.
 8.17 p.m.—The Salsomela Dance Orchestra.
 8.21 p.m.—Mr. Robert Turner, clarinetist.
 8.24 p.m.—The Salsomela Dance Orchestra.
 8.28 p.m.—Mr. Phil Mountain, light comedian.
 8.51 p.m.—The Salsomela Dance Orchestra.
 9 p.m.—G.P.O. clock and chimes.
 9.1 p.m.—Weather report and forecast by courtesy of Mr. C. J. Mars, Government Meteorologist.
 9.4 p.m.—The Murrickville Salvation Army Band (conductor, Mr. S. H. Knight) broadcast from Wyness Street, Murrickville.
 9.53 p.m.—Miss Phyllis Atkinson.
 9.58 p.m.—Mr. Robert Turner.

9.40 p.m.—The Murrickville Salvation Army Band.
 10 p.m.—G.P.O. clock and chimes.
 10.1 p.m.—Miss Phyllis Atkinson.
 10.13 p.m.—Mr. Phil Mountain.
 10.15 p.m.—Announcements.
 10.18 p.m.—Cyril Java and the Wentworth Cafe Orchestra broadcast from the ballroom of the Wentworth. During intervals between dances, "Sun" news will be broadcast.
 11.00 p.m.—G.P.O. clock and chimes.
 National Anthem.

3LO, MELBOURNE.

Thursday.

MORNING SESSION.

7.45 p.m.—"Herald" morning session.
 8.15 p.m.—Close down.

MIDDAY SESSION.

11.0 noon—Melbourne Observatory Time Signal; Metal Prices received by the Australian Mines and Metals Association from the London Stock Exchange (by Joe Reuter's and the Australian Press Association); British Official Wireless News from Rugby, News service.

12.30 p.m.—COMMUNITY SINGING IN THE STUDIO, (Conductor, Mr. G. J. MACKAY, assisted by THE STUDIO QUARTETTE, (Conductor, REGINALD BRADLEY.)

(Soloists):
 EILEEN CASTLES, Soprano:
 "Parson's Act" (Hess).
 "Land of the Leal" (Scott).
 DAVID GRAMAME, by permission of J. C. Williamson, Ltd.,
 "In Sheltered Vale" (F. Hainbert).
 "Whom My Ships Come Sailing Home" (F. Dorell).
 1.45 p.m.—(Meteorological Information):
 Weather Forecast and Rainfall for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports; Stock Exchange Information.
 2.0 p.m.—Close Down.

AFTERNOON SESSION.

2.0 p.m.—Melbourne Observatory Time Signal.
 2.1 p.m.—STUDIO QUARTETTE:
 "Plegria's Chorus" (Verdi).
 "Dust to Snow" (Lancé).
 2.10 p.m.—L. NOEL SMITH, Baritone (by permission J. C. Williamson, Ltd.):
 "Herman's Father's Song" (Cuthbert Barrie).
 "Annie's Good Bye" (Gardner).
 2.17 p.m.—BERTHA JORGENSEN, Violin,
 "Serenata" (Moszkowski).
 2.25 p.m.—STATION TRIO:
 "Salsomela Oriental Dance."
 2.30 p.m.—NELLIE JUDGES, Soprano (by permission J. C. Williamson, Ltd.):
 "The Greatest Wish in the World" (Del Hery).
 "Gamin' Thes' the Rev."
 2.40 p.m.—MR. CHARLES NUTTALL:
 "What is a Hero?"
 2.48 p.m.—STUDIO QUARTETTE, for strings
 "Avalon Song" (Rowland E. Reed, of Melbourne).
 First Public Performances.
 4.10 p.m.—L. NOEL SMITH, Baritone:
 "Tears of Glenora" (Graham).
 "Maudslayi" (Gold).
 4.17 p.m.—DOROTHY ROXBURGER, Viola:
 "Constellation" (Singer).
 "Sovener" (Halay).
 4.24 p.m.—NELLIE JUDGES, Soprano:
 "Song My Mother Taught Me" (Doverak).
 "Daffodil Gold" (Rodgson).
 4.30 p.m.—"Herald" News Service, Announcements.

4.45 p.m.—EVENING, transmitted from St. Paul's Cathedral.
 6.30 p.m.—Acceptances for Saturday's Race at EPHOR.
 Results of Races at Yarra Glen will be given as they come to hand.
 EVENING SESSION.

CHILDREN'S HOUR.

6.37 p.m.—Answers to letters and birthday greetings by "BILLY BUNNY".
 6.9 p.m.—HAROLD COLLIER will entertain the children on his Radio Organ.
 6.1 p.m.—MISS M. SHEPHERD:
 "Of the Bester Track."
 6.24 p.m.—HAROLD COLLIER.
 "South Ocean Melodies."
 6.30 p.m.—"BILLY BUNNY":
 "The Treasure Seekers are Still Searching."
 6.40 p.m.—Official Report of Newmarket Stock Sales by the Associated Stock and Station Agents, Bourke Street, Melbourne.
 6.45 p.m.—"Herald" News Service, Weather Synopsis; Shipping Movements.
 6.52 p.m.—Stock Exchange Information.
 6.57 p.m.—Fish Market Reports by J. K. Barrett, Ltd., Rabbit Price.
 6.59 p.m.—River Reports.
 7.2 p.m.—Market Reports by the Victorian Producers' Co-operative Co., Ltd.; Poultry, Grain, Hay, Straw, Jute, Dairy Products, Potatoes and Onions; Market Reports of Fruit by the Victorian Fruitcrucifer's Association, retail prices. Wholesale prices of Fruit by the Wholesale Fruit Merchants' Association, Citrus Fruits.
 7.30 p.m.—Market Reports by the Ballarat Stock and Station Agents.

NIGHT SESSION.

7.15 p.m.—MR. J. HOWLETT ROSS:
 "Appropriate thoughts for the season."
 7.30 p.m.—MR. H. A. BROWN:
 "A Christmas Home Gardener."
 7.45 p.m.—MISS ABLE CRANE, now appearing as Princess Margaret in "The Student Prince," at His Majesty's Theatre, will speak to you from her dressing-room in connection of J. C. Williamson, Ltd.
 8.0 p.m.—MR. ROD MCGREGOR:
 "Crickets."
 8.14 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 8.16 p.m.—EILEEN CASTLES, Soprano:
 "The French Partridge."
 8.27 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 8.30 p.m.—VAUDE AND VERNE:
 "Breezy Bill."
 8.39 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 8.45 p.m.—ERN. TROTSMAN, Entertainer:
 "Hilarious Humor."
 8.51 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 9.0 p.m.—GRACE JACKSON, Contralto:
 "The Kerry Dance."
 9.3 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 9.12 p.m.—EILEEN CASTLES, Soprano:
 "Maudslayi" (Gold).
 9.14 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 9.24 p.m.—VAUDE AND VERNE:
 "Comie Com'na."
 9.27 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 9.30 p.m.—ERN. TROTSMAN, Entertainer:
 "Hilarious Humor."
 9.55 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 9.58 p.m.—GRACE JACKSON, Contralto:
 "Kerlin Grove."
 9.51 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 10.0 p.m.—"New Service": British Official Wireless News from Rugby; Meteorological Information; Announcements; Sporting Notes by "Olympus"; Island Shipping Movements.
 "Are you teaching your children how to swim? It's up to you, and us up to them, so always bear in mind SAFETY FIRST."
 10.15 p.m.—JOE ARONSON AND HIS SYM-COPATING SYMPHONISTS.
 10.24 p.m.—EILEEN CASTLES, Soprano:
 "All in an April Evening" (Diack).

