

# WIRELESS WEEKLY

Vol. 9. No. 8.

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

Friday, Dec. 17, 1926.

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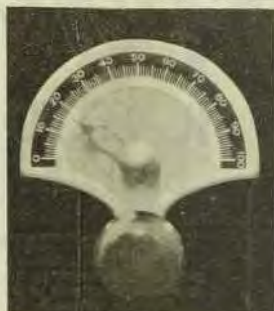
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# WIRELESS WEEKLY

VOL. 9. No. 8.

FRIDAY, DECEMBER 17, 1926.

## *The Undiscovered Gold in Radio*



OLD TIME prospectors sought deposits of precious metals near the surface of the earth. Central Australia is pitted with their shafts and washings, long since abandoned, for the visible outcrops have all petered out, and the remaining ore of value is buried too deep for them to discover. To-day comes the modern prospector, applying science to the difficult task of searching the earth's crust for the secret hiding places of its valuables.

Radio is like that. Just as the first digger to make a strike at Bendigo caused a gold rush, so Marconi was followed by a host of radio prospectors. In the mad scramble for patents, they dug no deeper into the unprofitable shafts of research than they could help. Some achieved fame, wealth and power; the majority failed. They blundered and disputed each other's claims, yet they made radio what it is to-day. Like the gold prospector, they were a tremendous force in development.

But they barely scratched the surface, and the undiscovered gold in radio is buried too deep for them. To-day the scientist must carry

on. Because all the easy gold has been taken there is no immediate profit for him, and, like the modern mining company's engineer, he requires capital with which to work. It is the duty of the broadcasting companies to finance him.

The Broadcasting Company of Australia has led the way, subscribing £500 a year for three years to the Melbourne University to be devoted to radio research—the solving of our interference, static, and fading problems.

Just six weeks ago we said in an editorial that almost all our knowledge of radio phenomena had been obtained from other countries; that there was a pressing need for radio research in this country; and that the finance of such should come from the broadcasting companies. It is not too much to believe that this was the germ which set the minds of our broadcasting authorities awake to the problems confronting their engineers. It is our hope that other companies will follow B.O., but that instead of having rival research bodies in each state University, all will be united in one endeavour—a Commonwealth radio laboratory.

# Between You and Me and the Microphone

"TOO MUCH TALK" is the complaint laid by New Zealand listeners against some of the Australian broadcasting stations, according to the "Dominion," Auckland.

IN LOS ANGELES recently a truck, piled high with cartons labelled "Radio Sets," was captured by the police. An investigation of the contents of the packages revealed that they contained liquor instead of radio apparatus.

A JAPANESE listener writes to 3LO, Melbourne, that next year the Tokio broadcast station JOAK will be an super-power, and instead of employing 1000 watts output, as at present, it will use 10,000 watts output.

THE TOKIO station should provide good entertainment for every owner of a four or five-valve set next year. There is one disadvantage about the Tokio station, and that is its proximity in wavelength to 3LO, Melbourne, only four metres separating the two. Many at present find difficulty in hearing JOAK while 3LO is on the air.

A TAXI DRIVER on the Creek Street trunk, Brisbane, is a wireless enthusiast. He has a small crystal set in his car, and while waiting on the rank throws a small piece of talking tape up to the verandah of the Commonwealth Bank, and secures an ear on the framework of the car. By this means he brightens quite a number of waiting hours.

2BL IS BEING made an educational centre for the women's organizations of New South Wales. The management of the station has placed its facilities at the disposal of the various bodies which are invited to take half an hour to broadcast the aims and objects for which they stand.

THE HELLO MAN was to have taken the part of Father Christmas at the Australian Mothercraft Society's "Peter Rabbit" party for children at the Wentworth on December 20. However, it was felt that a red cloak and white beard would be a poor disguise for such a genial personality, so he will distribute the presents as the character by which many thousands of children know him.

Conducted by

R. E. CORDER

THE TURNOVER of the exhibitors at the Radio World's Fair held in New York in September is estimated at 100 million dollars.

THE PROGRESS of 3LO (together with the stern fact that their present offices are being pulled down) has made it necessary to seek new offices. The Directors have several places under consideration, but no definite decision has yet been formed.

THERE ARE between 12,000,000 and 15,000,000 radio sets in operation throughout the world, according to the electrical equipment division of the U.S. Department of Commerce.



"A GENTLEMAN with a distinct Australian accent talked for five or ten minutes," writes H. G. Donkin, a radio listener of Los Angeles, California, in a letter to 2BL. He explained in his letter that he has been listening to the station, and he gives a number of items which he has heard. The "gentleman with the Australian accent" was Mr. Loris Ingramellis, who has been speaking from 2BL on modern medicines.

## JENKINS DX.

When Jenkins hunts for KGO,  
For miles around the listeners  
know

Who twists and twirls his radio—  
"That's Jenkins."

With whoops and hails the  
heavens abound,

The local stations fade from  
sound,

And fierce static goes to ground  
For Jenkins.

But Jenkins with his one-valve  
set

Has never logged that station yet,  
No KGO can Jenkins get—

Not Jenkins.

Yet always have I yearned to  
know

If, in their Oakland studio,  
Our Yankee friends of KGO—

Get Jenkins?

THE NAME of a German cook, who has been broadcasting kitchen hints from Berlin, is Heer. We would not mind betting she is stout, too.

GERMANY is progressing rapidly in the broadcasting world, and it is reported that another high-powered station is to be erected at Cologne. This station will have a power of 80 kilowatts, and it is possible that it may be heard here during favorable weather conditions.

THE EXPORTATION of American-made radio apparatus this year will probably not total more than seven and a half million dollars worth. Last year's total was nearly ten million dollars.

A 6AB IS a new Western Australian station to tune in. Operated by Clive Cecil on a wavelength of 230 metres, a regular broadcast programme, including church services, is transmitted on Wednesday and Fridays.

UNALLAYED EXCITEMENT was betrayed in a telegram received here last week. It read: "Just built long distance crystal receiver described in 'Wireless Weekly,' sixteen, seventh, twenty-six. Had 3LO last night over one thousand miles airline, Leyden, Nannango, Queensland."

THE PRINCIPAL artists of 2FC have happy recollections of the studio reunion held at Farmer's last New Year's Eve, and of the all-star programme which was given. The same idea will be carried out on the coming New Year's Eve, when the principal artists who have been associated with the studio during the past year will get together and arrange a colossal programme, carrying on until the small hours of the morning.

LAST WEEK a full description of the Dempsey-Tunney fight was broadcast by 2KY from the Arcadia Theatre. The announcer had the microphone in the dress circle, and happened to sit in front of a gentleman who became very excited. Despite of it being only a picture, he insisted on giving Dempsey his advice; once he became quite carried away and told Dempsey "to slam the right in." Suiting the action to the words he caught the announcer on the ear. As he was a fairly big fellow, and the sample of his right was convincing, the announcer decided that discretion was the better part of valor, and moved to safer quarters.





**R**ADIO in one of its simplest forms is now being adapted by British and American scientists to the safeguarding of miners in the coal fields against the destructive and deadly effects of gas accumulations. This radio device records the presence of gaseous in dangerous quantities and through sensitive relay apparatus sounds warning alarms that will permit the clearing of the affected areas or the entire mine of the operating personnel if the ventilating system cannot relieve the dangerous condition that is likely to result in explosions and fire at any moment.

The two principal contributory causes of mine disasters are the explosions of methane gas and the ignition of fine coal dust which saturates the air. The latter is particularly high after a number of shots have been fired boring new faces of coal in the numerous galleries of the operation. This freshly mined coal dust when ignited explodes with incredible violence, wrecking every-

thing in its path and spreads with unbelievable rapidity from shaft to shaft until the entire mine is a total wreck. The devastating effects and loss of life have been only too well recorded in Australian newspapers of recent years to need repetition here, and while the records show that fatalities from this source represent only a small percentage of death from accident in mines the toll is one that scientists believe can be eliminated, reducing the miner's risk to a minimum. With the acts of nature under which handling mine explosions are generally considered removed, the miner's own carelessness will be practically the only element against which he has to guard—which, incidentally, is responsible for the greater part of mine deaths.

Based upon the principle of the electrical conductivity of various gases, this radio adaptation brings into use the simplest of radio circuits consisting of nothing more than an air condenser, a vacuum tube, a sensitive relay and alarm bells. The principle on which the condenser works makes this possible. The plates are charged with electric energy that is discharged only when the current stored is of sufficient strength to break down the dielectric properties of the medium separating these plates, or when the dielectric itself changes to one of greater conductiv-

ity, permitting the condenser to discharge its stored energy. It is on the latter principle, the change of dielectric medium, that the mine gas detector works. The air condenser in this instrument is inserted in a small duct through which air is pumped or drawn from various parts of the mine, each particular gallery having its own separate gas detector unit. These units will be located on the surface of the earth as part of the fan and ventilating control equipment.

While the air passing through the condenser is clear of gas the circuit remains open, but when the air comes through carrying coal dust in finely divided particles the ionization of the atmosphere between the plates of the charged condenser becomes more perfect, depending upon the amount of dust suspended in the air, until the condenser discharges. The frequency of the discharge depends entirely upon the amount of dust in suspension. Each discharge of the condenser is accompanied by a closing of the relay circuit that rings the bell. The rate at which the bell rings gives a reliable check on the change of conditions below so that the operator in charge of the control board can regulate the ventilating system to relieve the condition before it becomes a menace by either drawing

out the air or forcing a fresh draft to dissipate it.

With the large, high-speed fans now used in mines it is possible to change between 300,000 and 400,000 cubic feet of air a minute. They work in either direction equally well and either force the air down or draw it out of the mines to suit the exigencies of the occasion.

The separation of the plates of the condenser is dictated by physicists, chemists, and mining engineers, who have determined when the percentage of dust and gas assumes dangerous proportions. The problem of detecting various amounts of percentages of dust nearing the danger point was comparatively simple. The gases that are lighter than air present other problems that are now the subject of research, and it is hoped by mining engineers that their detection will be as positive and reliable as that of the dust hazard. In the lighter than air class comes the carburetted hydrogen group, better known as marsh gas, the result of decaying vegetation.

This gas is held in cavities under great pressure by the coal and rock formations, and is released when holes are drilled and blasts fired. In their noxious or concentrated condition they are not explosive, but, rising to the roof of the chamber where they mix with from four to twelve parts air, they become a menace that any bare light will ignite, giving rise to an explosion quite as

violent and at times more destructive than the explosions caused by the saturation of the air with coal dust.

The choke damp which invariably follows immediately on the heels of the explosion snuffs out whatever life may have escaped the force of the explosion. The monoxides of carbon that accompany the fire and are known as white damp are included in the miner's list of most dangerous gasses. These are particularly dangerous when opening a mine after a fire and have taken no small toll of human life. The permanent compound that this gas forms with the blood corpuscles can not be dissipated by any of the restorative catalytic agencies and the victims die in much the same manner as persons who have inhaled illuminating gas.

In the picture circuit on this page there is given a diagram that shows the method of operation of this circuit, while in the lower portion is shown the gradual change of the dielectric constant by the passage of dust laden air until the point of conductivity is reached at which the complete ionization of the dielectric is complete and the discharge of the condenser closes the circuit, ringing the bell.

Once the constants of the various gasses have been satisfactorily established, engineers are of the belief that one of the mine's greatest hazards will be removed and leave only the very visible signs of impending disaster for miners to contend with, such

as falling roofs, which are usually preceded by cracks and flaking off of small pieces, as well as bulging timbers and other signs that miners understand.

As soon as the device is perfected and has been given trial in several mines, it will probably be brought to Australia. Installed in our collieries it should prevent repetitions of the terrible Bellbird disaster.

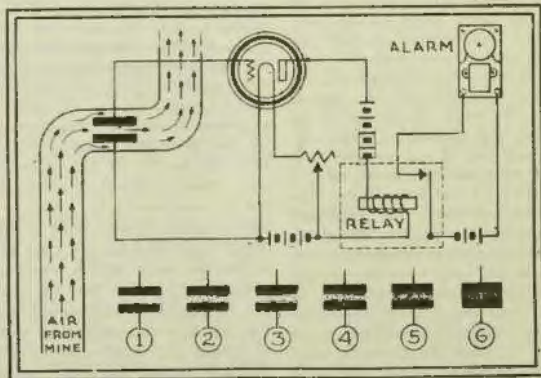
In the not far distant future radio will find more uses in the industrial world as we scratch deeper the surface of the subject which to-day is just growing out of the novelty stage. This latter statement will undoubtedly raise objections from many who think radio a perfect science in its present stage. The potentialities of radio are unlimited, as it goes back to the fundamentals and deals with electrons, the little particles that make possible discharge of energy across the gap of the gas detector, an action that is positive and unflinching.

#### HEARD 4QG AT SAN FRANCISCO

From town and country, and from land and sea, come reports of long distance reception of 4QG, but perhaps the best for some time came a day or two ago from the wireless officer on one of the mail boats running between Sydney and San Francisco.

It was about 3 o'clock one morning (corresponding with 9 o'clock Brisbane time) when the ship arrived in San Francisco harbour, and all passengers and crew were assembled for medical inspection. While the ship crept slowly up the harbour and awaited the launch carrying the medical officer to come alongside, the passengers were entertained by a programme broadcast by 4QG, away the other side of the blue Pacific. The wireless officer reports that the Brisbane station was sufficiently strong to work a loud speaker all over the ships deck, and that the quality was perfect.

TORODIUM is the name of a new metal alloy, which has been invented for use in dull emitter valves. It is claimed that it will far outlast the ordinary type of filament, because of remarkable powers of emission.







Left: The transmitting station under construction at Keen's Hill, Hobart.  
Right: The new 7ZL overlooks Hobart and the Derwent.

## The Voice of Tasmania

*First news and pictures of the new high power A class station now under construction for Tasmanian Broadcasters Ltd. at Hobart. With a relay station at Launceston, this broadcaster will be among the front rank stations in the Commonwealth.*

**A**USTRALIA will have its eighth 5 k.w. broadcasting station early next year. It will be the new 7ZL, Hobart, with a relay station at Launceston. This station will act as the voice of Tasmania, broadcasting to the world the attractions and beauties of the Apple Isle. It will mark the beginning of a new era in broadcasting in that State.

Following the dismantling of the old 3AR for a new crystal controlled high power plant, the apparatus is to be transferred to Hobart. This will form part of an entirely new station now being erected on the summit of Keen's Hill, a beautiful prominence overlooking the town.

That it is the aim of Tasmanian Broadcasters Pty. Ltd. to bring 7ZL up to the standard of mainland stations, was indicated by the chairman of directors (Mr. R. A. Bunning) at the statutory meeting of the company held recently. Mr. Bunning said that the company expected that £2,000 or £3,000 would be made available by the Postal Department when the station went on high power.

Outlining the plans of the new station, Mr. Sidney F. Laws said that the service would be a great benefit to the Tasmanian public. Development would be assisted by educational

talks, while residents of other States and countries would be interested in talks on Tasmania's scenic and other attractions. The present temporary station was giving a service, embracing a large variety of subjects, including an excellent news service, both Tasmanian and Interstate, supplied by courtesy of "The Mercury," Stock Exchange official quotations, produce auction sales, market infor-

mation, and weather forecasts. Talks were also to be arranged by the University of Tasmania in conjunction with the Workers' Education Association, and, in addition, there were weekly feature talks, such as photography, book reviews, library lists, gardening, sports, and physical culture. Musical items were to be a daily feature of the programmes. He was convinced that the future held bright prospects of progress, and the completion of the State broadcasting organisation, particularly from the capitalisation point of view, which it was hoped would be solely Tasmanian, would put Tasmania well on the map in the commercial wireless field.



The earth system being laid out. Miles of copper wire crossing and re-crossing and soldered at the joints make it efficient.

Under the capable management of Sidney F. Laws, the new station should rapidly achieve popularity among listeners-in. Mr. Laws has been handicapped in the past by lack of funds, having had to sit as announcer, musical director, engineer, and artist. His experience in these positions, however, in addition to his long radio experience, should prove immensely valuable. Mr. Laws was a member of the staff of Bolshillie, Australia's first Government radio director. He also played an important part in the erection of our coastal stations.

## Coming Programme Features

SCOTTISH HUMOUR in song and story will be 4QG's programme on December 21. There should be plenty of the right spirit in it.

FRED BLUETT, that happy comedian who insists on singing a song about Tripe, has been booked for performances from 2FC on December 10, 29, and 30.

A HOSPITAL quartette party has been organised by 2BL for child patients. The party comprises Miss Kathleen Jordan, pianiste; Miss Phoebe Martin, dramatic sketch artist; Mr. Phil Ryan, violinist; and Miss Roma Angellien, soprano. Their next broadcast will be on December 22.

AT THE CONCLUSION of the church service on December 19, the story of Flotow's opera, "Martha," will be broadcast from 2FC by Mr. William Adams. The studio orchestra, in conjunction with the vocal quartette, Misses Joyce Hadley and Mariel Humphries, and Messrs. Charles Stephens and Wilfrid Thomas, will sing the principal numbers in the second act.



Mr. Reginald Bradley, Musical Director of 3LO.

LIZA LEHMANN'S delightful musical setting to Oscar Wilde's poem, "The Happy Prince," appears to be a great favourite with listeners, and in response to many insistent requests, Mr. Maurice Price will repeat this number from 2FC on Sunday evening, December 19.

AN EXTENSIVE series of sporting talks for girls and women has been arranged by 2BL. Miss Gwen Varley, secretary of the City Girls' Amateur Sports' Association, gives the addresses, which are usually of five or ten minutes duration, and are given at 11.30 a.m. daily.

TURF TOPICS, conducted by Mr. T. G. Hopkins from 2KY, have attracted the attention of a large circle of listeners. Mr. Hopkins' mail each week keeps him busy answering questions over the air at the conclusion of his Friday night talks. Listeners may write or telephone City 546.

THE WEDNESDAY afternoon programmes for country women, inaugurated at 2GB by the Advance Australia Radio Club, have been transferred to the evening session. From 7.15 to 7.45 every Monday, Wednesday, and Friday evening, subjects are dealt with which are of special interest to women.

3,000 MILES in 300 days, on three dollars, will make an instant appeal, as a talk from 2FC. Under this heading lies the actual story of the experience of an Australian journalist who travelled under the name of "Woolloomooloo" through the states of America. His story will be heard on December 22.

MR. ALFRED HILL, the famous composer of Maori music, recognised as the world's authority on Maori folk songs, is to broadcast from 2FC. On the evening of Sunday, December 12, he will speak on his researches into and collection of old Maori songs. Mr. Hill will have the co-operation of Mr. Alfred Cunningham, the well-known baritone, who will sing to illustrate Mr. Hill's songs.



Miss Madden, who is giving interesting lessons in dressmaking through 2GB.

REPLYING TO numerous requests, 3LO has persuaded Madame Elsie Davies, the popular operatic soprano, to give another series of operatic recitals. These will commence in the near future.

HOW MANY listeners who tune in to Victori Gouriet (2FC comedian), remember the experience he had twenty years ago, when appearing as principal comedian with the Blue Moon Company. He was a most agile dancer, and one day in Adelaide severely hurt his foot, tearing a tendon. To-day Mr. Goudiet is now a thorough Australian, for he had grafted into his heel the tendon of a wallaby, and he hops round, a living example of the skill of modern surgery.

NOT THE LEAST INTERESTING personality broadcasting through 2GB is Commander C. H. Kelleston, who lectures every Wednesday night on the subject of "Ocean Piers." Born and educated in Ireland, he entered the Royal Navy in 1903, and retired in 1920, whilst serving as a Lieutenant-Commander in H.M.S. "Renown" during the Prince of Wales' visit to Australia. During the war he served in H.M.S. "Collingwood," with the Grand Fleet, and was shipmate at the Battle of Jutland with H.R.H. the Duke of York, being also the Prince's signal instructor.



## Christmas Programmes are Full of Good Cheer

**C**HRISTMAS is tangible evidence that the old order does not change. Each generation marks a step forward in commercial and scientific progress, but in fundamentals we remain unaltered. Christmas is still Christmas, with its joyousness and festivity, its message of peace and goodwill. Who was it who so truly said, "it is an annual touch of that universal brotherhood which is the high hope of our race."

Is it not fitting then, that we should commence this day with song and praise, and listeners to 2FC will be delighted with the rendition of Du Bois' beautiful Mass, by St. Patrick's choir, with orchestral accompaniment. The Offertory will be sung by Father Ryan, S.M., who is a visitor from New Zealand. He has a silvery tenor voice, and at his home, when it is made known he is going to sing, thousands flock to hear him.

Miss Lynn Mills will take soprano, and the contralto is Miss Mary Bourke; Mr. Arthur Champion, tenor, and Mr. Chas. Snodgrass, bass. The leader of the orchestra is Miss Kitty Burton, and the conductor Mr. W. H. McCarthy. Mr. W. J. Caspers will be at the organ.

On Christmas afternoon, a special programme will be supplied by Peterham Congregational Church, and the concert at night from 2FC will present one of the finest radio programmes yet arranged. Madame Else Stralia will sing, and items will also be given by Paul Vinogradoff, Wilfrid Thomas (basso), Miss Eileen Boyd (soprano), and the Metropolitan Band.

An ambitious programme has been framed for Christmas Eve at 2FC.

Listeners will journey in imagination through London, commencing with Christmas Carols, and the story will be taken up as the carols die away, by the raconteur, who in this instance will be Mr. S. H. Bowden, a world travelled man and an authority

on London. He will be met at the steps of St. Paul's Cathedral by two friends—one an Englishman, Mr. Laurence Hulbert, and the other, a breezy Australian—Mr. E. J. Van de Velde. These three decide to go through London, bent on seeing everything, and poking into all sorts of unexpected corners.

In this way it will be possible to transmit to listeners a word picture covering many phases of life in the city of teeming millions. There will be street scenes, a description of a ride on top of a 'bus; a snow scene, coloured by the cries of crossing sweepers and flower sellers. The trio will call in at Soho for supper, with all its attendant atmosphere. A visit will be made to the Gaiety Theatre, various music halls, and the famous Foundling Asylum, which every Christmas Eve holds special entertainments.

So much could be crowded into such an evening, it will be only possible to deal with a certain portion, but if listeners to 2FC are pleased, and like *Oliver Twist*, "ask for more," other London nights can be arranged. The whole studio staff will be called upon to render assistance, and an old favourite will be included, Mr. Scott Alexander, who, after twelve months run as the Portuguese Captain in "White Cargo," will return to the microphone with fresh enthusiasm. He is excellent in coster studies, and in association with Miss Annie Hughes will give some lifelike character sketches. Another artist who will assist in the general scheme is Miss Vera Spaul, who returns to Sydney for the pantomime season, the Whicello Trio, who are very clever instrumentalists, and Mr. Ewart Chapple, and others.

Studio 3LO has arranged a real Dickens's Christmas, and the ever-popular "Scrooge" sketch, from the Christmas Carol, will be broadcasted on Christmas Eve. All the studio

favourites will be included in the cast: Messrs. Maurice Dudley (who will play the name part), Alfred Andrew, Lewis, Madame Ashton, Misses Bessie Gaunson and Beatrice Tiernan. The script has been carefully prepared, with a little deviation from the original text as possible, so that Dickensians who are practically word perfect with regard to their favourite author, will not experience any "shocks" as is sometimes the case when a modern touch is introduced. This sketch, which is THE Christmas sketch in English speaking countries throughout the world, will unite the hearts of all listeners in the Spirit of Yuletide, and we shall all be fervently echoing with *Tiny Tim*, "God bless us every one."

On Christmas Eve, arrangements have been made by 3LO to broadcast the performance of "The Messiah," from the Exhibition Buildings. Madame Gossens Vleeroy will be the principal soloist, and she will receive the support of the Melbourne Philharmonic Society, together with that of the Melbourne Symphony Orchestra. Both choir and orchestra will be under the capable baton of Mr. Alberto Zelman, whose annual presentation of this oratorio, has become an outstanding feature of the Festive Season.

A SHORT WAVE wireless service is to be inaugurated by the Belgium Railway, Post and Telegraph Administration for public communication between Belgium and the Congo. The authorities will make use of the 20 kw. station at Uccle, and messages will be received from Uccle by the principal centres in the Congo, such as Kinshasha, Stanleyville, and Elisabethville, and delivered by them to their destination.

THE LEGISLATIVE COUNCIL of Trinidad is considering the sale of Government wireless stations to the Pacific Cable Board. The Finance Committee advises that the price should be raised to 47,000, falling which a minimum royalty of 13,000 per annum should be paid by the Board for five years.

## Were You Caught—2FC's Radio Joke

**S**URPRISING interest has been aroused all over Australia and New Zealand by the broadcasting from 2FC of a gramophone record representing scenes from the London broadcasting station 2LO. This record has been placed on the air several times by 2FC and the announcer has informed listeners that it is a record. A number appear to have missed this intimation, the result being that a score of letters have reached the broadcasting station in complimentary terms regarding the "relaying" of London. These listeners are clearly under the impression that the London station has been picked up and re-broadcast from Sydney. This is not to be wondered at as the record is a most realistic impression.

The London announcer is heard stating that the Lord Mayor's procession is passing the studio and the cheering of the London crowd can be heard quite clearly. The next announcement is that the London station is switching on to the Wembley Stadium, where a band is heard playing; then follows a piper and a bugler. Next come dance music from the London Savoy and sundry announcements.

Three correspondents have written from Dunedin remarking on the record; two enclose a cutting from the local paper which shows that at least one listener thought that he had really picked up London. "Here in Dunedin this record is considered one of the best wireless jokes for some time," writes one correspondent. Another inquires: "Would you kindly let me know if you actually relayed London? The reception was very good, but I have not met anyone else who heard it."

A man at Wanganui has been telling his friends about the London transmission, and he asks for the record to be repeated so that they can hear it. The interesting feature of all this, of course, is that the time will not be long before the British broadcasting stations will be actually relayed from Sydney and Melbourne for the benefit of listeners generally.



*Nothing to do with 2FC or 2LO: JOAK'S Symphony Orchestra, broadcasters who are heard in Australia regularly.*

## Radio is Norfolk Island's Newspaper

**S**YDNEY broadcasting stations supply the only news received by the 800 inhabitants of Norfolk Island. There is no newspaper.

Some years ago when the Pacific Cable Board maintained its training station at Southport, Queensland, press matter from the Brisbane dailies was sent over the cable to Norfolk Island during idle periods. This was typed up and sent out three times weekly by a messenger who placed it on notice boards in prominent positions around the island.

When the training station was transferred from Southport to Sydney, this service ceased and for two or three years the only news the population received was by mail from Sydney once every five weeks. From August, 1925, to January, 1926, the publicity department of the Prime Minister's Office, Melbourne, forwarded a weekly press message of about 200 words to the Administrator and

copies were delivered to subscribers by the Government Office, Kingston.

In January, this year, the Executive Council voted a sum of money and authorized the Administrator to purchase a radio set, and a six-valve super-het was installed at Government House the following month. Since that date news has been received daily and posted on the notice board at Kingston and The Avenue and it is a common sight to see 20 or 30 waiting around a board for the arrival of the news.

There are also four privately-owned sets on the island, and all report excellent reception from 2FC, 2BI, 3LO, 4QG, and 1YA. The only disadvantage is difference of time. The island is 72 minutes ahead of Sydney, which means 9.12 when the evening programme commences and after midnight when "GN" comes through.



## Broadcasting Reaches Encyclopaedic Fame

**B**BROADCASTING, as distinguished from wireless telegraphy and telephony, is only six years old, but it already has become a factor in international affairs, according to an article in the thirteenth edition of the Encyclopaedia Britannica, by Dr. Ralph Bown, vice-president of the Institute of Radio Engineers.

Among the totally new subjects, of which there are many in the new edition of the Encyclopaedia, broadcasting and other aspects of radio are covered with particular thoroughness. Articles by authorities make the new Britannica a most complete and authoritative guide for the radio fan.

The spread of the radio industry to Europe is exhaustively considered by Mr. Bown in the Britannica. He connotes the developments in Great Britain, America, Germany, France, Italy, Belgium, Holland, Austria, Switzerland, Denmark, Norway, the Baltic States, Canada, Russia, Hungary, Czechoslovakia, the Balkan nations, South Africa, Australia, New Zealand, India, and Burma.

"The broadcasting movement, when it crossed the Atlantic," says Dr. Bown, "found Europe impoverished and war-weary. Yet, so prompt and general was its popularity that we must conclude that other forces, besides those which had stimulated broadcasting in America, were at work. After nearly five years in which strain and the sense of insecurity had found occasional relief in somewhat hectic pleasure-seeking, it was an opportune moment for the appearance of a form of pleasure which could be enjoyed at home, naturally and without effort, as well as cheaply.

"Thus, an innovation, comparable in cultural importance to the introduction of printing, was launched tentatively upon a responsive Europe, before either the financial organization of broadcasting services or their relations with the theatre, the musical profession, the press or the wireless industry had been properly settled, and while the conditions for good broadcasts were unexplored."

*The acme of fame is to gain a place in the Encyclopaedia Britannica. In the latest edition of that work, broadcasting is dealt with exhaustively for the first time. Extracts are given here.*

Programme elements are divided broadly by Mr. Bown into music and speech. "For broadcasting purposes," he continues, "music, whether concerted or solo, instrumental or vocal, is best classified according to character and appeal, viz., as serious, 'popular,' and dance music. The proportions of each that are included in any day's or week's programmes vary according to the conceptions of the programme authorities, their resources in artists from day to day, and the demands of the public. This last is, and must remain, a source of controversy, since broadcasting is the only form of concert-giving in which the attempt is made to interest every sort of people every day.

"Broadcast speech includes (a) informative and practical utility matter such as news, market prices, weather reports, time signals, agricultural bulletins, and notices of various sorts (e.g., appeals for charity, police notices, club or association bulletins and notifications of dangerous illness to relatives whose address is unknown); (b) "talks," i.e., short lectures or series of lectures on all sorts of subjects, critics of literature, drama, music, and films, courses of education addressed to schools in school hours, or to adults, and debates; (c) important public speeches, ceremonies and events taken by a microphone on the spot; (d) religious services, either specially arranged for broadcasting or taken by a microphone from church or chapel; (e) radio drama, a form of dramatic presentation in which all effects other than vocal have to be conveyed to the ear or suggested to the imagination, and which calls, therefore, for

a special technique in playwriting and acting; (f) humorous entertainment; (g) advertisement; and (h) political or other propaganda.

"In addition there are miscellaneous special broadcasts, such as words of command for physical exercises performed by listeners at home or messages from an explorer in the heart of a distant country. How many of these categories are admitted depends upon the constitution and policy of the broadcasting authority or concern; for example, advertisement and propaganda on controversial subjects are barred in Great Britain and certain other countries, while many stations (especially in America) are maintained solely for one or two of the named purposes."

"This list of activities," says Mr. Bown, "is enough to indicate the immense social importance of broadcasting and also to demonstrate that it is a means and not an end. Its function," he goes on, "is to render all these sorts of entertainment, all these departments of thought, all these services of information, accessible simultaneously to the maximum number of people in their own homes. But in the presence of so vast an array of material selection must necessarily be exercised. Practically, the power of programme builders is no more—and also no less—than the power of selection. Even so, it is at present far from being an absolute power. Established interests, such as the press, the theatre, and the musical industry, have in many cases safeguarded their special fields in various ways, and the technical requirements of transmission also operate to a certain extent as a check, in spite of the great improvements which have been made in the first three years of systematic practice. Nevertheless, it is gradually coming to be recognized by other interests that broadcasting has obtained a permanent hold, and, moreover, that it is really an addition to rather than a substitute for the older modes of intercourse."

(Continued on Page 39.)

**C**HRISTMAS is upon us, that time of artificial cheer and private gloom; the period when the most bills come in and the income is thinnest; the season when good-will to men is expressed, half a dozen strikes, calculated to spoil the greatest happiness of the greatest number. However, everyone knows his Christmas duty, and puts the most smiling face on his private worries.