10.27 p.m.—JOE ARONSON AND HIS SYM-
COPATING SYMPHONISTS.

10.30 p.m.—VAUDE AND VERNE

"Humorous Interlude"

10.39 p.m.—JOE ARONSON AND HIS SYM-
COPATING SYMPHONISTS.

10.43 p.m.—ERN. TROTMAN, Entertainer.

Selected.

10.51 p.m.—JOE ARONSON AND HIS SYM-
COPATING SYMPHONISTS.

11.0 p.m.—OUR GREAT THOUGHT!

"Many a good intention dies from in-
attention, if a good intention is not put
into effect, we have lost an opportunity;
demoralised ourselves, and stolen from the
pile of possible good. To have a talent
and bury it, it to be a "wicked and stulti-
ciful amount."—Marius Balzac.

11.1 p.m.—JOE ARONSON AND HIS SYM-
COPATING SYMPHONISTS.

11.40 p.m.—GOD SAVE THE KING.

4QG, BRISBANE

Thursday

MIDDAY SESSION

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

1.20 p.m.—A Lunch Hour address.

1.50 p.m.—Standard time signal.

2 p.m.—Close down.

AFTERNOON SESSION

3.30 p.m.—A programme of music by the
Studio Orchestra.

4.15 p.m.—"The Telegraph" news.

EARLY EVENING SESSION

6 p.m.—"Daily Standard" (news), announce-
ments.

6.10 p.m.—Lecture: Nil.

6.50 p.m.—Bedtime Stories by "The Sand-
man."

7 p.m.—Market reports; Stock reports.

7.15 p.m.—Weather news; announcements;

"Daily Standard" news.

7.45 p.m.—Standard time signal.

7.45 p.m.—Weather Talk by Mr. Sigo Jones.

NIGHT SESSION

A complete programme by "The Troubad-
ours" (conductor, Mr. Ken Yorton).

PART I.

8 p.m.—FROM THE STUDIO—

Deutscher Chor.

"The Destruction of Gaza" (de Rille).

"The Troubadours.

Tenor solo: "Aria Maria" (Adams).

Mr. A. Smith.

Vocal Duet: "Army and Navy" (Cook).

Messrs. Kell and Pike.

March: "On the Curb" (Allen).

"The Troubadour Instrumental Quartette.

Piano-Song, "Down in the Depths" (Linder).

"The Troubadours.

Pianoforte solo: "Wedding Day" (Straig).

Miss Elsie Yorton.

Baritone solo: "Gallop by the Sea" (Rusell).

Mr. David Stevens.

Humorous Part Songs:

"Have Killed a Cat" (Kingsmill).

"The Troubadours.

Vocal: "Melodie from the Opera 'The
Count of Luxembourg' (Lehar).

"The Troubadour Instrumental Quartette.

Humorous Items; Selected.

Mr. E. Kenyon (the Entertainer).

Baritone solo: "The Bandoler" (Stuart).

Mr. H. Plover.

9 p.m.—Metropolitan Weather forecast.

9.1 p.m.—A Sea Chanty: "Eight Balls" (Ber-
thelot).

"The Troubadours.

Tenor solo: "Love is Waiting" (Sains).

Mr. C. T. Birkbeck.

Pianoforte solo: "Doux Arabesque" (Debus-
sily).

Miss Elsie Yorton.

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SUPER HETERODYNE

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an Igranic Super-Heterodyne enthusiast
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a wonderful success it is and what a
vast amount of pleasure it has given me
to date.

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market a really Super Set, and to
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great pleasure in picking up distant
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extraneous noises, you have supplied a
set which will be very hard to equal.

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short wave stations to be intercepted, the IGRANIC Short Wave Tuner, which covers
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moments to link up with the original set.

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Super-Het, and also the H.T. Eliminator, which I would never be without.
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BRISBANE Perry House HOBART 36 Argyle St.

and LAUNCESTON; also from J. R. W. Gardam, PERTH.

Plantation Melodist: "O Susanna" (Foster).

The Troubadours.

Mimes:

"Le Cirquantaire" (Gabriel-Marie).

The Troubadour Instrumental Quartette.

Vocal Duets: Selected.

Messrs. Kolb and Pike.

Haritage solo: "The Terrorist Song" (from the opera, "German") (Bisio).

Mr. Stanley Yorston.

Humorous Part Song:

"A Little Farm" (Hook).

The Troubadours.

Characteristics—"Change of the Hussars" (Spindler).

The Troubadour Instrumental Quartette.

Baritone solo:

"An Old Fashioned Town" (Squire).

Mr. P. Griffiths.

Humorous Item: Selected.

Mr. E. Bryson (The Entertainer).

Serenade: "Good-night" (Kettly).

The Troubadours.

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

10:45 a.m.—"Sydney Morning Herald" news service.

10:50 a.m.—Studio music.

10:55 a.m.—A reading.

10:55 a.m.—Studio music.

11 a.m.—"Big Ben," Studio music.

11:5 a.m.—A.P.A. and Reuter's Cable Service.

11:10 a.m.—Studio music.

11:15 a.m.—A talk on Home Cooking and Recipes by Miss Ruth Frost.

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.

12:30 p.m.—Summary of "Sydney Morning Herald" news service.

Rugby wireless track.

12:55 p.m.—Studio music.

12:40 p.m.—Arie Sedes, mezzo.

"Dancing Days," waltz song (Stanley Dickson).

12:50 p.m.—Studio music.

1 p.m.—"Big Ben," Weather Intelligence.

1:10 p.m.—"Evening News" midday news service.

Producers' Distributing Society's Report.

1:30 p.m.—Studio music.

1:35 p.m.—Stock Exchange, second call.

1:50 p.m.—Studio music.

1:40 p.m.—Arie Sedes, mezzo.

"Jack of Hadesland" (Sir Walter Scott).

1:45 p.m.—Studio music.

2 p.m.—"Big Ben," Close down.