I declare I am talking almost exactly like Scrooge, which reminds me that 3LO is being very seasonable and is planning to put on the famous play from "The Christmas Carol" as a Christmas Eve treat. Whenever I hear or read "Scrooge," I must confess that I am gripped by the spirit of Christmas as much as the most inveterate caller of the parrot cry, "Merry Christmas." I, too, follow the fortunes of the old catamount through his experiences with the Spirits, and am as ready as the next man to cry, with Tiny Tim, "God Bless Us Every One."

This performance of a radio Scrooge should be notable, for Maurice Dudley and Mr. Andrew, who will take the leading parts are both good actors, with splendid radio voices. The programme manager, Mr. Lewis, Madame Ashton, Miss Bessie Gaunson will also have parts. All the usual "trimmings" in the shape of bells, sleighs, and carols will be included, so that the listener is likely to have "A Merry Christmas."

This Christmas programme has been designed to celebrate the season, all



*Mr. Leslie Brunning, whose gardening talks have been a 3LO feature for almost two years.*

#### THE 3LO GIRL.

Applications are coming in from girls who want to get to New Zealand at the expense of 3LO. I pointed out recently that the idea seemed to have got round that it was no use entering for this competition unless one were a Bachelor of Music, a Bachelor of Arts, a French chef, a holder of a Diploma of Needlework, the leading hostess of the season, and able to speak fluently in five languages. I think that idea is now dissipated.

#### A RADIO COMPETITION.

As a parlor game with lots of fun about it, let me recommend one that has caused a lot of amusement in England, where it has been broadcast by 2LO. Perhaps 3LO may make it popular here next year.

It consists of a story, told by an announcer, but instead of straight-out narrative, bars or phrases of music are interpolated to carry the meaning. The listener writes down the story as it is told, solving the music in terms of words. The best version of the actual story wins a prize. Here is an example, by way of illustration, as it occurs to me at the moment. The announcer begins:—"It is dark, gloomy, mystic. Still is the night. The hour is three o'clock in the morning. Henry Ainslie was all alone. Around him the silence lapped him; stone walls encompassed him."

Three well-known songs are included in those three lines, a bar of each indicating its place in the story. The success of the solver depends on a goodly knowledge of music and songs, and a quick and agile mind.

## Meanderings

By H. ELLO

(Our 3LO Correspondent)

right. This same Christmas Eve the chiming bells of St. Paul's will ring out and the radio will carry their joyous sound to the ends of the continent. On Christmas morning, the Auburn Methodist Church choir, one of the finest of the extra-metropolitan choirs, will broadcast carols. On Christmas night, "The Messiah" will be broadcast from the Exhibition building.

Complaints of lack of music will have no foundation that week. Mr. Fritz Hart and Mr. J. Sutton Crow will give the last music talk for the year, illustrated by music rendered by members of the Conservatorium. On the Monday before Christmas, Mr. Harold Elvins is to give a piano-forte recital. I suppose this time the complaints will come from the other crowd who don't want music. Heigho!



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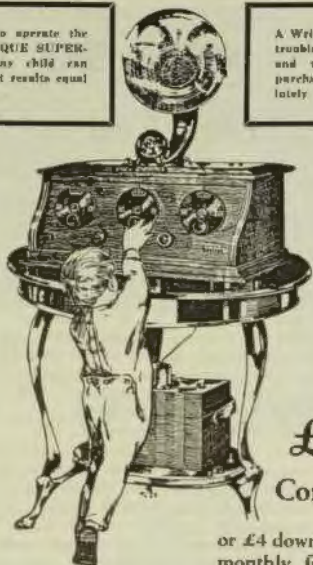
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1 Set of quality "Toroid" coils (3)	2	5	0
1 3-gang Advance S.L.F. Condenser, .00035	1	10	0
2 Ajax wire wound Super Rheos, 30 ohms, 3/6	0	7	0
1 Single Circuit improved pattern non-solder Jack	0	2	6
5 Bakelite, sure contact standard sockets, 2/3	0	11	3
2 Brachstat filament ballasts, 4/9	0	9	6
1 Mica .00025 Grid Condenser	0	1	9
2 Mica .002 fixed Condenser, 1/6	0	3	0
1 Karas Harmonic Audio Transformer	1	19	6
1 Crescent 3½ to 1 Audio Transformer	0	13	6
2 Dozen square section tinned copper buswire, 10d.	0	1	8
1 Terminal board, with 7 posts	0	2	6
1 Ornamental logging vernier dial, "Myder"	0	10	11
The Karas Harmonic Transformer used in this set ensures most delightfully pure music	Total	59	4 3

#### PARTS AND ACCESSORIES OF QUALITY.

S.L.F. Variable Condensers: The Quaker, .0005	0	10	9
Ediswan Audio Transformers: Pure music	0	13	6
Electron Aerial Wire: You can use it anywhere	0	2	6
Perikon Detectors: The Zincite-bornite combination	0	2	9
Lightning Arresters: The Parkson porcelain	0	2	3
Valve Sockets: American 201A, 1 11; 2/3; 2/7	0	4	0
Porcelain Sockets: H. & H. for 201A valves	0	4	0
Econotran Audio Transformers: Ratio 3½ to 1	0	8	6
Vernier Dials: Black metal, 20 to 1 ratio	0	3	6
Headsets: Canonball, 12/6; Towers, 13/6; N. & K.	0	18	6

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## A Receiver Employing Five Valves—One Control

*"How Simple is Tuning?" Answered  
Satisfactorily with this Unique System*

FOR some time back we have had in mind a one control multi-valve receiver. Already we have described the Regenerative Interflex—a three-valve receiver—and the reports to hand prove just how popular this receiver has been. This week we go one better and present a five-valve receiver with one main control.

This feature is made possible by using a three gang condenser, which means that all three condensers are moved with the one dial. This gang condenser tunes the two radio inductances or coils, and the detector or grid coil with the one operation, which means maximum simplicity.

Many people may wonder why a receiver of this type has not been popularised before. This is simply explained. It has always been a difficult task to obtain three coils exactly matched, this matching being absolutely essential in order that the average three gang condenser should tune all inductances accurately to the one wavelength. Take the three gang condenser, and it will be found to consist of three separate variable condensers, with the moving plates on one shaft. Each unit may be of, say .00035 mfd. capacity, exactly, so

it is essential that the three coils should be just as accurate. If this were not so, the results would not be all that is desired, for one coil would be tuned to say 300 metres, the second to 310 metres, and the third to 305 metres, all because the coils are not accurately matched. It would therefore, be impossible to tune the Interstate stations, which usually require very sharp tuning.

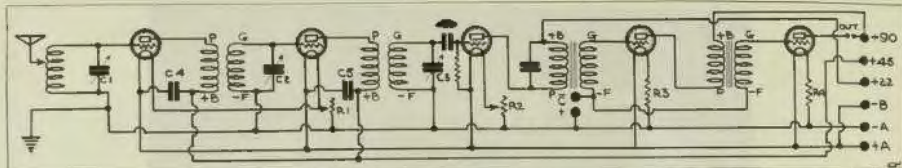
There are two ways to overcome this: (a) To match the coils accurately; (b) to introduce some means of compensating on the three gang condenser. The former method is well nigh impossible, so the latter course is adopted. To this end, we have used the U.S.L. 00035 S.L.F. three gang variable condenser, which is equipped with a compensating device on two out of the three units, thus allowing an adjustment, and making possible this excellent receiver.

Now, the matter of coils requires consideration also. If the standard type of neutroformers are used the spacing of 5 to 6 inches between each means long grid leads to the three-gang condenser—these long leads being an undesirable feature. Hence

the choice of Toroids or Doughnut coils as used in this receiver. The toroidal coils may be spaced alongside of one another without any magnetic coupling. Again, the Toroids save space, as may be gathered by consulting the three photographs.

The front view of the receiver is interesting, inasmuch as the large condenser dial is seen directly in the centre of the panel. Immediately on each side of this is found the two small knobs which are used for compensating or balancing. Once balanced, these knobs are not touched again. On the left is located the radio frequency rheostat. This rheostat controls the two radio frequency valves, and again once it is adjusted it need not be touched again. A rheostat for the detector is seen on the extreme right, and the filament switch is underneath the condenser.

From the plan of the receiver is gathered the layout. Very conspicuous indeed is the three-gang condenser with the compensating shafts at each side. To the right is the radio frequency portion, Toroids and sockets; the detector socket and its attendant Toroid is at the back, while the audio portion is down the left.



The similarity to the Neutrodyne is seen in this circuit. No junks are used.

The terminal board extends along the back, and on this board are the aerial and earth terminals, and also the loud speaker terminals.

Instead of rheostats for the audio valves, filament ballasts are used to pass the correct amount of amperage from the "A" battery. They are made in different sizes for different valves. For example, the UX201A valve requires .25 of an ampere, and the filament ballast is known as the .25 ballast. B406 valves use .1 of an ampere and DV3 valves .06 of an ampere, so the ballasts are .1 and .06 respectively. Don't forget this when purchasing the ballast. Get the correct ballast to suit the valve.

#### Circuit.

The circuit employed in this is the counterpart of the circuit used in the Model 5 All American Receiver, with such minor changes as are necessary to adapt it to home construction. The All American people state:—"The selectivity is exceptional, and the vol-

ume even on distant stations is far in excess of what is ordinarily necessary in the home. The use of the fixed capacities C4 and C5 by-passing the plate returns in the radio frequency stages, is responsible to a considerable extent for the increased selectivity and stability of the circuit. The first rheostat R1, is used as a volume control,

the correct setting of this rheostat remain without further adjustment."

For our purpose, we have used the may be determined by trial and then one gang of three condensers, thus the layout is our own. The circuit is similar to the standard Neutrodyne in many respects, in fact, the Toroids have a neutralising tapping, which permits them to be used in the Neutrodyne circuit if desired.

#### Construction.

As the panel layout is very simple, we have dispensed with the usual diagram. Still, to those who may be doubtful, a word of explanation

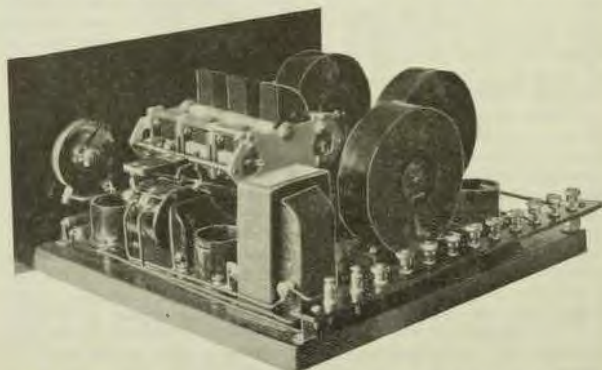
will be helpful. The centre spindle of the variable condenser is in the middle of the panel, the template provided with the condenser giving the positions of the required fixing screws and compensation shafts. On the same level are mounted the rheostats each being 2½ inches from its nearest end. The battery switch is 1½ inches from the bottom, and immediately under the condenser. The fixing screws for securing the panel to the baseboard must also be provided.

Mark out the panel and drill. When using the condenser template, don't let it slip, otherwise much filing will be required to balance up matters. When the drilling is completed assemble your condenser and rheostats. Mount the condenser dial, and using the centre punch make a neat small indentation on the panel just on the edge of the dial, and equidistant from each end. This may now be filled with a small spot of white paint, or Brasso, or whiting, and just before drying wipe off the excess. This is a good indicator provided.

Now prepare the terminal board. A strip of Dilecto, 13ins. x 1in. x ¼in., is best for this, and provide twelve holes for the terminals, each hole being one inch apart. Drill two more holes, one at each end, for the brackets. Mount these terminals, but add a small soldering lug on the underneath side of each terminal, to which is soldered the wiring.

Looking at the plan view of the receiver, and reading from left to right, these terminals are as follows: 1 and 2, loud speaker, 3, — B + 20v, (Audio), 3 — B + 60 to 90v (Radio) 5 — B + 22½v (Detector), 6 — B —, 7, A +, 8 — A —, 9 — C +, 10 — C —, 11 — Earth, 12 — Aerial.

Link 2 to 3, 6 to 7, 8 to 9, and 11,



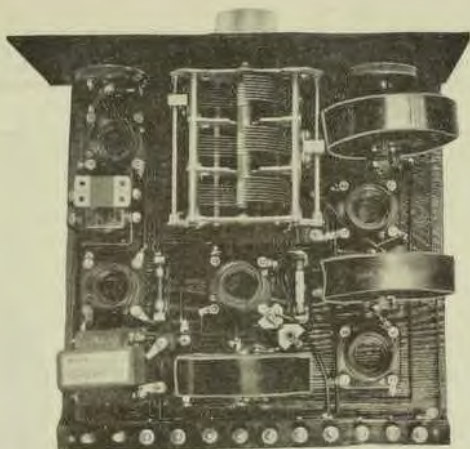
A back view with the audio frequency side in the foreground. Note the filament ballast underneath the rheostat.



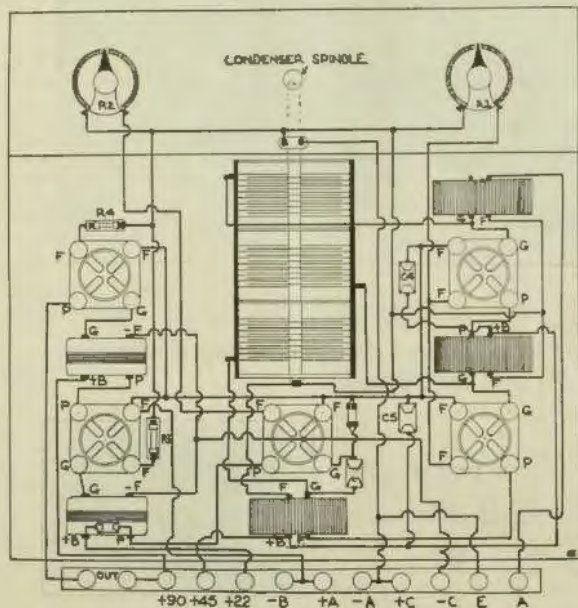
that is join one loud speaker terminal to B + Audio, also B — to A +, also A — to C + and to earth. If desired B — may be joined to A — C + and E. This latter system is perhaps preferable.

#### Baseboard Layout.

This layout requires a little consideration, but again the plan view will be very useful. Firstly shellac the baseboard, then lay out the baseboard components as shown, the first Toroid being one inch from the front edge and 1½ inches from the right hand edge of the baseboard. These measurements are the base measurements, not the edge of the actual coil itself. Then comes the first valve socket, the next Toroid, then the second valve socket. Immediately to the right of this socket is placed the third Toroid in front of which is the detector valve socket. Temporarily place the panel in position to make certain that the condenser doesn't foul this detector socket. Now proceed to place down the audio portion



A plan view showing the positions of all the components.



Wire this receiver from this diagram. All wiring is kept low.