AFTERNOON SESSION.

2:30 p.m.—"Big Ben" and announcements.

2:35 p.m.—Lionel Lunt, English baritone.

2:40 p.m.—The "Radio-Trial".

Leader, Mr. Ewart Chapple.

2:45 p.m.—Foss Brakill, contralto.

"Faint by the Clock" (Sanderson).

2:50 p.m.—Kathleen Horne, soprano.

"When Irish Eyes are Smiling" (Bell).

2:55 p.m.—The "Radio-Trial".

Leader, Mr. Ewart Chapple.

2:55 p.m.—Muriel Watt, contralto.

"Tired Hand" (Sanderson).

3:05 p.m.—Lionel Lunt, English baritone.

3:10 p.m.—Jeanette Ronney, contralto.

"The Silver Ring" (Chamblade).

3:15 p.m.—The "Radio-Trial".

Leader, Mr. Ewart Chapple.

3:25 p.m.—Foss Brakill, contralto.

"Quiet" (Sanderson).

4 p.m.—"Big Ben."

Kathleen Horne, soprano:

"Carol" (Freire).

4:4 p.m.—Muriel Watt, contralto.

"A little love nest lost for ever" (Lohr).

4:45 p.m.—The "Radio-Trial".

Leader, Mr. Ewart Chapple.

4:55 p.m.—Popular records.

4:55 p.m.—Jeanette Ronney, soprano:

"If in the Great Bazaar" (Amy Woodford Finkel).

4:59 p.m.—A pianoforte reproduction.

4:40 p.m.—Studio music.

4:45 p.m.—Stock Exchange, third call.

4:47 p.m.—Studio music.

5 p.m.—"Big Ben," Close down.

EARLY EVENING SESSION.

5:30 p.m.—The chimes of 2FC.

5:40 p.m.—The "Hello Man" talks to the children.

6:15 p.m.—A programme for the young folk, supplied by pupils of Madame Ada Baker.

6:40 p.m.—Studio music.

7 p.m.—"Big Ben."

7:15 p.m.—A programme news and racing information given by the J.P.C. Commissioner.

7:10 p.m.—Dalgety's market reports (wheat, wheat and stock).

7:15 p.m.—Fruit and vegetable markets.

7:20 p.m.—Weather and shipping news.

7:25 p.m.—"Evening News" late news service.

NIGHT SESSION.

7:35 p.m.—Programme announcements.

7:30 p.m.—"Let's go round the World," a talk by the Rev. F. H. Raward.

7:40 p.m.—Muriel O'Malley, contralto.

7:45 p.m.—An Irish Scotch comedian.

8 p.m.—"Big Ben."

From Her Majesty's Theatre, Sydney:

The first act of the Musical Comedy,

"WILDFLOWERS,"

featuring Marie Roubie and Herbert Browne (by permission of J. C. Williamson, Ltd.).

8:5 p.m.—From the Studio:

Latest weather forecast.

9:5 p.m.—Win and Windle, English entertainers.

8:14 p.m.—Muriel O'Malley, contralto.

9:25 p.m.—Ernest Gibb will tell the story of "The Keg of Brandy," by Guy de Maupassant.

9:33 p.m.—Lionel Lunt, English baritone.

9:41 p.m.—Lionel Lawson, violinist.

9:49 p.m.—Andrew Higginson and Ewald Lavin, entertainers:

(a) "Fatey."

(b) "Butcher Days" (Wimperley).

(c) "I heard you singing" (Erick Costel).

9:58 p.m.—Selwyn Seymour, elocutionist:

"Christmas Day in the Workhouse" (G. R. Sims).

10:4 p.m.—Lionel Lunt, baritone.

10:16 p.m.—Ad Croe, Scotch comedian.

10:24 p.m.—Lionel Lawson, violinist.

10:32 p.m.—Latest weather forecast.

10:38 p.m.—Win and Windle, English entertainers.

10:49 p.m.—Selwyn Seymour, English elocutionist:

"The Dare Devil" (Angela Allen).

10:50 p.m.—Andrew Higginson and Ewald Lavin, entertainers:

(a) "Fatey."

(b) "The Only Thing a Woman is Afraid Of" (Walsh and Watson).

(c) "The Little Old Garden" (Thomas Jewitt).

10:57 p.m.—Late news and announcements.

11 p.m.—"Big Ben."

National Anthem.

Close down.

3LO, MELBOURNE.

Friday

MORNING SESSION.

7:15 a.m.—"Herald" morning service.

8:15 a.m.—Close down.

MIDDAY SESSION.

11:30 a.m.—Description of Interstate Cricket, Victoria v. South Australia, at M.C.C., by Mr. Rod McGregor.

12 noon—Melbourne Observatory time signal.

12:1 p.m.—Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day.

Reuter's and the Australian Press Association cables. British official wireless news from Burley, Argon, news service.

12:20 p.m.—STUDIO QUARTETTE:

"The Beauty Parade" (Schad).

"Happy Hectic Hours" (Schad).

12:30 p.m.—ERN. TROTMAN, entertainer:

"Oh, list to me!"

12:37 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. South Australia, at M.C.C., by Mr. Rod McGregor.

12:55 p.m.—STUDIO QUARTETTE:

"Two in a Bar—a Musical Cocktail, Mixed by Copplin, denatured by (Sanders).

"Good night" (Haynes).

12 p.m.—VAUDE AND VERNE entertainers:

"High Jinks."

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7ZL, HOBART

Thursday.

MORNING SESSION.

11 a.m. to 12 noon.

AFTERNOON SESSION.

2 p.m.—G.P.O. Clock chimes the hour.

3:1 p.m.—Piano in selection.

3:5 p.m.—Hobart Stock Exchange quotations.

Weather information.

Items of interest—Announcements.

3:10 p.m.—Selections by 7ZL-Studio Trio:

"Early Eve" (Finck).

"Valse Lent" (Heister).

Selection: "Sunny" (Kara).

Suite: Intermezzo (Raus).

Valse: "Sweet Prison" (Humbert).

Tango: "Gaucho" (Koblers).

Vocal solo: Selected (Mr. E. J. McCann).

4:15 p.m.—Chat by Child Welfare Nurse.

4:30 p.m.—Close Down.

EARLY EVENING SESSION.

6:30 p.m.—Children's Corner by "Uncle H-tar."

7 p.m.—"Uncle Petrus" half hour.

NIGHT SESSION.

7:30 p.m.—Musical selection.

7:35 p.m.—Talk on Tasmania's Beauty Spots by Mr. E. T. Emmott, "Pam Autbus and Tasmania's Peninsula".

7:55 p.m.—"Mercury" special Tasmanian news service.

Railway auction produce sales.

Weather forecasts.

Hobart Stock Exchange quotations.

8 p.m.—P.G.O. Clock chimes the hour.

8:1 p.m.—Selections by Jones L.X.L. Band (Conductor Mr. Charles Guldard).

8:40 p.m.—British Official wireless news.

8:50 p.m.—"Mercury" special Interstate news service. Ships within wireless range Tasmania District Weather report.

Station announcements—To-morrow's programme.

National Anthem.

Friday, Dec. 30 2FC, SYDNEY.

EARLY MORNING SESSION.

7 a.m. to 8 a.m.

MORNING SESSION.

10 a.m.—"Big Ben" and announcements.

10:5 a.m.—Studio music.

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

1.18 p.m.—STUDIO QUARTETTE:

"The Brocaded Petticoat."

1.20 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. South Australia, at M.C.G., by Mr. Rod McGregor.

1.23 p.m.—THE PREMIER FOUR (by kind permission of J. C. Williamson, Ltd.):

"Melodians in the Wood" (Götz);

"Sweet and Low" (Hornaby);

1.40 p.m.—STUDIO QUARTETTE:

"See Molley's Songs."

1.45 p.m.—ERN. TROTMAN, entertainer:

"Chuckle."

1.52 p.m.—THE PREMIER FOUR:

"I'd like to go down south once more" (Blake).

"Ukulele Dream Man" (Sterling).

2 p.m.—Close down.

2.15 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. South Australia, at M.C.G., by Mr. Rod McGregor.

2.30 p.m.—Close down.

2.50 p.m.—Description of INTERSTATE CRICKET MATCH, Victoria v. South Australia, at M.C.G., by Mr. Rod McGregor.

AFTERNOON SESSION.

3 p.m.—Melbourne Observatory time signal.

3.1 p.m.—STUDIO QUARTETTE:

"Sounds from Italy."

3.18 p.m.—MRS. EILEEN FRASER:

"Ring Out the Old, Ring in the New."

3.25 p.m.—EILEEN CASTLES, soprano:

"On Wings of Song" (Mendelssohn);

"Like the Rosebud" (La Farge);

3.32 p.m.—STUDIO QUARTETTE:

"Sole Tracina" (Part 1 (F. Hoase)).

3.39 p.m.—ALBERT CARLISLE, tenor (by permission J. C. Williamson, Ltd.):

"A Love Nest Just for Two" (Lohr);

"Angels Gazed Them" (Godard);

3.45 p.m.—STUDIO QUARTETTE:

"Sole Tracina" (Part 2 (F. Hoase)).

3.52 p.m.—Description of interstate cricket match, Victoria v. South Australia, at M.C.G., by Mr. Rod McGregor.

4 p.m.—EILEEN CASTLES, soprano:

"Où La Vies" (Bollin);

"Such a Lil' Fellow" (Dichmont);

4.1 p.m.—STUDIO QUARTETTE:

"Suite Francaise" (Foulds);

4.14 p.m.—ALBERT CARLISLE, tenor:

"Queen of Sheba" (Rigoletto);

"Rosebud" (Drummond);

4.21 p.m.—MRS. M. CALLAWAY MARGOD:

"The Study and Use of Colors" "Green."

4.45 p.m.—"Herald" news service.

5 p.m.—Description of interstate cricket match, Victoria v. South Australia, at M.C.G., by Mr. Rod McGregor.

5.15 p.m.—Close down.

EVENING SESSION.

5.30 p.m.—Answers to letters and Birthday greetings by "BILLY BUNNY."

5.50 p.m.—MR. ROD MCGREGOR will give a description of the final of to-day's interstate cricket match, Victoria v. South Australia, at M.C.G.

6 p.m.—"BILLY BUNNY" will continue the greetings.

6.10 p.m.—JESSIE SHMITH, contralto:

"Babe o' Mine" (J. Shmidt);

"Baby" (Bertrand Browne);

6.17 p.m.—CAPTAIN DONALD MACLEAN:

"A Tale of the Skull and Cross Bones."

6.22 p.m.—JESSIE SHMITH, contralto:

Songs for the children.

6.40 p.m.—Official report of Newmarket Stock Sale by the Associated Stock and Station Agents, Bourke street, Melbourne.

6.45 p.m.—"Herald" news service. Weather forecasts. Shipping movements.

6.50 p.m.—Stock exchange information.

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

6.59 p.m.—River reports.

7.2 p.m.—Market reports by the Victorian Producers' Co-operative Co. Ltd. Poultry, grain, hay, straw, jute, dairy produce, potatoes and onions. Market reports of fruit by the Victorian Producers' Association. Retail prices. Wholesale prices of fruit by the Wholesale Fruit Merchants' Association. Citrus fruits.

NIGHT SESSION.

7.15 p.m.—Euphonic Surfers Social: Programme of specially selected items. March: "The Nut Grove."

7.20 p.m.—"COLLINGWOOD CITIZENS" BAND:

Fun Trif. "At Sundown."

7.40 p.m.—ERN. TROTMAN, entertainer:

"The Waiter" (La Bruin);

7.47 p.m.—MR. H. K. LOVE:

"Technicalities."

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

7.57 p.m.—"COLLINGWOOD CITIZENS" BAND:

Selection: "The Miracle."

8.7 p.m.—ERN. TROTMAN, entertainer:

"Song Writing" (C. Grey);

8.14 p.m.—GRESTI GEORGIO MANZONI, mandolinist:

Solo: "The Storm"—unaccompanied (Clock-son).

8.21 p.m.—SOUTHERN CHORAL SOCIETY—

Planiate, Miss Olive McKillop.

Choir: "The Balls of St. Mary's" (Adams).

"Just a Cottage Song" (Hasty);

8.28 p.m.—"COLLINGWOOD CITIZENS" BAND:

Coronet solo: "Beacon."

8.35 p.m.—Side-light on Evening Newspaper Production by GEORGE TAYLOR, News Editor of the "Herald":

"The Handling and Distribution of News."

8.50 p.m.—GRESTI GEORGIO MANZONI, Mandolinist:

Solo, "Mettino" (arr. G. G. Manzoni);

8.57 p.m.—Announcements.

Did you write or wire to the Old Folks at Home for Christmas? They will be thinking of you. How about sending them greetings for the New Year? Do you remember Lee White singing, "He's Coming Home."

8.4 p.m.—EILEEN CASTLES, soprano:

"Tenniss Ty" (Thomas);

"His Little Teddy Bear" (Thomas);

9.11 p.m.—VAUDE AND VERNE:

"Bright Bits."

9.21 p.m.—"COLLINGWOOD CITIZENS" BAND:

Interim: "After Sunset."

9.28 p.m.—MR. AND MRS. GRAHAM BURGIN:

Duets: "In the Garden of My Heart" (Hall);

"The Voyagers" (Sanderson);

9.35 p.m.—"COLLINGWOOD CITIZENS" BAND:

Waltz: "Fond Memories."