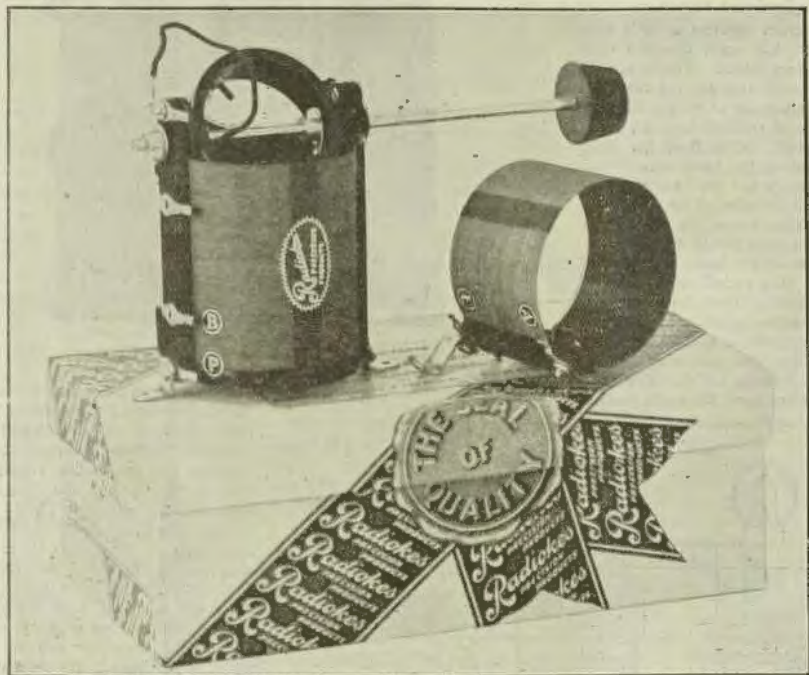
of the receiver finishing up the last socket in front of the detector rheostat. In front of this last socket is room for a filament ballast, the remaining filament ballast snugly fitting to the right of the first audio socket. This ballast is plainly seen on the plan near the Rauland Lyric transformer. Condensers C4 and C5 are located between the Rauland Lyric and the detector toroid, but these are not fixed until the set is wired. Still looking at the plan, the .00025 grid condenser will be seen, with the grid leak to the right of the detector socket. Note, of course, that the grid leak is not shunted across the grid condenser but from the grid to the A+. This gives this detector grid a slightly positive bias which is advisable and which is not obtainable in the usual manner as the grid return through the coil is taken to the filament minus.

Excepting condensers C4 and C6 and the terminal board secure the rest of the components to the baseboard, the set now being ready for wiring.

#### Wiring.

Instead of busbar we have used Fortis Beldenamel Wire for wiring. This wire is insulated without rubber

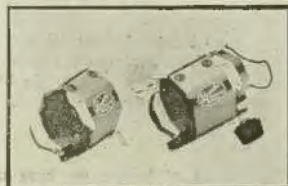
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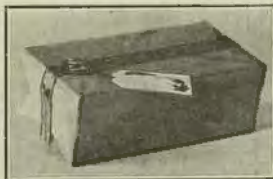
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and is very nice and easy to "work". The insulation is easily removed from the ends by means of a penknife, or an old safety razor blade—easily and quickly, too, and Fortis may be used for straight point to point or right-angled form of wiring. Again it lends itself to allowing A and B battery wires to run parallel without risk of short-circuiting through rubber insulation perishing. The panel wiring is very easy. Simply join one side of each rheostat together and then one side of the battery switch to this wire. To the other side of the battery switch attach a wire long enough to reach one inch beyond the back of the baseboard. This wire finally goes to the A — terminal. Next connect the moving plates of the condenser to the common rheostat wire.

Leave the panel on one side and wire up the baseboard components. Start off with the audio side following out the back of panel wiring diagram. Then the detector valve and finally the radio side. Keep the circuit diagram alongside of you whilst wiring, and mark off on the diagram with a blue pencil each wire as it is added to the set. Complete the baseboard wiring as far as is possible, then attach the panel. A bracket is required to support the weight of the condenser at the back.

Finish off the wiring with the panel-baseboard wiring, and the terminal board wiring. Check over carefully and then test out on the air.

#### Testing.

Connect the batteries to their respective terminals, employing the voltages already specified, hook on the serial and earth and loud speaker. Insert the valves and turn up the rheostats and push the battery switch to the ON position. The valves should light up. Turn the main dial of the condenser slowly until the local station is found. Listen to this for five or six minutes, using the radio frequency rheostat R1 to advantage. Turn this rheostat back so that the signal strength is just nicely audible on headphones which should be substituted for the speaker. Turn one of the compensating knobs slowly until signal strength increases to maxi-

mum. Repeat this with the second compensator, and then don't touch these again.

Now seek the inter-State stations, keeping in mind the fact that only a very slight movement is necessary to lose a station altogether. Brisbane—4QG—is easily found round about 43 on the dial. Perhaps a slight adjustment of the compensators will give you increased strength, but once adjusted properly no further notice need be taken of them. The tuning is indeed surprisingly sharp, but this is something that is desired.

Should a high pitched whistle be heard all through the reception, cure

whose excellent programme was equally well reproduced.

A second test at Northbridge, under adverse conditions of heavy power mains passing the door-again proved the efficiency of this five-valve. Strange to say here 5CL, Adelaide, had a slight background of 2FC, but not enough to worry about.

This receiver is an excellent one, and for compactness and ease of tuning it will be found very hard to beat.

#### Next Week.

The description of the Vincer-Minter Three, a receiver comprising one stage of neutralised tuned anode high frequency detector and one stage of audio frequency amplification. No coil changing required at all. It's a good one, look out for it.

#### PARTS USED IN THE SINGLE CONTROL FIVE-VALVE.

- 1 Diode Panel, 14 x 7 x 3 1/16.
- 1 Set of 3 Turrets, All American
- 1 3 Gang Condenser .00035 mfd. U.S.L.
- 2 Rheostats—Centralab.
- 1 16 ohms and 1 30 ohms detector.
- 5 Valve Sockets—all American.
- 2 Filament Balasts—Rovrade.
- 1 .00025 Grid Condensers—Rovrade.
- 3 .002 Fixed Condensers—Rovrade.
- 1 Bauland Lyric Transformer.
- 1 3 to 1 Transformer—All American.
- 1 Baseboard, 13 x 12 x 1 in.
- 1 Terminal Board of 12 terminals.
- Belden Fatris Wire for wiring.

it by connecting a .002 fixed condenser across the G and F terminals of one of the audio transformers.

Tested at Marriekville, this receiver brought in 4QG and 3LO on the speaker. Adelaide, 5CL, was not as loud as was expected the first night as static was very bad. The second night, however, was better for reception, Melbourne, 3LO, being much louder than Brisbane, 4QG. 5CL, Adelaide, was better than 4QG from point of view of volume. Auckland wasn't loud, as static was very much in evidence, but 3AR, Melbourne, was indeed worth hearing. The local stations were all that could be desired, purity being remarkable. The writer listened with great pleasure to 2UE,

THE CECILIA LADIES' Choir are back in the 3LO programmes. It is distinctly refreshing to turn from the present-day compositions to the restful melodies of Purcell and his contemporaries—more especially when they are arranged for a choir of voices. They require such delicate handling, such artistic introduction of light and shade to convey the spirit of the English country side, that only a perfectly well balanced, highly trained choir could attempt to render them with any degree of satisfaction.

#### C BATTERIES.

By this mail we have received an interesting pamphlet from the Burgess Battery Company, in which is indicated the means of obtaining high C voltages from the Burgess battery No. 5156. Each battery provides up to 22½ volts, is comparatively small in size, economical in price, and has a long life as a "C" battery.

The new Radiotron valve UX120 frequently requires up to 40½ volts "C" battery, this being provided for by linking two No. 5156 batteries in series.

Further particulars of this excellent system may be obtained from the New System Telephones Pty. Ltd., 280 Castlereagh Street, Sydney.

# Send No Money

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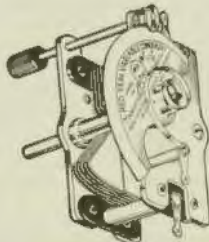
Sold on 7 days free trial, which means, that, should the speaker not meet with your entire satisfaction within 7 days, return same to us and we will either send other goods to your requirements or refund your money.

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Height, 22 inches  
Bell mouth, 9 inches



.00035 mf.  
.0005 mf.  
15/9 each

### Separate that Interfering Station with the Manhattan Red Seal Low Loss Vernier Condenser

The Manhattan Red Seal Condenser is a true low loss condenser, the losses being so small as to be almost immeasurable. This high efficiency is obtained by following the best principles in condenser design and by employing extreme care in the assembling of the entire instrument. Fitted with brass plates, pigtail connections, hard rubber insulation and an ideal vernier control.

U.S.L. 3-gang Variable Condenser for 5 Valve Single Control set as described in this issue of "Wireless Weekly." Price ..... 90/6 with 4 inch dial

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# Broadcasting Programmes for the Coming Week



## Friday, Dec. 17

### 2 FC

#### EARLY MORNING SESSION.

- 7.—"Big Ben" and Announcements.  
7.5.—Music from the Studio.  
7.10.—Official Weather Forecast. Rainfall: Temperatures; Astronomical Memoranda; Shipping Intelligence; Commercial News; Mail Services.  
7.25.—Investment Market, Mining Share Markets, Metal quotations.  
7.35.—Wool Sales, Breadstuffs Markets, Interstate Markets, Produce Markets.  
7.45.—"Sydney Morning Herald" News Service.  
8.—"Big Ben," "Cheerio" Talk by Mr. J. K. Powell.  
8.15.—Close down.

#### MORNING SESSION.

- 9.15.—The Chimes of 2FC and Announcements.  
9.20.—Music from the Studio.  
9.30.—Marching Music for the School Children.  
9.40.—Music from the Studio.  
10.—"Big Ben" and Announcements.  
10.5.—Labs "Sydney Morning Herald" News Service.  
10.15.—Music from the Studio.  
10.45.—A Morning Reading.  
11.—The Chimes of "Big Ben," Australian Press Association and Reuter's Cable service.  
11.10.—Music from the Studio.  
11.15.—A talk on Home Cooking and Recipes by Miss Ruth Furst.  
11.30.—Marching Music for the School Children.  
11.35.—Close down.

#### MIDDAY SESSION.

- 12.—"Big Ben" and Announcements.  
12.5.—Stock Exchange, First Call.  
13.10.—Music from the Studio.  
12.30.—Marching Music for school children.  
12.40.—Music from Studio.  
12.45.—From Farmer's Oak Hall: Instrumental item by the Oak Hall Trio (leader, Mr. Harold Keats).  
12.50.—Rugby Wireless News.  
1.—"Big Ben," Weather Information.  
1.1.—Evening News, midday news service, Producers' Distributing Report.  
1.20.—From Farmer's Tea Rooms: The Oak Hall Trio.  
1.25.—Stock Exchange—Second Call.  
1.30.—Marching Music for the School Children.  
1.40.—Music from the Studio.  
1.40.—From Farmer's Oak Hall: The Oak Hall Trio.

- 2.—The Chimes of "Big Ben." Close down.

#### AFTERNOON SESSION.

- 2.30.—The Chimes of 2FC; Music from the Studio.  
2.40.—A Reading.  
2.50.—Marching Music for the School Children.  
3.—From Farmer's Tea Rooms: Miss Jeanette Rooney, contralto.  
3.45.—From Farmer's Tea Rooms: The Oak Hall Trio.

- 3.55.—Music from the Studio.  
4.—Miss Dorothy Benson, contralto, "Danny Boy" (Weatherley).  
4.5.—Music from the Studio.  
4.10.—Miss Jeanette Rooney, contralto.  
4.25.—From Farmer's Oak Hall: The Oak Hall Trio.

- 4.35.—Music from the Studio.  
4.40.—Miss Dorothy Benson, contralto, "When Song is Sweet" (Sans Souci).  
4.45.—Stock Exchange. Third Call.  
4.48.—Close down.

#### EARLY EVENING SESSION.

- 5.30.—The Chimes of 2FC.  
5.40.—The "Holic Man" Talks to the children.  
5.50.—A Story for the Older Children.

Farmer's Service, Sydney, call sign 2FC, wave length 442 metres.

Broadcasters Ltd., Sydney, call sign 2FL, wave length 368 metres.

Traders Hall Broadcasting Station, call sign, 2KY, wave length, 280 metres.

Theosophical Broadcasting Service, call sign, 2GB, wavelength, 218 metres.

Burgin Electric Coy. Ltd., Sydney, call sign, 2DE, wavelength, 218 metres.

Broadcasting Co. of Australia, Melbourne, call sign 2LO, wave length 371 metres.

Associated Radio Co., Melbourne, call sign 3AR, wave length 434 metres.

Queensland Radio Service, Brisbane, call sign 4QO, wave length 363 metres.

Central Broadcasters Ltd., Adelaide, call sign 5CL, wave length 395 metres.

Radio Broadcasting Co. of N.E. Australia, call sign 1YA, wave length 426 metres.

Western Australian Farmer's, Perth, call sign 6WF, wave length 1250 metres.

Tasmanian Broadcasting Pty. Ltd., Hobart, call sign 7EL, wave length, 468 metres.

- 6.45.—From Farmer's Oak Hall: Vocal and Instrumental Music.  
7.—From the Studio: Last minute sporting information, by the 2FC Racing Committee.  
7.10.—"Evening News" talk news service, weather information.  
7.20.—Daily's Market Reports (wool, wheat, stock), fruit and vegetable markets.  
7.40.—From Her Majesty's Theatre a talk by Mr. Frederick Bentley of "Rose Marie" Co.

#### NIGHT SESSION.

- 8.52.—Broadcast from Her Majesty's Theatre, the first act of "Rose Marie," featuring Miss Harriet Bennett and Mr. Frederick Bentley. Musical numbers: Introduction; Song, "Hard Billed Heron"; Frederick Bentley and Chorus; Song, "Rose Marie"; Reg. Dandy and J. Hughes; Song, "Mountain"; Harriet Bennett and Chorus; song, "Lac Jeun"; Harriet Bennett and Chorus; Duet, "Iudian Love Call"; Harriet Bennett and Reg. Dandy; song, "Pretty Things,"

Harriet Bennett and Chorus; duet, "Why Shouldn't We"; Younie Banker and Frederick Bentley; Song, "Tolom Tom Tom"; Stephenie Deas and Chorus; Finale.

9.40.—From the Studio: Signor Alberto Marini, tenor (a) "Serenade" (Schubert), (b) "I Know a Lovely Garden," (D'Hardjot).

9.50.—Items from the full dress rehearsal of the new Revue, "A Bunch of Keys," shortly to be produced in Sydney. Listeners will have the unusual experience of hearing the actual rehearsal in operation, and performers not to be aware of the exact time that they are being broadcast.

10.50.—From the Studio: Signor Alberto Marini, tenor (a) "Haze of My Heart" (Lohr), (b) "To the Day" (Leomavalli).

11.—"Big Ben" a talk on next week's film releases.

11.10.—From the Wentworth Hotel: items by the new Symphonic Dance Orchestra, under the baton of Mr. Sydney Simpson.

12.—National Anthem. Close down.

### 2 BL

#### EARLY MORNING SESSION.

- 7.15.—G.P.O. Clock and Chimes.  
7.18.—Musical Programme from Studio.  
7.18.—Physical Training and Health Exercises.  
7.25.—Health Hints.  
7.30.—Physical Training and Health Exercises.  
7.42.—G.P.O. Clock and Chimes.  
7.45.—Weather Report.  
7.48.—Sporting Information.  
7.50.—Broadcasters' Special News Service.  
8.—G.P.O. Clock and Chimes. Close down.

#### MORNING SESSION.

- 10.—G.P.O. Clock and Chimes.  
10.1.—Weather Report.  
10.3.—Broadcasters News Service direct from Bughy.  
10.4.—Daily Telegraph News Service.  
10.25.—Musical Programme from the Studio.  
10.30.—Daily Telegraph News Service.  
10.35.—Musical programme from the Studio.  
11.—G.P.O. Clock and Chimes.  
11.5.—Musical programme from the studio.  
11.15.—Vegetable Market Report.  
11.15.—Fruit Market Reports.  
11.21.—Other Market Reports.  
11.24.—London Social Questions.  
11.25.—Boats in call by wireless.  
11.31.—Weather Report and Forecast.  
11.35.—Shipping Information.  
11.37.—Information re Interstate and Overseas Mails.

11.40.—Women's Service, conducted by Mrs. Jordan. Social notes.

11.50.—Mrs. Jordan replies to correspondents.

12.—G.P.O. Clock and Chimes.

12.1.—Talk by Mrs. Jordan on "Feeding the Family."

12.25.—Sporting talk by Miss Gwen Farley.

12.30.—Sydney Stock Exchange calls.

12.35.—News Service from the Sun.

12.45.—Miller's Instrumental Quartette, under the direction of Cyril Castling.

1.30.—G.P.O. Clock and Chimes.

1.35.—Sydney Stock Exchange Calls.

1.35.—Track Gallies and Sporting Information.

1.45.—"Sun" Newspapers News Service.