9.42 p.m.—ERN. TROTMAN, entertainer:

Selected.

9.50 p.m.—"DONCASTER" (Mr. Frank Dexter), of the "Argus" will speak on to-morrow's races at Epsom.

10 p.m.—EILEEN CASTLES, soprano:

"Still at the Night" (Lohr);

"Serenade de Gullolin" (Gottlieb);

10.7 p.m.—"COLLINGWOOD CITIZENS" BAND:

Trumpet solo: "The Trumpeter."

10.15 p.m.—"Argus" news service. Meteorological information. Road Notes.

10.20 p.m.—GRAHAM BURGIN, baritone:

"Love Lily."

"Lighterman Tom" (Souter);

10.24 p.m.—"COLLINGWOOD CITIZENS" BAND:

March: "Port Lincoln."

10.55 p.m.—SOUTHERN CHORAL SOCIETY with lead accompaniment by the Collingwood Citizens' Band:

"Peace Come Away" (Stanford);

"The Gloria" (Mozart).



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10.13 p.m.—British official wireless news from Rugby. Announcements Island Concert movements.

10.50 p.m.—JOE ARONSON AND HIS SYNCO-PATENT SYMPHONISTS.
"Are You Happy" (Challen).
"Be Still" (De Sylva).
"The Spring Just Ritz and Thinks and Thinks" (Friend).

11 p.m.—OUR GREAT THOUGHT!
"Whatever the past year may have meant to you, make it dead history. But let the New Year be a bright page. Enter the year with a bright thought for everyone. You need but kiss the hand that moves you, but grasp it in surly feeling, and then will you and yours be happy."

11.3 p.m.—JOE ARONSON AND HIS SYNCO-PATENT SYMPHONISTS.
11.40 p.m.—GOD SAVE THE KING

Saturday, Dec. 31

2FC, SYDNEY

EARLY EVENING SESSION.

7 p.m. to 8 p.m.

MORNING SESSION.

10 a.m.—"The Box" and announcements.
10.15 a.m.—Studio music.
10.45 a.m.—"Radio-Maxing Herald" news service.

11.0 a.m.—Studio music.
11.10 a.m.—Back by the 2FC Racing Commission.

11.40 a.m.—Studio music.
11 a.m.—"The Box."

A.P.A. and Reader's Cable Service.
12 a.m.—"The Box" on Gaiety, by Mr. G. J. Lowery (Rugby), until 11.30 a.m.

MIDDAY AND AFTERNOON SESSIONS.

12.30 a.m.—From the Sydney Cricket Ground: A complete description of the play. New South Wales versus Queensland, Cricket match.

12 noon—"Big Ben" and announcements.
12.15 p.m.—"Radio Exchange" first call.
12.3 p.m.—Studio music.

12.30 p.m.—"Radio-Maxing Herald" news service.

12.45 p.m.—Rugby wireless news.

NOTE: Events of the A.J.C. Meeting at Randwick will be described throughout the day by the 2FC Racing Commissioner.

Cricket news will be described of the play until the moment of dismissal at 1.15 p.m.

1.15 p.m.—Weather intelligence.
1.45 p.m.—"Evening News" military news service.

1.50 p.m.—Studio music, interspersed with news dispatches and results.

2 p.m.—From the Sydney Cricket Ground: Further descriptions of the Cricket match. New South Wales versus Queensland.

Darling Harbour and Central Interests the following Musical Items will be given: From the Grand Palace Theatre, George Street, Sydney:

Orchestral items, under the baton of Mr. Harry Cross.

From the Studio:
Evening Racing and Cricket Interests:
Harry White, vocal; pianist.

Louise Lamb, English baritone.
Sid Montague and Cliff Arnold, instrumentalists.

(a) "Everything's made for love" (Tobias and Sherman).
(b) "Red Lip—like my blue away" (Bryan and Wendler).

(c) "Sirs'ns' Round" (Wendell Hall).
(d) "All I Want to Do" (Donaldson).
(e) "If I Get a Sweetie Now" (Smalley and Williams).
(f) "Ain't no mad in"

4.30 p.m.—Sporting returns.
Cricket scores and description of play until 5.40 p.m.

EARLY EVENING SESSION.

5.40 p.m.—The chimes of 2FC.
5.45 p.m.—The "Hello Man" talks to the children.

6.00 p.m.—Stories time for the young folk.
6.40 p.m.—Studio music.

7 p.m.—"Big Ben." Weather intelligence.
7.15 p.m.—Late sporting news.

7.40 p.m.—"Evening News" late news service.
7.52 p.m.—Studio music.

NIGHT SESSION.

8.40 p.m.—Programme announcements.
8.45 p.m.—2FC Studio Band.

Following the practice of previous years, 2FC's principal artists will assemble in the Studio and provide an all-star programme.

8.50 p.m.—R. A. Harrison, baritone.
8.55 p.m.—Ed. Harman, (Bardonia).

7.50 p.m.—Madame Evelyn Green:
Pianoforte solo.

8 a.m.—Aired Cunningham, baritone:
"Chorus Gentlemen" (Lohr).

8.5 p.m.—Win and Windie, English entertainers.
8.10 a.m.—Eile Pearce, soprano:
"Spring is Here" (DeGuzman).

8.15 p.m.—Lionel Lawson, violinist.
8.20 p.m.—Raymond Ellis, English operatic baritone.

8.25 p.m.—Paul Alexander.
8.30 p.m.—Madame Lillian Gibson, contralto.

8.35 p.m.—Cyril Monk, violinist.
8.40 p.m.—Oleifer King, basso.

8.45 p.m.—"Come let's be merry" (Wilson).
8.50 p.m.—Rex Gardner.

8.55 p.m.—Rilow Boyd, contralto:
"Heart" (Widley).
9 p.m.—Herbert Gibb, violinist:
"Mistletoe Wanderings" (Butcherford).

9 p.m.—"Big Ben." Late weather forecast.
Lindsay Green, pianoforte solo.

9.5 p.m.—James Brash, and Alva Prosser, soprano:
"Open thy blue eyes" (Massenet, arr. Brash).

9.10 p.m.—Alexander Sverlopin, pianoforte solo:
"In Autumn" (Mushkowski).

9.15 p.m.—James Donnelly, tenor.
9.20 p.m.—H. W. Varty.

9.25 p.m.—Louise Humphrey, lady baritone:
"Thanks very much" (Bal Parer).

9.30 p.m.—Mabel Mitchell, soprano:
"Muzak's Will Song" (Freed).

9.35 p.m.—Mungomery Stuart, alto-contralto.
9.40 p.m.—Gwen Selva, soprano:
"The Siren Song" (Arditt).

9.45 p.m.—Wally Baynes, conductor.
9.50 p.m.—Ernest Archer, tenor.

9.55 p.m.—Walter Thomas, basso.
10 p.m.—Carlton Fay, pianoforte solo:
"Impromptu in A Flat, Opus 142" (Schubert).

10.5 p.m.—Virginia Russell, contralto.
10.10 p.m.—John Rorie, (Rock).

10.15 p.m.—Shelby Cook, pianoforte.
10.20 p.m.—Charles Lawrence, entertainer.

10.25 p.m.—Erlid D'Arcy, soprano:
"Annie Laurie" (Lithmann).

10.30 p.m.—Lena Manning, vocal baritone.
10.35 p.m.—Late weather forecast.

Penny Dunbar, contralto.
10.40 p.m.—Harry White, novelty pianist.

10.45 p.m.—Ad Cree, Scottish comedian.
10.50 p.m.—John Van der Meer, ballad solo.

10.55 p.m.—Gladys Finlay, soprano:
"Who is Sylvia."
10.55 a.m.—(See Motion conducting the 2FC Studio Dance Band in popular numbers until 11.15 p.m.)

11.30 p.m.—From the Lyceum Hall, Pitt Street, Sydney:
Rev. F. H. Howard will conduct a Watch-night Service.

12 midnight—"Big Ben."
From the Studio:
New Year Greetings from 2FC.
12.5 a.m.—National Anthem.
Close down.

3LO, MELBOURNE.

Saturday.

MORNING SESSION.

1.15 a.m.—Harold Morning Session.
2.15 a.m.—Close down.

MIDDAY SESSION.

11 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"Mozart Waters" (Friend).
"Extrading" (Feather) (Gosnell).
"Mamma's Gone Young, Papa's Gone Old" (Lohr).

11.45 a.m.—Description of Interstate Cricket Victoria against South Australia at the M.C.G. by Mr. Red McGregor.

11.49 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"Flagstones," piano solo (Ormer).
"At Sun-down" (Donaldson).

11.55 a.m.—FRAN TROTMAN, Entertainer:
"The Old Father's Song" (Smith).

11.55 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"The Whole World is Laughing at Me" (Grandon).

"Waiting in Love with You" (Myer).
"White-Yar Blue Away" (Myer).

12.45 p.m.—EILEEN CASTLES, soprano:
"Deep River" "The Me O'Lord" Negro Spiritual, (Barthany).

12.51 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"Deed I Do" (Hirsch).

"Hale Swaine, Boy" (Gladon).
"She Knows Her Owns" (Yellen).

12 noon—Melbourne Observatory Time Signal.
"Are you one of the heedless, foolish ones who cross the street against the traffic signals. Resolve with the New Year to set a good example. Think of the indignity of being a bedraggled corpse in the Remembrance always-Safety First."

12.1 p.m.—Metal prices received by the Australian Mines and Metals Association from the London Stock Exchange this day.

British Official Wireless News from Rugby, Sydney, and the Australian Press Association Cables, News service.

12.30 p.m.—STUDIO QUARTETTE:
"Tanny Ray."

12.35 p.m.—NORL SMITH, baritone (by permission J. C. Williamson Ltd.):
"Shipments of Mine" (Henderson).

"A Deceitful Wedding" (Lord Phillips).
12.40 p.m.—Description of Interstate Cricket Match, Victoria vs. South Australia, at M.C.G. by Mr. Red McGregor.

12.45 p.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"Hemlock Song" (Leslie).

"Classical—Piano solo" (Langer).
"I Love the College Girl" (Jaffa).

12.51 p.m.—EILEEN CASTLES, soprano:
"Meeting of the Waters" (Irish).
"Butterfly" (Clozier).

12.55 p.m.—STUDIO QUARTETTE:
"Songs of the Hanging" (France).

1.10 a.m.—JOE ARONSON AND HIS SYNCO-SYMPHONISTS:
"The Little White House in Honeymoon Lane" (Downing).

"Ain't Got Nobody and Nobody Cares for Me" (Grisham).
"I'm Going to Dance with the Guy Who Beams Me" (Krester).

Look up and not down; look forward and not back; look out and not in; lead a hand. Are you doing your bit in making this world brighter and better?

1.15 p.m.—L. J. SMITH, baritone:
"I Dream of a Garden of Sunshine" (Herman Lohr).

"Star of the South" (Herman Lohr).
1.25 p.m.—Meteorological information: West-ner forecast and rainfall for Victoria, Tasmania, South Australia and New South Wales. Ocean forecasts: River reports.

1.31 p.m.—Description of Interstate Cricket Match, Victoria vs. South Australia at M.C.G. by MR. MCGREGOR.

1.41 p.m.—STUDIO QUARTETTE:
"Klop Manfried"—Pepiade and Banquet (Rienicke).

- 1.48 p.m.—STUDIO QUARTETTE:
"The Old Times" (Troland).
1.52 p.m.—VAUDE AU SYRNEP:
"Jazz Jokes."
2.10 p.m.—Description of Open Handicap (6
furlongs), EPSON RACES, by "Masket,"
of the Sporting Globe.
2.15 p.m.—Description of Interstate Cricket
Match, Victoria v. South Australia at
M.C.G. by MR. ROD MCGREGOR.
2.19 p.m.—Description of Epsom Plate, 2 fur-
longs, EPSON RACES, by "Masket," of
the Sporting Globe.
2.24 p.m.—Description of Interstate cricket
Match, Victoria v. South Australia at M.C.G.
by MR. ROD MCGREGOR.
2.28 p.m.—Results of Tary Club races will
be given as they come to hand.

AFTERNOON SESSION.

- 3 p.m.—Melbourne Observers' Time signal.
3.1 p.m.—JOHNSON'S STUDIO BOYS:
Selections from Comic Opera.
3.18 p.m.—Description of Handicap Hush
Steeple, 3 miles 15 chains, EPSON RACES,
by "Masket" of the Sporting Globe.
3.19 p.m.—Description of Interstate Cricket
Match, Victoria v. South Australia, at
M.C.G., by MR. ROD MCGREGOR.
FROM THE STUDIO.
3.23 p.m.—JOHNSON'S STUDIO BOYS:
Selections from Comic Opera.
3.46 p.m.—Description of Epsom Handicap, 1
mile, EPSON RACES, by "Masket" of the
Sporting Globe.
3.49 p.m.—Description of Interstate Cricket
Match, Victoria v. South Australia, at
M.C.G. by Mr. Rod McGregor.
3.53 p.m.—JOHNSON'S STUDIO BOYS:
More Selections from Comic Opera.
4.10 p.m.—Description of Epsom Purse, 2 fur-
longs, EPSON RACES, by "Masket" of the
Sporting Globe.
4.15 p.m.—JOHNSON'S STUDIO BOYS:
Selections from Comic Opera.
4.20 p.m.—Description of Interstate Cricket
Match, Victoria v. South Australia, at
M.C.G. by Mr. Rod McGregor.
4.40 p.m.—Description of Welter Handicap, 1
mile, EPSON RACES, by "Masket" of the
Sporting Globe.
4.43 p.m.—JOHNSON'S STUDIO BOYS:
Selections from Comic Opera.
4.45 p.m.—Description of Interstate Cricket
Match, Victoria v. South Australia, at
M.C.G. by Mr. Rod McGregor.
4.53 p.m.—Close of day.