2.—G.P.O. Clock Close down.

#### AFTERNOON SESSION.

Racing Information broadcast by courtesy of "The Sun."

4.—G.P.O. Clock and Chimes; Weather Report; Forecast by courtesy of Mr. C. J. Marce, Chief Meteorologist.

5.—Social notes from "The Sun."

- 8.10—"Sun" Newspaper's News Service.  
 8.15—Civil Service Restaurant Trio, under the direction of Miss De Cury Bremer.  
 8.30—G.P.O. Clock and Chimes.  
 8.31—"Sun" Newspaper's News Service.  
 8.45—Musical Programme from the Studio.  
 9.—G.P.O. Clock and Chimes; Civil Service Stores Trio.  
 9.1—Civil Service Stores' Trio.  
 9.15—Serial Story.  
 9.30—Musical programme from the Studio.  
 9.45—"Producers" Distributing Society's Vegetable and Fruit Market Reports.  
 9.50—Shipping information when available.  
 9.55—News from "The Sun".  
 9.58—Resume of night's programme.  
 9.—G.P.O. Clock and Chimes; Close down.

## EARLY EVENING SESSION.

- 8.45—B.P.O. Clock and Chimes.  
 8.48—Little George and the Kiddies.  
 8.5—"The pupils of Miss Monica Seally will entertain the kiddies."  
 8.40—Pavilion Dinner Orchestra, under the direction of Mr. Lee Harrison.  
 Special Country Session.  
 7.—G.P.O. Clock and Chimes.  
 7.15—Australian Mercurials Land and Finance Co's. Report.  
 7.6—Weather Report and Forecast, by courtesy of Mr. C. J. Mason, Government Meteorologist.  
 7.6—Stock Exchange Reports.  
 7.14—"Producers" Distributing Society's Vegetable and Market Fruit Report.  
 7.19—Fruit and Vegetable Report (Sun).  
 7.22—Trade and Fashions Report (Sun).  
 7.26—Daily Freshness Report ("Sun").  
 7.30—Country news from "Sun".

## NIGHT SESSION.

- 8.—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.  
 8.3—Broadcasters' Trio.  
 8.10—Miss Mabel Heinrich, contralto.  
 8.20—Mr. Rex Harrison, comedian.  
 8.27—Mr. Les. Herford, baritone.  
 8.34—Miss Jean Whitmore, soprano.  
 8.41—Mr. Lance Jeffree, tenor.  
 8.48—Broadcasters' Trio.  
 9.—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. C. J. Mason, Govt. Meteorologist; Resume of following day's programme.  
 9.4—Miss Mabel Heinrich.  
 9.11—Mr. Lance Jeffree.  
 9.18—Interval.  
 9.23—Broadcasters' Trio.  
 9.3—Mr. Leslie Herford.  
 9.49—Senior Sporting Expert of the "Sun" will talk on "The Prospects of Saturday's Racing".  
 10.—G.P.O. Clock and Chimes.  
 10.1—Miss Jean Whitmore.  
 10.6—Mr. Rex Harrison.  
 10.15—Al. Hammett and Ambassadors Dance Band until midnight, "Sun" News Reports during intervals between dances.  
 12.—G.P.O. Clock and Chimes; National Anthem.

## 2GB

## NIGHT SESSION.

- 6.45—Talks to children, by "R.A.C."  
 7.15—Talk by Dr. Louise Hodgkinson.  
 7.30—Interesting points by Miss N. Dunger.  
 7.45—Announcements.  
 7.55—Instrumental Trio.  
 8.1—Address by Dr. J. Van der Lecuw, L.I.D.  
 8.20—Songs by Mr. Win Green.  
 8.28—Violin solos by Mervin Herber.  
 8.35—Instrumental Duets.  
 8.45—Selections from Shakespeare.  
 9.5—Violin solos by Lloyd Davies.  
 9.12—Announcements.  
 9.26—Talk on Radio.  
 9.34—Violin solos by Dan Scully.  
 9.42—Instrumental Trio.  
 9.52—"Great Thoughts for Great Minds," by Prof. E. Wood.  
 9.58—God Save the King.

## 3LO

## MIDDAY SESSION.

- 12—Time Signal, British Official Wireless News from Rugby, Reuter's and the Australian Press Association cables, "Argus" and "Herald" news services.  
 12.45—Stock Exchange information.  
 12.50—Meteorological information. Weather forecasts for Victoria, Tasmania, South Australia, and New South Wales. Ocean forecast.  
 1—Time Signal.  
 EARLY AFTERNOON SESSION.  
 1.1—Studio Orchestra.  
 1.10—Agnes Fortune, piano.  
 1.17—Jessie Smith, contralto.  
 1.24—Studio Orchestra.  
 1.34—"At a Bush Picnic." Music, story and verse, grave and gay, by poets and writers of Australasia. Mr. V. Upton-Brown.  
 1.40—Studio Orchestra.  
 2—Close down.

## AFTERNOON SESSION.

- 3.—Studio Orchestra.  
 3.10—Walter Smith, organist.  
 3.15—"Asiatic Park," the art of dressing well.  
 3.22—Charlie Pope, comedian.  
 3.32—Studio Orchestra.  
 3.42—Elna Davies.  
 4.—Mrs. M. Callaway Mahood, "Art in Modern Life."  
 4.15—Studio Orchestra.  
 4.25—Charlie Pope.  
 4.32—Theresa Norman, cello.  
 4.37—Elna Davies, soprano.  
 4.45—"Herald" News Service; Stock Exchange Information.  
 5—Close down.

## EVENING SESSION.

- 5.45—Children's Hour. Answers to letters and birthday greetings.  
 6.—The London stories.  
 6.7—"Billy Bunter's" Story for the Littler ones.  
 6.15—Pat McLean, children's songs.  
 6.22—Nelly Landon.  
 6.29—Billy Bunter.  
 6.40—"Argus" and "Herald" News Services; Reuter's and the Australian Press Association Cables; Weather Synopsis; Shipping News.  
 6.50—Stock Exchange information.  
 6.57—Fish Market reports by J. R. Barrett Ltd.  
 7.—River Reports.  
 7.3—Market Reports by the Victorian Producers Co-operative Co. Ltd.; Haymarket Sheep Sales; poultry, grain, cheese, hay, cotton, jute, dairy produce, potatoes and onions; Market prices of oranges and lemons, supplied by the Victorian Central Citrus Association Pty. Ltd.  
 7.20—Under the auspices of the Department of Agriculture, Mr. J. M. Ward, Superintendent of Horticulture, will speak on "Marketing Soft Fruits, hints on grading and packing."  
 7.40—Mr. George Gee, now appearing in "A Night Out," will speak to you from his dressing-room at His Majesty's Theatre, by permission of J. C. Williamson Ltd.  
 8.—Collingwood Citizens' Band.  
 8.10—Pat McLean, entertainer.  
 8.17—Mona Lus Duo, steel guitar.  
 8.27—Support Bands and Ethic Day.  
 8.34—Collingwood Citizens' Band.  
 8.44—Pat McLean.  
 8.50—Collingwood Citizens' Band.  
 8.57—Support Bands.  
 9.—Mr. E. C. H. Taylor, "School Life and School Sport."  
 9.24—Studio Orchestra.  
 9.30—Elna Davies, soprano.  
 9.40—Talk by "Cardinal" on Latona Handicap and other Moonee Valley races.  
 9.56—Bernard Bradley and Agnes Fortune.  
 10.6—J. Alexander Browne, baritone.  
 10.10—Mr. H. K. Love, hints on receiving sets.  
 10.18—Instrumental Trio.  
 10.28—Elna Davies, soprano.  
 10.32—"Argus" News Service. British Official

- Wireless News; Announcements.  
 10.45—J. Alexander Browne, baritone.  
 10.50—Meteorological information; Road Notes, supplied by the R.A.C. of Victoria.  
 11.—Our Great Thought for To-night: "Chorfulness is health; the opposite, melancholy, is disease."—Hallbaron.  
 11.1—3LO Melody Masters.  
 11.40—God Save the King.

## 3AR

## MORNING SESSION.

- 11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England, by 3AR's Agent, Express Train information, "Age" News Bulletin, exclusive to 3AR.  
 12—Time Signal Chime from G.P.O. Studio Barometer Readings, 1st Weather Forecast. Events of the day.  
 12.5—Musical selections from Hoyt's De-Luxe, Bourke Street. Mr. T. L. Campbell at the Wurlitzer.  
 13.00—Stock Exchange News. Market Reports.  
 12.40—Musical Selections.  
 12.55—Shipping Movements. Mail Notices.  
 1—Close down.

## AFTERNOON SESSION.

- 2.30—Hoyt's Premier Orchestra, Cecil W. Frimer, conductor.  
 3.—Musical selections from Studio, by the Ron Heavely Quartette.  
 4.—Time Signal Chime. 2nd Weather Forecast. Miss Emily Robie, cooking lecture, by courtesy of Metropolitan Gas Company, Hoyt's Premier Orchestra.  
 4.50—Mr. R. Stanley Haines, gardening chat to children.  
 4.55—Entertainment Amusement Guide.  
 5.—Time Signal Chime. Studio Barometer Readings. Close down.

## EARLY EVENING SESSION.

- 6.45—Children's Corner, by "Uncle Red."

## EVENING SESSION.

- 7.45—British Official Wireless Press. Studio Barometer Readings. Racine Anticipations and Sporting Events reviewed by "Field Glasses."  
 8.—Time Signal Chime from G.P.O. The Merry Mixtures Concert Party.  
 8.4—Miss Florrie Ritter, soprano.  
 8.10—Mr. Ern. Ritter, humorist.  
 8.13—Miss Erna Bjornsen, violinist.  
 8.22—Mr. Tom Gardner, Scotch comedian.  
 8.31—Mr. R. Stanley Haines will give his Weekly Gardening Talk.  
 8.45—Miss Hazel Ralph, soprano.  
 8.52—The Merry Mixtures Chorus.  
 8.58—Mr. Harry Vewers, clarinetist.  
 9.5—Miss Erna Bjornsen and Jean Ritter, piano duet.  
 9.15—Miss Nellie Wall, soprano.  
 9.22—Instrumental Trio.  
 9.28—Mr. Pip Powell, comedian.  
 9.35—Mr. Fred Paul, baritone.  
 9.42—Merran Ritter, Powell, Ramage, and Gardner, "Tulouza."  
 9.46—Mr. Roy Ramage, cellist.  
 9.51—Messrs. Pip Powell and Ern Ritter, entertainers.  
 9.56—The Merry Mixtures bid you "Good-night."  
 10.—Time Signal from G.P.O. Studio Barometer Readings. "Age" news, exclusive to 3AR.  
 10.10—Leggett's Ball-room Orchestra, relayed from Greville Hall, under the leadership of Mr. Harry Nangle.  
 11—Close down.

## 4QG

## MIDDAY SESSION.

- 12.35—Time tel.  
 12.48—Time Signal.  
 13.—Market reports; weather information, "The Daily Mail" news; "The Daily Standard" news.



- 1.25—From Hotel Carlton: Lunch music from the Lounge; Hotel Carlton, played by Hotel Carlton Symphony Orchestra.  
2—Close down.

## AFTERNOON SESSION.

- 1.30—From Hotel Carlton: Afternoon-tee music from the Lounge; Hotel Carlton, played by Hotel Carlton Symphony Orchestra.  
4.15—From the Studio: "The Telegraph" news.  
4.40—Close down.

## EARLY EVENING SESSION.

- 6—"Daily Standard" News, Weather Information, Announcements.  
6.30—The Children's Session—Stories by "The Sandman."  
7—From the Council of the Agriculture Studio: The Farmer's Session; Market Reports. Lecture: "Co-operation in Ireland" No. 2 of series, Mr. J. F. F. Reid, Editor, "Queensland Agricultural Journal."  
7.30—From the Studio: Stock Reports; Announcements.

## NIGHT SESSION.

- 7.45—Lecture session, Gardening, "Carnations," by "Teosma."  
8—Studio Programme.  
9—Metropolitan Weather Forecast. Week-end road information for motorists, officially supplied by the Royal Automobile Club of Queensland.  
9.15—Studio programme.  
10—"The Daily Mail" news service. Close down.

## 5CL

## MORNING SESSION.

- 11.30—G.P.O. Chimes.  
11.31—Stock Duo Art.  
11.40—"Advertiser" News Service.  
11.55—Vocalion number.  
12—G.P.O. Chimes.  
12.1—"Advertiser" news service.  
12.16—Stock Duo Art number.  
12.30—5CL Studio Orchestra.  
1.25 (APPROX.)—Ward & Co.'s Stock Exchange Intelligence, Weather Reports and Station Announcements.  
2—G.P.O. Chimes.

## AFTERNOON SESSION.

- 1—G.P.O. Chimes.  
1.1—Relay from "Maple Leaf" Cafe—Orchestral numbers.  
1.45—From Studio: Talk by Mrs. Coghill.  
4—G.P.O. Chimes.  
4.1—Relay from "Arcadia" Cafe—Orchestral numbers.  
4.45—Stock Exchange reports, general information, and station announcements.  
6—G.P.O. Chimes.

## EVENING SESSION.

- 4.30—G.P.O. Chimes.  
5.31—Bedtime stories for the children by "Uncle Mike and Aunt Peggy."  
7.30—Market Reports.  
7.40—Sporting Talk by Mr. Arnold Treloar.  
8—G.P.O. Chimes.  
8.1—Relay from Adelaide Town Hall: Concert in connection with the Stott's Break-Up. Interspersed with vocal items by Miss Linda Wald, Miss Elsie Watson, and Mr. Harold Durkin.  
9—G.P.O. Chimes.  
9.1—Weather reports.  
9.2—Relay from Adelaide Town Hall, continued.  
10—G.P.O. Chimes.  
10.1—Relay from Adelaide Town Hall, continued.  
10.15—"Advertiser" News Service.  
10.25—Items from Studio.  
11—G.P.O. Chimes. National Anthem. Close down.

## 7ZL

## MORNING SESSION.

- 11—G.P.O. Clock Chimes. The "Mercury" news, stock market, shipping, commercial

- intelligence, weather information, "Salonika" selections.  
12—G.P.O. Clock Chimes. Close down.

## AFTERNOON SESSION.

- 1—G.P.O. Clock Chimes.  
Musical items from the Studio.  
3.30—Hobart Stock Exchange quotations.  
3.55—Weather information.  
4—G.P.O. Clock Chimes. Close down.

## EARLY EVENING SESSION.

- 7—Children's Corner. "Big Brother" chats to his Pals.

## EVENING SESSION.

- 8—G.P.O. Clock Chimes. "The Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.  
8.5—Hobart Stock Exchange quotations.  
9.15—Weekly Gardening chat, by Mr. George Nation.  
9.30—Concert from the Studio: Miss Jean Hibbard, mezzo-soprano; Miss Kathleen Pearce, contralto; Miss Ruby Hesse, pianist; Miss Mona, M. Guffie, soprano; Mr. Thomas Spencer, tenor; Rev. Arthur C. Nelson, organist; Mr. Victor Pharoah, banjo soloist.  
9.15—Produce reports from Roberts & Co., Ltd., Murray Street, Hobart. Tasmanian District Weather reports.  
9.30—"The Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

## Saturday, Dec. 18

## 2FC

## EARLY MORNING SESSION.

- 7—Chimes of "Big Ben" and Announcements.  
7.5—Music from the Studio.  
7.10—Official Weather Forecast; Rainfall; temperatures; Astronomical Memoranda; Shipping Intelligence; Mail Services.  
7.25—Investment Market, Mining Share Market, Metal Quotations.  
7.45—"Sydney Morning Herald" News Service.  
8—The Chimes of "Big Ben." Close down.

## MORNING SESSION.

- 9.15—The Chimes of 2FC and Programme Announcement.  
9.25—Music from the Studio.  
9.45—Last minute sporting information, by the 2FC Racing Commissioner.  
10—Chimes of "Big Ben" and music from the Studio.  
10.5—Late "Sydney Morning Herald" news service.  
10.15—Music from the Studio.  
11—The Chimes of "Big Ben." Music from the Studio.  
11.5—A talk on Gardening by "Red Giva"  
—Mr. J. G. Lockley.  
11.30—Close down.

## MIDDAY SESSION.

- 12.55—Chimes of 2FC and programme announcements.  
1—"Big Ben." "Earning News" midday news service and weather news. Music from the Studio. During the afternoon, Handicap Races will be described by 2FC Racing Commissioner.

## AFTERNOON SESSION.

- 2.45—The chimes of 2FC and announcements.  
3—"Big Ben." Announcements. During the interval of sporting events, items will be given from the Studio.  
3.30—Complete resume of the afternoon sporting events.  
5—Close down. Note: Results of Newcastle J.C. will be transmitted as received.



## TOM'S REFORMATION

Have you ever watched a young horse lashing out and then galloping off in pig-rooting defiance—not vicious but just full of life and spirits?

It was just that way with Tom! He kicked hard at good advice and made the pace all over the home "paddock." When his mother warned him that some day he would bring his father's grey hairs in sorrow to the "grave"—and similar prophecies—Tom grinned and went off to play two-up.

One Christmas a wise uncle presented him with a four-valve wireless set, a Burgess Battery, and a year's subscription to the "Wireless Weekly." That night Tom heard news from all over Australia, and next day he was studying the Morse code to read off signals on the air.

Now Tom is building his own set and as a first step he has ordered a new Burgess B battery.

You will find parallels to Tom's case in every country town—and every city—in Australia. Wireless is making men out of rustic colts and giving them ever-fresh interest.

But if you have a Tom of your own, don't spoil the whole thing for him by putting a bad battery into a good set. No sensible boy wants to have his interest killed by crickles and hum, and he will soon follow the lead of Young Australia shown in the Burgess advertisement on another page, and demand the "black and white stripes."

What better Christmas gift can you give your boy or any boy than the battery which has the slogan—

"Half the cost—because double the life!" Burgess Batteries.

EARLY EVENING SESSION.

- 4.45—The Chimes of 2FC.
- 5.00—"Hello Man" and "Uncle Russ" assisted by "Jerry" will give the children's sessions from Waterfall Sanatorium.
- 6.45—From the Hotel Australia, Sydney, items by the orchestra, under the direction of Miss A. J. Fean.
- 7.10—From the Studio: "Evening News" late news service and sporting information.
- 7.40—Close down.

NIGHT SESSION.

- 7.59—Announcements.
- 8.—"Big Ben" Broadcast from the Concert Hall at the Waterfall Sanatorium, a programme by the 2FC Hospital Concert Party. Mr. R. B. Orchard introduces the party.
- 8.4—Mr. Ernest Archer, tenor, "Somewhere at Dawn" (Wood).
- 8.8—Mr. Alfred Cunningham, baritone, "Un-til" (Benderson).
- 8.12—Desmond Tenner, boy violinist.
- 8.17—Miss Muriel Humphries, contralto.
- 8.21—Rayne and Powell, English entertainers.
- 8.26—Madame Vera Tanna, soprano, "One Shining Morning" (Novis).
- 8.30—Russ Garling and "Jerry" in Ventriloquist Humour.
- 8.40—Mr. Alfred Cunningham, baritone, "Chorus Gentleman" (Lohr).
- 8.45—Miss Eud Hynes, in pianoforte solo.
- 8.50—Mr. Ernest Archer, tenor, "I look into your Garden" (Wood).
- 8.55—Miss Muriel Humphries, contralto.
- 9—Rayne and Powell, Harmony Duo.
- 9.6—Mr. Alfred Cunningham, baritone, "In an old fashioned town" (Spence).
- 9.10—Madame Vera Tanna, soprano, "Four ducks on a pond" (Africa Newburn).
- 9.15—Mr. R. B. Orchard will tell a few stories.
- 9.30—Desmond Tenner, boy violinist.
- 9.35—Rayne and Powell, Harmony Duo.
- 9.50—From the Studio: Mr. Reg. Greenwood, comedian.
- 9.40—Broadcast from the Conservatorium.

- Hall—excerpts from the opera, "Hos of Cantilla" by Balfe, given by students of Mr. William Dallison, assisted by Mr. Bryson Taylor.
- 10.30—From the cStudio: Mr. Laurence Halbert, baritone.
- 10.35—2FC Dance Band, conducted by Mr. Eric Pearce.
- 10.48—Mr. Reg. Greenwood, comedian.
- 10.50—Announcements.
- 11—"Big Ben" 2FC Dance Band, in dance numbers, until midnight.
- 12—National Anthem. Close down.

- port and Forecast, by courtesy of Mr. C. J. Mares, Govt. Meteorologist.
- 9.5—Miss Millie Hughes, soprano.
- 9.12—Miss Rex Newarrow, and partner.
- 9.30—Duet, Miss Millie Hughes and Mr. Raymond Beatty.
- 9.34—Interval.
- 9.39—Miss Millie Hughes and Mr. Raymond Beatty.
- 9.46—Miss Heather Kinnaird.
- 9.53—Mr. Bert Warno.
- 10—G.P.O. Clock and Chimes.
- 10.1—Miss Rex Newarrow, baritone.
- 10.8—Miss Millie Hughes.
- 10.15—Al. Hammett and the Ambassadors Dance Band, broadcast from the ballroom of the Ambassadors. During the intervals between dances audio reports by courtesy of "The Sun" will be broadcast.
- 12—G.P.O. Clock and Chimes; National Anthem.

2 BL

EARLY MORNING SESSION.

- 7.14—G.P.O. Clock and Chimes.
- 7.16—Musical Programme from the Studio.
- 7.19—Physical Training and Health Exercises
- 7.25—Health Hints.
- 7.30—Physical Training and Health Exercises.
- 7.45—G.P.O. Clock and Chimes.
- 7.46—Weather Forecast.
- 7.48—Sporting Information.
- 7.50—Broadcasters' Special News Service.
- 8—G.P.O. Clock and Chimes; Close down.

MORNING SESSION.

- Base results broadcast by courtesy of the Sun
- 11—G.P.O. Clock and Chimes.
- 11.1—Weather Report.
- 11.3—Musical Programme from the Studio.
- 11.17—Sydney Daily Telegraph News Service.
- 11.20—Women's Section conducted by Mrs. Jordan, Social Notes.
- 11.30—G.P.O. Clock and Chimes.
- 11.31—Mrs. Jordan replies to Correspondents.
- 11.40—A Talk on Simple Cooking for Children by Mrs. Jordan.
- 11.5—Musical Programme from the Studio.
- 12.20—Daily Telegraph News Service.
- 12.30—G.P.O. Clock and Chimes.
- 12.31—London Postal Questions.
- 12.45—Broadcasters' special Rugby News Service.
- 12.58—Boats in call by wireless.
- 13.45—Weather Report and Forecast.
- 15—SHIPPING INFORMATION.
- 15.45—Information re Interstate and Overseas Mails.
- 12.51—News from Sun Book Edition.

AFTERNOON SESSION.

- 1—G.P.O. Clock and Chimes.
- 1.1—Musical programme from the Studio.
- 1.16—Daily Telegraph News Service.
- 1.30—G.P.O. Clock and Chimes.
- 1.31—Musical Programme from the Studio.
- 1.45—Talk on Sporting and Athletic Features for the day. Lacrosse, Hockey, Tennis, Cricket, Sailing, Boating, Athletics, Rifle Shooting, Golf, Bowls, Boxing.
- During the afternoon, sporting information will be broadcast by courtesy of "The Sun" Newspapers. Musical programme from the Studio during the afternoon.
- 5—G.P.O. Clock and Chimes; Close down.

EARLY EVENING SESSION.

- 5.35—G.P.O. Clock and Chimes.
- 5.46—Uncle George and the Kiddies.
- 6.45—Pavilion Dinner Orchestra, under the direction of Mr. Cec. Morrison.
- 7.15—Results of all sporting information, including Sailing, Swimming, Racing, Coursing, Bowls, by courtesy of Sun Newspapers.
- 7.30—Country News from the Sun and results of all sporting and athletic fixtures.
- 7.45—G.P.O. Clock and Chimes; close down.

NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.
- 8.8—The Ambassadors' Instrumental Salon Quartet, under the direction of Mr. Claude McElynn.
- 8.16—Miss Heather Kinnaird, contralto.
- 8.17—Mr. Bert Warno, comedian.
- 8.44—Mr. Raymond Beatty, basso.
- 8.52—King's Mandolin Orchestra.
- 8.59—Resume of following day's programme.
- 9—G.P.O. Clock and Chimes; Weather Re-

3 LO

MORNING SESSION.

- 11—Studio Orchestra.
- 11.10—Sonora Recital.
- 11.17—Franklin Stobham, clarinet.
- 11.24—Bobby Pearce, baritone.
- 11.31—Studio Orchestra.
- 11.41—Sonorphone Sonora Recital.
- 11.48—Bobby Pearce, baritone.
- 11.55—Studio Orchestra.
- 12 noon—Time Signal; British Official Wireless News from Radio; Reuters and the Australian Press Association Cables; "Arcus" and "Herald" News Service; Shipping Intelligence.
- 12.45—Stock Exchange Information.
- 12.50—Meteorological Information; Weather forecast for Victoria, Tasmania, South Australia and New South Wales; Ocean Forecast; River Reports.
- 1—Time Signal.
- 1.1—Studio Orchestra.
- 1.10—Miss Davis, sopratic.
- 1.17—Charlie Pope, comedian.
- 1.24—Studio Orchestra.
- 1.34—Walter Smith, cornet.
- 1.40—Billie Davis, sopratic.
- 1.47—Studio Orchestra.
- 1.55—Charlie Pope.
- 2—Description of Ban Yule Hurdle, Mooney Valley, by "Musket," of the Sporting Globe.
- 2.5—Close down.
- 2.30—Description of Barcoola Handicap — Mooney Valley.

AFTERNOON SESSION.

- 3.6—3LO Melody Masters.
- 3.40—Description of the Latana Handicap.
- 3.46—3LO Melody Masters.
- 4.20—Description of Kinga Handicap.
- 4.25—3LO Melody Masters.
- 4.35—"Herald" News Service: Stock Exchange Information.
- 4.40—Description of Aryle Handicap.
- 5—Close down.

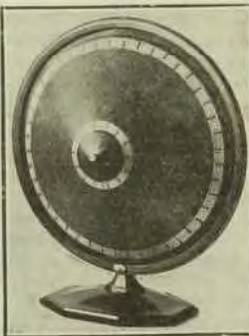
EVENING SESSION.

- 5.30—All Sporting Results.
- 5.45—Children's Hour: Answers to letters and birthday greetings.
- 6—A Musical Programme by "The Sunbeam Singers," pupils of Miss Eileen Pascoe-Wells.
- 6.10—"Argus" and "Herald" news services. Sporting results: Rugby's and the Australian Press Association Cables; Weather Synopsis, shipping movements.
- 6.52—Stock Exchange information.
- 6.57—Fish Market Reports by J. R. Borrett Ltd.
- 7—River Reports.
- 7.3—Market reports by the Victorian Producers Co-operative Co. Ltd; grain, chaff, hay, straw, jute, dairy produce, potatoes, and onions.

NIGHT SESSION.

- 7.20—Mr. E. K. Prosser, "Australian Ferns."
- 7.30—Dr. Lench "Phessania and Australiana."
- 8—Students' Annual Recital, New Conservatorium.
- 9.15—John Gibson's Nopollitan Sketches.
- 9.25—Charlie Pope, comedian.
- 9.35—Dr. Act P. direction Winifred Moverley, "Followers."

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- 8.57—Len Gibson's Sextette.  
 10.4—Charlie Pope.  
 10.16—"A Night Out" Act 2, scene 3, featuring Miss Maude Fane and Mr. George Gee, transmitted from His Majesty's Theatre, by permission of J. C. Williamson Ltd.  
 10.25—"Argus" News Service; British Official Wireless News; Meteorological Information; Announcements; Sporting Results.  
 10.40—S.L.O. Melody Masters.  
 11—One Cook's Thought: "Cheerfulness is also an excellent wearing quality. It has been called the bright weather of the heart!"  
 —Samuel Smiles.  
 11.1—S.L.O. Melody Masters.  
 11.40—God Save the King.

### 3 AR

#### MORNING SESSION.

- 11.30—The British Official Wireless Press, received by 3AR's operator from Rugby Wireless Station, England. Express train information. "Arg" news bulletin.  
 12—Time Signal Chime from the G.P.O. First Weather Forecast; Studio Barometer Readings; Events of the Day.  
 12.4—Musical Selections, relayed from Hoy's De Luxe, Bourke Street, Mr. T. L. Campbell at the organ.  
 12.50—Stock Exchange News. Foreign Exchanges of the world, supplied by the courtesy of Messrs. Thos. Cook & Son; Market Reports.  
 12.59—Musical Selections.  
 12.59—Mail Notices. Shipping Movements.  
 1—Close down.

#### AFTERNOON SESSION.

- 2—Description of Babyule Hurdle, 2 miles. Monina Valley Racing Club, Hoy's Premier Orchestra.  
 2.30—Description of Barkoola Handicap, 1 1/4 furlongs.  
 3—Description of Koombahle Maiden Plate, 1 mile.  
 3.30—Description of Lutuna Handicap, 1 1/4 m.  
 4—Time Signal Chime, 2nd Weather Forecast.  
 4.0—Description of Kista Handicap, 4 f.  
 4.40—Description of Ayrvale Highweight Handicap, 1 f.  
 4.55—Evening Amusement Guide, Studio Barometer and Outdoor Thermometer Readings.  
 5—Time Signal Chime. Close down.

#### EARLY EVENING SESSION.

- 6.45—Children's Corner. Uncle Mac.

#### EVENING SESSION.

- 8—Time Signal Chime from G.P.O. Studio Barometer Readings. British Official Wireless Press. Final Sporting and Racing Results. Local news.  
 8.15—Dance Night: The Rhythmic Dance Orchestra, relayed from the Maison-de-Luxe, Edwood. Latest popular numbers, under the leadership of Mr. Geo. Lewis.  
 9.30—Week-end Traveller's Information, supplied by the Victorian Railways Department and Metropolitan Tramways Board.  
 8.50—Maison-De-Luxe Rhythmic Dance Orchestra.  
 10—Time Signal Chime from G.P.O. Studio Barometer Readings.  
 10.5—The Maison De Luxe Rhythmic Dance Orchestra.  
 11—Time signal. Close down.

### 4 QG

#### NO MIDDAY TRANSMISSION.

#### AFTERNOON SESSION.

- 3.25—Tune-in.  
 3.40—A Waltz for Little Listeners by "Miss Waratah."  
 4.30—Close down.

#### EARLY EVENING SESSION.

- 5.30—Tune-in.  
 6.30—The Children's Session: Bedtime stories by "Uncle Ben" and "Uncle Jim," assisted

by "Mabel Sunshine."

7.15—Sporting News.

#### NIGHT SESSION.

- 7.45—A Sporting Talk.  
 Tuesday's programme will constitute an evening for the old folks, and has been arranged and organized by Mr. Eric John.  
 9—From the National Speedway—Motor cycle races.  
 9.15—From the Studio: Continuation of Programme.  
 10—From the Studio: "The Sunday Mail" news service. Close down.

### 5 CL

#### MORNING SESSION.

- 10.30—G.P.O. Chimes.  
 10.31—ICL Studio Orchestra. Selections.

#### AFTERNOON SESSION.

- By permission of Adelaide Racing Club Ltd., running description of the first day of the Christmas meeting by Mr. Arnold Tesmar. From the Studio: Interstate and country sporting results.

#### EVENING SESSION.

- 8.50—G.P.O. Chimes.  
 8.51—Bedtime stories.  
 7.30—Market reports.  
 7.40—Sporting Results.  
 8—G.P.O. Chimes.  
 8.1—Special relay, interspersed with numbers by Miss Ada Cook's Melodymakers, Signor Torre and Mr. Eric Wickens.  
 9—G.P.O. Chimes.  
 9.1—Relay Concert, continued.  
 10—G.P.O. Chimes.  
 10.1—Relay concert, continued.  
 10.15—Sporting Results.  
 10.30—Numbers by Miss Ada Cook's Melodymakers.  
 11—G.P.O. Chimes and Close down.