EVENING SESSION.

- 5.20 p.m.—Sporting results.
6.40 p.m.—Answers to letters and birthday
greetings by "LITTLE MISS KOOKA-
BUBBA."
6.50 p.m.—Description of Finale of today's
Interstate Cricket Match, Victoria v. South
Australia, by Mr. Rod McGregor.
6 p.m.—"LITTLE MISS KOOKABURRA"
"More Greetings."
6.10 p.m.—THE STUDIO QUARTETTE:
"The Warrior Returns" (Korban).
6.15 p.m.—"LITTLE MISS KOOKABURRA"
"The Pincer Patrol."
6.20 p.m.—THE STUDIO QUARTETTE:
"An Old, Old Love Story" (Frasno).
6.25 p.m.—"LITTLE MISS KOOKABURRA"
"The Pincer Patrol."
6.40 p.m.—Sporting results.
6.43 p.m.—Harald's news service—Weather
conditions, shipping movements.
6.45 p.m.—Stock Exchange information.
6.57 p.m.—River reports.
NIGHT SESSION.
7.15 p.m.—MR. E. J. A. BARNARD, of the
Melbourne University, will speak on
"Comets."
7.30 p.m.—MR. E. E. PEACOTT:
"Australian Food Plants of the Aborigines."
7.45 p.m.—MR. A. R. G. BAKER, Pictorial
Editor of the Herald, will speak on—
"The Pictorial Side of Newspaper work."
7.55 p.m.—Results of Royal St. Kilda Yacht
Club races.
8 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS:
"International Patrol" (Palla).
"Sing me a Ballad song" (Kahn).
"Hues and Hues" (Alder).
9.9 p.m.—Eileen Castles, soprano:
"A Little Love Serenade" (Ponchi).
9.12 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS:
"South Wind" (De Sylva).
"Black Bottom's Got 'Em" (Jobey).

- "He Ain't Depend on You" (Henderson).
9.21 p.m.—ERN TROTMAN, Entertainer:
"Bright Rita."
9.24 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS:
"Just an Ivy Covered Shack" (Brow).
"Does It Do" (Hitch).
"Sweet Yacht" (Davis).
9.32 p.m.—VAUDE AND VERNE, Entertainer:
"Comic Gags."
9.35 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS:
"Hold Everything" (Schelch).
"She's Got 'Em" (Walsell).
"She's Got 'Em" (Walsell).
9.45 p.m.—FRENCH BROS., Banjoists:
"Forgotten."
9.49 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.57 p.m.—J. ALEXANDER BROWNE, bar-
itone:
"Molly Brantley" (Stanford).
9 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.6 p.m.—EILEEN CASTLES, soprano:
"Flanagan's Night Out and the Morning
After" (Aron).
9.9 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.10 p.m.—VAUDE AND VERNE, Entertainer:
"Wanderville Vagabond."
9.12 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.13 p.m.—FRENCH BROS., Banjoists:
"Green & Lullaby."
9.15 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.17 p.m.—J. ALEXANDER BROWNE, bar-
itone:
"The Farmer's Fiddle" (E. Russell).
9.19 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.21 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.22 p.m.—EILEEN CASTLES, Soprano:
"Milk's Ark" (Ponchi).
9.23 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.24 p.m.—ERN TROTMAN, Entertainer:
"A Discourse on Rays" (Original).
9.25 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.26 p.m.—VAUDE AND VERNE, Entertainer:
"Cakelon."
9.27 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.28 p.m.—OUR GREAT TROUGHT:
"The old year is dead, the new year will
soon be born. Let us rejoice that we are
not dead one more New Year's Day or
which to begin again—not in our childish
way, with utter disregard of the past, but
thoughtfully, patiently, knowing that we
must ever start with by our past, and
realizing that, with God's help, we may
make the future better because of the
past."
9.31 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.32 p.m.—FRENCH BROS., Banjoists:
"Hawtorn Melodist."
9.33 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.34 p.m.—J. ALEXANDER BROWNE,
baritone:
"A Tremble Down South by the Sea"
(MacKenzie).
9.35 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.41 p.m.—EILEEN CASTLES, soprano:
"A Little Love Serenade" (Ponchi).
9.42 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
9.43 p.m.—ERN TROTMAN, baritone:
"Merry and Bright."
9.47 p.m.—JOE ARONSON AND HIS SYN-
COPATING SYMPHONISTS.
12 midnight.—The Bell of St. Paul's Cathedral
will ring the New Year in
St. Melbourne's New Year Message to all
Listeners.
GOD SAVE THE KING.

Resin Cored Solder

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All Readers' Queries Answered Here.

G.S. (CESENOCK)—The Gomez Super Reiter receiver is not suitable for a portable set, as this receiver must make use of the special loop described. The loop would be altogether too cumbersome for portable work. To many readers it is a B battery stimulator will produce a dreadful hum.

W.L.M. (NEWCASTLE)—The original circuit I sent you is preferable to the altered circuit. The potentiometer which you have incorporated will make no difference, as the radio frequency coupling is by means of a transformer, and not tuned coils. Only two variable condensers are required, and both should be 5005 mfd. A stage of radio frequency is a decided acquisition.

H.E. (ANNANDALE)—By all means use relay valves, the chassis will require no separation.

J.R.W. (BONDI)—A B to I transformer will be quite alright, but I would take the aerial diagonally across, for parallel work. The battery switch is nearest to the A positive lead. From the A positive terminal take a wire from one side of the battery switch, the other side of which connects to the common lead between the two diodes and the Amperite.

L.W. (BURWOOD)—I am afraid that I can't help you without actually seeing your receiver. Considerable work was done, and between the two of us, I am certain, you will rectify the trouble. Try by-passing the radio frequency energy across the primary of one or both of the transformers.

M.W. (MADLEY)—I shouldn't go any further in experimenting with Lecher wire cells for a battery with an induction coil, because these cells produce well over 1000 volts. Try generous dimming, such as the Amplan Carbonen.

A.O.D. (SEMMER BILI)—It is not wise to run four valves off one cell, as a A battery, and always remember that a cheap speaker can only be cheap because of its unsuitability, and therefore must be a reason for it. The F.M.I. H.F. and detector, and the P.M.P. will make a good combination for the Marco Four, but remember to increase your detector voltage between 30 and 60 volts, and your radio and audio voltage to 40.