### 7 ZL

#### MORNING SESSION.

- 11—G.P.O. Clock Chimes. The "Mercury" stock market, shipping, commercial, intelligence. Weather information and sporting anticipations. "Sainola" Selections.  
 11.45—Hobart Stock Exchange quotations.  
 12—G.P.O. chimes. Close down.

#### EVENING SESSION.

- 7—Children's Corner: "Big Brother" chats to his Pa's.

#### NIGHT SESSION.

- 8—G.P.O. Clock Chimes. The "Mercury" special Transmanian news service. Railway auction produce sales, weather information and sporting results.  
 8.5—Hobart Stock Exchange quotations.  
 8.15—Dance numbers from the Studio.  
 9.45—British Official Wireless News, copied direct from Egly by our own operator. Weather prognosis. Station Announcements. National Anthem.

Sunday, Dec. 19

### 2 FC

#### MORNING SESSION.

- 10.55—Announcements.  
 11—"Big Ben": Morning Service from St. Mark's Church of England, Darling Point, the morning service conducted by the Rev. Howard Lea.  
 12.15—From the Studio: News Session.  
 12.30—Close down.

#### AFTERNOON SESSION.

- 2.55—Announcements.  
 3—From the Studio: A talk by Captain Fred Axtens on "The Exploits of Marco Polo."  
 2.30—From the Manly Beach Rotunda, items by the Manly Municipal Band, conducted by Mr. J. Flehman.  
 3—Close down.

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 Liverpool, England.

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NIGHT SESSION.

- 6—"The Ben."
- 6.5—Vivian solo: "Cantata" (D'Ambrosio).
- 11.5—Baritone Solo, Mr. William Hunter.
- 11.7—Transferte Solo, Mr. Maurice Peller.
- 12.5—Vivian solo: "Tambourin chinois" (Kreutzer), Solo, Kees.
- 13.30—Repeat performance by request of Oscar Wilde's poem: "The Happy Prince," set to music by Lisa Lehmann. Recited by Mr. Maurice Peller, with violin and organ accompaniment.
- 14.0—From the Lyceum Methodist Mission Hall, organ solo by Mr. J. Laid.
- 7—Evening Service conducted by Mr. W. A. Foreman.
- 10.—From the Studio: A presentation of Finno's opera "Martha." Story will be given by Mr. William Adams.
- 8.15—Overture, Orchestra.
- 8.45—Solo profano (duet), Charles Stephens and Wilfrid Thomas.
- 8.50—"Siem giuhl" (Quartette), Joyce Hadley, Muriel Humphreys, Chas. Stephens, and Wilfrid Thomas.
- 9—"Che via, dir via" (Quartette), Joyce Hadley, Muriel Humphreys, Chas. Stephens, and Wilfrid Thomas.
- 9.15—"Precio, presto, audion" (Quartette), Joyce Hadley, Muriel Humphreys, Chas. Stephens and Wilfrid Thomas.
- 9.16—"The Last Rose of Summer," Joyce Hadley.
- 9.15—Pianoforte solo by Mr. Lindley Evans: "Theme and Variations" (Paderewski).
- 9.25—"Continuation of the Opera 'Martha'." "The rhapsody" (Quartette), Joyce Hadley, Muriel Humphreys, Chas. Stephens, and Wilfrid Thomas.
- 9.32—"Caroline del Porter" (solo), Wilfrid Thomas, basso.
- 9.40—"M'appari just amor" (solo), Chas. Stephens.
- 9.45—"Ah, che a te perditi" (Quartette), Joyce Hadley, Muriel Humphreys, Chas. Stephens, and Wilfrid Thomas.
- 9.50—"The Sydney Instrumental Trio, consisting of Mr. Lionel Lawson, violin, Mr. Gladstone Bell, cello, Mr. Lindley Evans, piano.
- 10.5—National Anthem: Close down.

2 BL

MORNING SESSION

- 10.45—News Session.
- 11—Service broadcast from Newtown Congregational Church.

AFTERNOON SESSION.

- 5—Concert arranged by Mrs. G. B. Fieldington, to be broadcast from Burdick House.
- 4—Bible Class, conducted by Mr. W. "Cairo" Bradley.
- 4.30—Organ Recital by Mr. Frank Farr, broadcast from St. Paul's Presbyterian Church, Roselle.
- 4.—G.P.O. Clock and Chimes: close down.
- 4.45—Children's Service, conducted by Uncle George.

EVENING SESSION.

- 7.15—Choral Service, broadcast from St. Paul's Presbyterian Church, Roselle.
- 8.15—From the Studio: Broadcasters' Trio.
- 8.25—Resume of following day's programme; Weather Report and Forecast by courtesy of Mr. C. J. Mares, Govt. Meteorologist.
- 9.—G.P.O. Clock and Chimes.
- 9.1—Miss Dorrie Ward, soprano.
- 9.4—Mr. W. E. Lewis, baritone.
- 9.15—Miss C. L. Robertson, alto.
- 9.23—Miss Maile Barnett, contralto.
- 9.28—Duet: Miss Ward and Mr. Lewis.
- 9.35—Broadcasters' Trio.
- 9.50—Miss C. L. Robertson.
- 9.57—Mr. W. E. Lewis.
- 10.4—Miss Maile Barnett.
- 10.11—Close down.

2 GB

MORNING SESSION.

- 10.20—Organ music from St. Alban's Liberal Catholic Church.
- 10.30—Morning service from St. Alban's Lib-

eral Catholic Church, Roselle.  
12—Close down.

EVENING SESSION.

- 6.45—Music from Studio.
- 7—Items including Instrumental Quartette.
- 8.—Music from Studio.
- 8.15—Vocal Quartette.
- 8.25—Largo solo by Ada Brook.
- 8.35—Songs by Miss Gladys Evans.
- 8.42—Vivian solo by Dan Scully.
- 8.50—Vocal Quartette.
- 9—Announcements.
- 9.5—Vivian solo by Monica Hunter.
- 10.—Song by Miss Gladys Evans.
- 10.15—Address by W. C. Burt.
- 10.43—God Save the King.

3 LO

MORNING SESSION.

- 10.40—Express Train Information.
- 11—Christmas Carol Service, transmitted from the Collins St. Baptist Church, Melbourne.
- 12.15—British Official Wireless News from London.
- 12.30—Close down.

AFTERNOON SESSION.

- 4—Pleasant Sunday Afternoon Service, from Wesley Church, Lonsdale Street, Chairman, Rev. J. H. Cain.
- 4.30—Announcements: Close down.

EARLY EVENING SESSION.

- 5.45—Children's Hour: Answers to letters and Birthday Greetings by Hilly Bantry.
- 6.—Vivian solo by Monica Hunter.
- 6.5—Billie Bantry will continue the story of the "Christmas Carol."
- 6.20—Lella Bight, soprano.
- 6.25—Billie Bantry will tell you more about David Livingston.
- 6.15—Close down.

NIGHT SESSION.

- 6.45—Organ Recital by Mr. William G. James.
- 7—Service transmitted from Central Mission, Wesley Church, conducted by Rev. C. Irving Hanson.
- 8.30—Collingwood Citizens' Band.
- 8.40—Mr. J. Hewitt Ross, Christmas Carols.
- 8.50—Auburn Methodist Choir, under the direction of Mr. J. Sutton Crow.
- 9.2—Stella Dredge, soprano.
- 9.5—Collingwood Citizens' Band.
- 9.11—Auburn Methodist Choir.
- 9.35—Collingwood Citizens' Band.
- 9.40—Alan Eddy, baritone.
- 9.45—Auburn Methodist Choir.
- 9.52—"Arges" News Service.
- 9.58—"Our Great Thought for to-night: 'Nothing can bring you peace, but the triumph of principles.'—Emerson
- 10—God Save the King.

3 AR

MORNING SESSION.

- 10.35—The bells from St. James' Old Cathedral.
- 11—Morning Service from Cairns Memorial Presbyterian Church, Powell Street, East Melbourne.
- 11—Service, conducted by the Minister, Rev. J. H. Dabb, B.A., B.D.

AFTERNOON SESSION.

- 3—Miss F. Lyndhurst, contralto.
- 7.—Mr. D. Shaw, baritone.
- 7.14—Mr. R. Cole, baritone.
- 7.21—Mr. T. R. Neall, alto.
- 7.28—Miss Freda Stevens, soprano.
- 7.35—Miss F. Lyndhurst, contralto.
- 7.42—Mr. D. Shaw, baritone.
- 7.49—Mr. R. Cole, baritone.
- 7.54—Mr. T. R. Neall, alto.
- 7.5.—Miss Freda Stevens, soprano.
- Close down.

EVENING SESSION.

- 8—Children's Entertainment by Ladybird.
- 8.45—Bells from St. James' Old Cathedral.
- 7—Evening Service from Cairns Memorial Church, Powell Street, East Melbourne.

- 8.20—Mr. Lal Kurling, 'cello.
- 8.27—Mrs. Ellen Parker, soprano.
- 8.44—Mr. H. Sutcliffe, baritone.
- 8.55—Miss Cecilia Walk, pianist.
- 9.25—Mr. Frank Thomas, baritone.
- 9.5.—Mr. W. B. Rockingham, Superintendent, Pacific Cable Co., will talk on "Cables and Wireless."
- 10.30—Mr. Lal Kurling, 'cello.
- 10.27—Mr. H. Sutcliffe, baritone.
- 9.54—Mrs. E. Parker, soprano.
- 9.41—Mr. Frank Thomas, baritone.
- 9.55—"Aze" News Bulletin, exclusive to SAR.
- 9.53—Close down.

4 QG

MORNING SESSION.

11—Morning service. The complete morning service will be relayed from Albert Street Methodist Church. Close down.

AFTERNOON SESSION.

4.15—Concert provided by the Federal Band, Mr. W. H. Davis, conductor, will be relayed from the Botanical Gardens.

NIGHT SESSION.

The complete evening service will be relayed from Albert Street Methodist Church:—  
7—Evening Service.  
8.30—Benediction.  
8.40—At the conclusion of the church service the concert by the Greater Brisbane Municipal Concert Band will be relayed from Wickham Park.  
9.54—Close down.

5 CL

MORNING SESSION.

11—Relay from Black Forest Baptist Church: Divine Service.

EVENING SESSION.

- 8.20—G.P.O. Chimes.
- 8.31—Sunday Stories for the Children.
- 7.—G.P.O. Chimes.
- 7.1—Relay from Parkside Baptist Church: Divine Service.
- 8.15—Combined Methodist and Baptist Community singing, carols, etc.
- 8.45—Talk by Mr. P. H. Nicholls: "Christmas and the future."
- 9.—G.P.O. Chimes.
- 9.1—Weather report.
- 9.2—Mr. Oliver McLennan.
- 10.—G.P.O. Chimes. National Anthem. Close down.

7 ZL

EVENING SESSION.

7—Service from Memorial Congregational Church, Hobaris. Preacher, Rev. Arthur C. Nelson. Christmas music and carols.  
8.—Conclusion of Church Service either Band Concert from St. David's Park or Studio Concert.  
3.15—"The Mercury" Special Interstate news service; Weather Service; Station Announcements; National Anthem.

Monday, Dec. 20

2 FC

EARLY MORNING SESSION.

- 7—"Big Ben" and Announcements.
- 7.5—Music from the Studio.
- 7.10—Official Weather Forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, commercial news, mail services.
- 7.25—Investment market, mining share market, metal quotations.
- 7.35—Wool sales, bondmarkets markets, Interstate and domestic produce markets.
- 7.45—"Sydney Morning Herald" News Service.
- 8—"Big Ben": Close down.



MORNING SESSION.

- 9.15—The Chimes of 2FC.
- 9.40—Music from the Studio.
- 10.—"Big Ben" and Announcements.
- 10.5—Late "Sunday Morning Herald" News Service.
- 10.15—Music from the Studio.
- 10.30—A talk by the 2FC Racing Commissioner.
- 10.45—A Morning Reading.
- 11—"Big Ben's" Australian Press Association and Reuter's Cables.
- 11.10—Music from the Studio.
- 11.25—Close down.

MIDDAY SESSION.

- 12—"Big Ben" and Announcements.
- 12.5—Stock Exchange, First Call.
- 12.10—Music from the Studio.
- 12.40—Music from the Studio.
- 12.45—From Farmer's Oak Hall: The Oak Hall Trio.
- 12.55—Miss Dorothy Shorter, soprano.
- 1.—Chimes of "Big Ben." Weather Intelligence.
- 1.5—"Evening News" midday news service. Producers' Distributing Society's Report.
- 1.50—The Oak Hall Trio.
- 1.55—Stock Exchange, Second call.
- 1.55—Miss Dorothy Shorter, soprano.
- 1.15—Music from the Studio.
- 1.50—The Oak Hall Trio.
- 2—"Big Ben." Close down.

AFTERNOON SESSION.

- 2.30—Chimes of 2FC and Announcements.
- 2.35—Music from the Studio.
- 3—Miss Nea Hallett, soprano.
- 3.5—A Reading.
- 3.55—Music from the Studio.
- 3.10—From Farmer's Tea Rooms: Miss Katherine Beverley, soprano, "Good Morning, Brother Sunshine" (Lohmann).
- 3.15—Instrumental Items by the Oak Hall Trio.
- 3.55—Music from the Studio.
- 4.—Miss Margaret Grimshaw, mezzo, "The Flower Song" (Faust). (Gounod).
- 4.5—A Music Talk by Mr. Ewart Climpie.
- 4.55—From Farmer's Tea Rooms: Miss Katherine Beverley, soprano, "Only the River Runs by" (Hopkins).
- 4.25—From Farmer's Oak Hall: Oak Hall Trio.
- 4.30—Music from the Studio.
- 4.40—Miss Margaret Grimshaw, mezzo, "I Wonder if Love is a Dream" (Forster).
- 4.45—Stock Exchange—Third Call.
- 4.45—Close down.

EARLY EVENING SESSION.

- 5.45—The Chimes of 2FC.
- 5.50—The "Hello Man" talks to the children.
- 6.30—A Serial Story for the Disher Children.
- 6.45—Broadcast from the Hotel Australia: Items by the orchestra, under the direction of Miss A. J. Egan.
- 7.15—From the Studio: "Evening News" Late News Service Weather Information.
- 7.30—Dalry's Market Reports (wheat, wheat, stock), fruit and vegetable market.
- 7.40—A talk by Mr. F. L. Gratzmacher, on "Queer Things about Tooth."

NIGHT SESSION.

- 7.55—Announcements.
- 8.—"Big Ben's" broadcast from the King's Hall. Items from the concert by the students of Professor Sauer:—1. Orchestral Class (a) "Ruslan Melody." (b) "A Doll's Cradle Song." (c) "Minuet Mozart 11th." (by C. Sauer). (d) "Oriental Song." 5.5—2. Song, "Der Liebesbaum" (Schubert). Miss Esther McAlpin.
- 8.10—2. Piano Solo. "Rhapsody No. 12" (Liszt). Miss Violet Welch.
- 8.15—4. Violin Solo, "Saxonic Dance," by Dvorak-Kreier. Master Bruce Hudson.
- 8.18—5. Song, "La Sorenata" (Teuti). Miss Amy Wilson.
- 8.22—6. Piano solo: "Prelude in C Sharp Minor" (Bachmannhoff). Miss Dorothy Thomas.
- 8.25—7. Song, "Roberto Tu" (Meyerbeer). Madame Lilian May (Professor Student).
- 8.3.—From the Studio: Mr. R. A. Bartleman, tenor.