J.C.C. (EDENHOPE)—A receiver incorporating this system will shortly be described in "Wireless Weekly".

G.G. (WOOLLOOMOOLOO)—Your diat is notorious for bad reception. I have had experience myself with different receivers, and the only one that has proved of all satisfactory, was the five valve superdye.

A.E. (MASCOT)—Try altering the spacing of your audio transformers and test carefully to see that the primaries are not broken down. Reverse the connections of your carbonyl detector, and make several adjustments to the B battery in order that you have your valve functioning on the correct part of this curve.

V.H.P. (ROSE BAY)—Your best plan would be to run your receiver into a radio dealer, who would test it under actual receiving conditions, and advise you where your trouble lies. There are so many things that may be wrong that it is always wise to get somebody more experienced to look at the actual receiver.

E.L. (LOWER SOUTHGATE)—The addition of a small variometer and the potentiometer in a superdye, is often an advantage, as it gives a certain amount of selection. Instead of joining the plate of the detector valve direct to the grid of the first audio transformer, join the plate to one connection of a variometer, the other connection, connect to T of the audio transformer. Connect the two outside terminals of the potentiometer to the A negative and A positive respectively, and remove the grid returns of the two audio valves from the A positive as they are in (insert) the potentiometer, to the centre terminal of the potentiometer. The potentiometer does control effectively the bias on the radio frequency valve, and the vario-

meter when used judiciously, gives reaction. I cannot send you the several circuits you seek. If your superdye is properly built, you should have no trouble with interference. T.W. (HURWOOD) For "Radio" for you, for an article entitled "A Drop in the Ether"; this effectively explains the situation when you are experiencing at night time.

R.P. (MINTO)—In "Wireless Weekly" 2812 it there is a long article describing how to add 1, 2 and 3 stages of audio frequency amplification to any receiver.

J.H.C. (BERBERANE)—See "Wireless Weekly" 2814/22.

D.M.C. (ASHFIELD)—See "Radio" for July.

L.H. (PARRAMATTA)—I don't know this particular battery.

H.S. (HUNTERS HILL)—Do not earth your batteries, and everything will be alright.

M.P.H. (UNDERCLIFFE)—Try these values:—Purchase any standard

J.A.T. (SUNLEY)—Build the superdye. Neutroformers are wound with 65 turns of sap. No. 14 D.S.C. wire, on a 1/8" former, tapered at the top from the bottom. The primary consists of 5 to 12 turns of the same gauge wire and a 2 1/2" former fitted into the secondary former, at the filament end. 250 ohm rheostat will control the valves you mention, who not use A.G.E. valves in the radio frequency stage, and also the detector stage. The loop can be immersed to a point, by means of a double pole, double throw switch.

G.H. (FURSTVILLE)—It is always standard practice to put the 5 to 1 ratio transformer in the first stage, with the 1/2 to 1 in the second stage, as it eliminates distortion. Band capacity is greatly lowered by connecting the band plates of the variable condenser to the grid condenser of the detector stage.

W.R. (BANKSTOWN)—This stimulator is suitable for the valves you mention.

T.W.E.B. (BONDI)—Before connecting the leads to your battery immerse the output leads in a glass of water, after the receiver is on. It will be found that both leads bubble slightly, one more than the other. This has been mentioned in the article. Now raise and lower the aluminium, until the greatest interference is obtained, and connect up to your battery; you will find your troubles will disappear.

H.C. (McLEAN)—The valves you mention should be quite suitable.

R.C. (COOLAH)—Consult Mr. R. W. Paterson, 99 Pitt Street, Sydney.

A.V. (McMAHON'S PT.)—Mullard P.M. valves are to be compared with any other valve for good results. They have the advantage of containing only 1 of an amp. against 2 1/2 of an amp. of other valves, thereby saving the life of the accumulator. Provided you substitute valves of the same voltage as at present use, it will not be necessary to replace all five at once.

A.W.C. (WILLOUGHBY)—With a .001 condenser use 30 turns in the secondary coil.

R.O.B. (COGNAMBLE)—No.

H.B. (GASTBURST)—The three valve receiver should suit you nicely, but I will not say that it will give daylight reception; the other receiver you mention would be too expensive for you, as the price mentioned, that of 22/10/1, for the receiver only, without the accessories, which, at least, would cost you another 2/0.

R.R. (TEMPE)—Get some more experienced friend to look at your receiver. I live within a stone's throw of you, and in this location was the original receiver. Best.

H.E. (BENBURY)—The subject will be dealt with in "Radio" in the January issue.

H.J. (STANMORE)—You should use a saturated solution of sal-ammoniac, and a squirt of thin oil on the top of each cell, will prevent creeping.

D.H.S. (GIGANDRA)—Q: I have a Stewart Warner 5 valve radio set with 4 volt B battery and the ordinary B battery. There is no provision in the set for a C battery, and I have heard that a C battery improves the reception of stations. Would it be a simple matter to add a C battery, and how would it be connected up?

A: Unless you have had some slight experience in building a wireless receiver, I would hardly advise you to tackle this job yourself, still if you care to do so, get inside your set and disconnect the wire which is joined from the A negative to the F of both audio transformers. Now join the F terminal of each transformer together and wire it to the C negative terminal on the grid line battery. Complete the circuit by joining the C positive to the A negative terminal.



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On page 5 of "Wireless Weekly" of December 2nd, reference was made to the appointment of various officials at E.M.I., also in the changes which have taken place at that station. The management of that station has drawn our attention to the fact that it is possible that some people might have gathered from this the impression that E.M.I. had not previously been considered a first-class station. We hasten to refute this impression, which, of course, was unintentional, and assure the management that listeners have long recognised E.M.I. as a station of very high quality.

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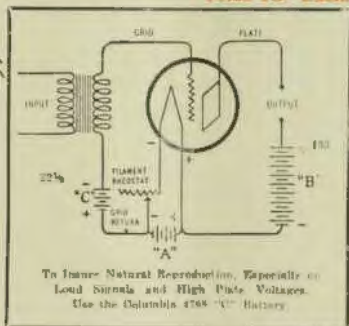
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The Radiotron UX120 was designed to give greater Loud-speaker clarity and volume without distortion.

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This battery can be used as a "C" battery, or as a "B" battery in portable sets. It is especially designed for bias work in combination with power valves UX-120, UX-171, and others. Provided with four screw terminals, giving negative voltage of 1 1/2, 10 1/2, and 22 1/2 of horizontal dimensions. It measures 4 1/2 inches long by 2 1/2 inches wide and 2 1/2 inches high. Weight 1-1/2 lbs.

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