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SYDNEY

- 8.35—Miss Dorothy Mould, contralto.  
8.40—"The Beauties of Omascus." Final travel programme by Miss Dorothy Morgan, D.L.M. Listeners will be taken in imagination through the final steps of the journey. The following places will be described by Miss Morgan: "The Columns of Lebanon," "Palmyra, view from the Arch of Triumph," "Ancient Sculpture in Baalbek, the slipped keystone," "A King of old with his Prime Minister," "Rome, the Colosseum, the Jugator," "Ancient Art in Brickwork," "A Babylonian Horse," pictures of these places will appear in the late edition of the "Evening News" of this day.  
8.45—Mr. E. A. Bartleman, tenor.  
9—Continuation of the Travel Graphophone.  
9.15—Miss Dorothy Mould, contralto.  
9.20—Continuation of the Travel Graphophone.  
8.30—Mr. E. A. Bartleman, tenor.  
9.35—Miss Dorothy Mould, contralto.  
9.40—The reappearance of the well-known comedian, Mr. Fred. Hurst.  
9.45—Mr. Tom Lammond, tenor.  
10—Miss Dorothy Dewar, comedienne.  
10.5—2FC Dance Band in dance numbers, conductor, Mr. Eric Pearce.  
10.14—Mr. Tom Lammond, tenor.  
10.22—2FC Dance Band in further dance numbers.  
10.30—Miss Dorothy Dewar, comedienne.  
10.35—2FC Dance Band.  
10.40—Mr. Tom Lammond.  
10.45—Miss Dorothy Dewar, comedienne.  
11—"Big Ben" and Announcements.  
11.5—2FC Dance Band until midnight.  
11.55—National Anthem; Close down.

## 2 BL

## EARLY MORNING SESSION.

- 7.15—G.P.O. Clock and Chimes.  
7.24—Musical Programme from the Studio.  
7.29—Physical Training and Health Exercises.  
7.25—Health Hints.  
7.30—Physical Training & Health Exercises.  
7.43—G.P.O. Clock and Chimes.  
7.46—Weather Forecast.  
7.48—Sporting Information.  
7.49—Broadcaster's Special News Service.  
8—G.P.O. Clock and Chimes; Close down.

## MORNING SESSION.

- 10—G.P.O. Clock and Chimes.  
10.1—Weather Report and Forecast.  
10.3—Broadcasters' News Service from Rugby.  
10.8—Daily Telegraph News Service.  
10.23—Musical Programme from the Studio.  
10.28—Daily Telegraph News Service.  
10.53—Musical Programme from the Studio.  
11—G.P.O. Clock and Chimes.  
11.1—Musical programme from the Studio.  
11.18—Vegetable Market Reports.  
11.21—Fruit Market Reports.  
11.24—Other Market Reports.  
11.24—Boats in call by Wireless.  
11.27—Weather Report and Forecast by courtesy of Govt. Meteorologist.  
11.28—Shipping Information.  
11.31—Information re Interstate and Overseas Mail.  
11.34—Women's Session, conducted by Mrs. Jordan. A talk on "Spirit," by Miss G. Varley.  
11.40—Social Notes by Mrs. Jordan.  
11.45—Mrs. Jordan replies to correspondents.  
12—G.P.O. Clock and Chimes.  
12.1—Talk on "The Holidays Outfit," by Mrs. Jordan.  
12.25—News from the Sun.  
12.36—G.P.O. Clock and Chimes.  
12.31—Sydney Stock Exchange Calls.  
12.35—News Service from the Sun.  
12.45—Billie's International Quartette, three.  
110a Caryl Castling.  
1.30—G.P.O. Clock and Chimes.  
1.31—Weather Report.  
1.33—Sydney Stock Exchange Calls.  
1.36—Track Gallies and Sporting Information.  
1.45—Sun Newspaper's News Service.  
2—G.P.O. Clock and Chimes; Close down.

## AFTERNOON SESSION.

- Having Information broadcast by courtesy of the Sun.  
3—G.P.O. Clock and Chimes; Weather Report and Forecast by courtesy of Mr. C. J. Maree, Govt. Meteorologist.  
3.5—Social Notes from the Sun.  
3.10—Sun Newspaper's News Service.  
3.15—David Jones' Tea Room Trio.  
3.20—G.P.O. Clock and Chimes.  
3.31—News from the Sun.  
3.48—Musical programme from the studio.  
4—G.P.O. Clock and Chimes; David Jones' Tea Room Trio.  
4.15—Social Story.  
4.20—Musical programme from the studio.  
4.45—Producers' Distributing Society's Vegetable and Market Fruit Report.  
4.50—Shipping Information when available.  
4.52—Day's Racing resume on race days.  
4.55—News from the Sun.  
4.58—Resume of to-night's programme.  
5—G.P.O. Clock; Close down.

## EARLY EVENING SESSION.

- 6.45—G.P.O. Clock and Chimes.  
6.45—Track George and the kiddies.  
6.40—Favilion Diaper Orchestra under the direction of Mr. Cec. Morrison.  
Special Country Session.  
7—G.P.O. Clock and Chimes.  
7.1—Australian Mercantile Land & Finance Co's Report.  
7.5—Weather Report and Forecast by courtesy of Mr. C. J. Maree, Govt. Meteorologist.  
7.9—Stock Exchange Reports.  
7.14—Producers' Distribution Society's Fruit and Vegetable Report.  
7.20—Fruit and Vegetable Reports (Sun).  
7.23—Grain and Fodder Report (Sun).  
7.26—Daily Produce Report (Sun).  
7.30—Primary Producers' Newspaper Report on London Butter Market.  
7.33—Country News from the Sun.  
7.49—A Lecture on "Ballina," by Mr. Harward.

## NIGHT SESSION.

- 8—G.P.O. Clock and Chimes; Broadcasters' Typical Chorus.  
8.3—Newtown Band, broadcast from Industrial Hall, Newtown.  
8.7—Miss Marie Hobbs, Irish soprano.  
8.10—Mr. Bobby Watson, comedian.  
8.17—Miss Mary Neld, mezzo contralto.  
8.24—Mr. Hugh Garwin, baritone.  
8.31—Mr. Swanson, tenor.  
8.58—Resume of following day's programme.  
9—G.P.O. Clock and Chimes; Weather report and Forecast by courtesy of Mr. C. J. Maree, Govt. Meteorologist.  
9.2—John and Nellie Steen, instrumentalists.  
9.15—Interval.  
9.20—Miss Myriell Hibbs.  
9.27—Newtown Band.  
9.34—Mr. Swanson.  
10.1—Mr. Bobby Watson.  
10.8—Mr. Hugh Garwin.  
10.15—A. Hammett and the Ambassadors Dance Band, broadcast from the hallfront.  
10.25—Miss Marie Hobbs, during the interval.  
10.35—John and Nellie Steen, instrumentalists.  
11—G.P.O. Clock and Chimes; National Anthem.

## 2 GB

## EVENING SESSION.

- 8.45—Talks to Children by A.I.C.  
8.55—"Musicals," by Macon McMillan.  
"The Plunkett System."  
7.30—Introduction to the Science of Electro-culture, by A. Carr, Bennett.  
7.46—Announcements.  
7.50—Duets for two violins and piano.  
8.3—Address by Dr. J. J. Van der Leeuw, I.L.D.  
8.20—Songs by Miss Nellie Ravera, contralto.  
8.28—Guessing Competition: First prize, one guinea; 12 consolation prizes of 5s. 6d. each.  
8.33—String Quartette.  
8.38—Announcements.  
9.5—Violin solos, by Dan Scully.  
9.12—Songs by Nellie Ravera.  
9.20—Talk on Radio.  
9.26—Celli solos, by Muriel Lang.

- 9.28—Instrumental Quartette.  
9.32—"Great Thoughts from Great Minds," by Prof. E. Wood.  
10—God Save the King.

## 3 LO

## MIDDAY SESSION.

- 12 noon—Time Signal; British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Services.  
12.45—Stock Exchange Information; Shipping Intelligence.  
12.50—Meteorological Information; Weather Forecasts for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports. "The 3LO Girl" competition notes.  
1—Time Signal.  
1.1—Studio Orchestra.  
1.10—Alma Horlock, soprano.  
1.17—C. Richard Chubb, flute.  
1.24—Studio Orchestra.  
1.34—Alma Horlock, soprano.  
1.40—Taama Tiernan, cello.  
1.47—Studio Orchestra.  
2—Close down.

## AFTERNOON SESSION.

- 3—Reinold Bradley, violin.  
3.10—Clarie Pope, "Koloour Comedy Koom."  
3.17—Miss Flora Pell, "Domestic Science."  
3.26—National Music. A lecture on German music, by Mr. J. Sutton Cross, illustrated by the Students of the University of Melbourne.  
4.30—Mrs. Dorothy Silk, "Homecrafts."  
4.45—"Herald" news service. Stock Exchange Information. "The 3LO Girl" competition.  
5—Close down.

## EVENING SESSION.

- 3.45—Children's Hour; Answers to letters and Birthday Greetings.  
3.46—Alma Horlock, soprano.  
3.5—My Lizzie Kookaburra sisters and brothers, I'm going to tell you about a talk I've had with "Santa Claus"—have you seen him?  
4.10—Report Hazell will be sure to make you laugh.  
4.27—Alma Horlock, soprano.  
4.32—"Little Miss Kookaburra" will tell the bigger children some more about "The Trials of the Tepee."  
4.40—"Argus" and "Herald" News Services; Reuters and the Australian Press Association Cables.  
4.52—Stock Exchange Information; Overseas Shipping.  
4.57—Fish market reports, by J. R. Borrett Ltd.  
5—River reports.  
5.2—Market Reports, by the Victorian Producers' Co-operative Co. Ltd.; Haymarket Sheep Sales; Poultry, grain, cheese, hbs, straw, jute, dairy produce, potatoes and onions.  
7.15—Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.  
7.20—Under the auspices of the Devon Australian League, Mr. Marcus Burke, "A Real Merry Christmas."  
7.48—Mr. W. Sanderson. "A further talk on book binding."  
8—Concert, transmitted from the Augustine Congregational Church, Auburn, church choir combined with Melbourne Lyric Choral Society, Ltd.  
8.15—From the Studio: Mr. Harold Elvins, pianoforte recital.  
8.48—Studio Orchestras.  
9.15—Mrs. Hazel Hassell and Elsie Day, in "Heterogeneity."  
10.2—Franklin Stotham and Aches Fortson, clarinet and piano.  
10.12—"Argus" news service. British Official Wireless news. Announcements.  
10.22—J. Alexander Brown, baritone.  
10.29—Bessie Gannon, violin.  
10.36—Rupert Hassell and Elsie Day will entertain you again.



- 10.43—Meteorological Information. Announcements.  
 10.52—J. Alexander Brown, baritone.  
 11—Our Great Thought for To-night is:—  
 "Better to expose ourselves to ingratitude than fail in assisting the unfortunate.—  
 De Couze.  
 11.15—MLO Melody Masters.  
 11.40—God Save the King.

**3 AR**

**MORNING SESSION.**

- 11.50—British Official Wireless Press, received from Rugby Super Wireless Station, England; Express Train Information; "Age" News Bulletin, exclusive to 3AR.  
 12—Time Signal Chimes. Studio Barometer Readings. 1st Weather Forecast. Sporting Fixtures; Events of the day.  
 12.5—Musical selections, received from Hoyt's De-Luxe, Bourke Street. Mr. T. L. Campbell at the Wurliatzer.  
 12.50—Stock Exchange news. Market reports.  
 12.40—Musical selections.  
 12.55—Shipping Movements. Mail Notices.  
 1—Close down.

**AFTERNOON SESSION**

- 2.30—Hoyt's Premier Orchestra, under direction of Cecil W. Frazer.  
 3—The Melbourne Piano Trio.  
 3.16—Miss Rita Gibson, soprano.  
 3.28—Mr. Bert Pettifer, violinist.  
 3.36—Miss Rita Gibson, soprano.  
 3.37—Mr. Ronald Brantley, cellist.  
 3.44—The Melbourne Piano Trio.  
 4—Time Signal Chimes. Studio Barometer Readings. Hoyt's Orchestra.  
 4.15—Evening Amusement Guide.  
 4.15—Time Signal Chimes; 2nd Weather Forecast. Close down.

**EARLY EVENING SESSION.**

- 4.45—Children's corner, by Uncle Bud.

**EVENING SESSION.**

- 7.50—British Official Wireless Press. Studio Barometer Readings. Time Signal Chimes.  
 8—Time Signal Chime. The Footwarmers' Jazz Band.  
 8.20—Miss Dorothy Adams, D.M.S.V., soprano.  
 8.27—Mr. John Roy, bass.  
 8.34—Mr. A. J. Sullivan in a Travelogue. "Australia and New Zealand."  
 8.49—Miss Gertrude Carruthers, violinist.  
 8.54—Miss Violet Howard, mezzo.  
 9.1—The Footwarmers' Jazz Band.  
 9.23—Mr. George Bignell, tenor.  
 9.30—Miss Dorothy Adams, soprano.  
 9.37—Miss Gertrude Carruthers, violinist.  
 9.44—Mr. John Roy, bass.  
 9.51—Miss Violet Howard, mezzo.  
 9.58—Mr. George Bignell, tenor.  
 10—Time Signal Chimes. Studio Barometer and Thermometer readings. "Age" news bulletin, exclusive to 3AR.  
 10.7—Lorgetta's Ballroom Orchestra.  
 10.40—Close down.

**4QG**

**MIDDAY SESSION.**

- 12.56—Time-Signal.  
 12.58—Time Signal.  
 1—Market Reports supplied by the Council of Agriculture. Weather information, supplied by Commonwealth Weather Bureau. News, supplied by "The Daily Mail." News Service, supplied by "The Daily Standard."  
 1.20—From Hotel Carlton. Lunch Music from the Lounge. Hotel Carlton, played by Hotel Carlton Symphony Orchestra.  
 2—Close down.

**AFTERNOON SESSION.**

- 3.00—From Hotel Carlton. Afternoon Tea Music, played by Hotel Carlton Symphony Orchestra.  
 4.15—From the Studio; News Service, supplied by "The Telegraph."  
 4.30—Close down.

**EARLY EVENING SESSION.**

- 5—News Service supplied by the "Daily Standard."  
 5.30—Children's Session: Stories by "The Standard."  
 7—From the Council of Agriculture Studio; Market Reports. Lecturette: "New Year Prospects for the Pig Farmer"—Mr. E. J. Shelton, Inspector in Pig Raising.  
 7.50—From the Studio of 4QG, Stock Reports; Announcements.  
**NIGHT SESSION.**  
 7.45—Lecture Session: "The Children's Music Corner," conducted by "The Music Man."  
 8—From the "White House"; From Woolloomooloo.  
 8—Metropolitan Weather Forecast.  
 9.5—From the Studio; Federal Band—Anglo Quartette.  
 10—"The Daily Mail" news. Weather news. Close down.

**5CL**

**MORNING SESSION.**

- 11.26—G.P.O. Chimes.  
 11.31—Stock Duo Art number.  
 11.40—"Advertiser" news service.  
 11.55—Vocalion number.  
 12—G.P.O. Chimes.  
 12.1—Advertiser news service.  
 12.16—Stock Duo Art number.  
 12.30—5CL Studio Orchestra in concerted numbers.  
 1.13—Ward & Co's Stock Exchange Intelligence, official weather synopsis, and station announcements.  
 2—G.P.O. Chimes.

**AFTERNOON SESSION.**

- 3—G.P.O. Chimes.  
 3.1—Relay from "Maple Leaf" Cafe—Orchestra and numbers.  
 3.45—From the Studio; 1st by Mrs. Coghlin.  
 4—G.P.O. Chimes.  
 4.1—Relay from "Arcadia" Cafe—Orchestra numbers.  
 4.53—Stock Exchange reports, general information and station announcements.  
 6—G.P.O. Chimes.

**EVENING SESSION.**

- 6.30—G.P.O. Chimes.  
 6.31—Ballroom stories.  
 7.30—Market reports.  
 7.40—Mr. Fredericksen, automotive engineer, Vacuum Oil Company.  
 7.50—Care of the Teeth, by Mr. Duncey.  
 8—G.P.O. Chimes.  
 8.1—Mr. Hume Smith's Band.  
 8.10—Mr. James Ribey, tenor.  
 8.14—Mr. Hume Smith's Band.  
 8.20—"Twinkler's" Boys' Club.  
 8.40—Madame D. Beck.  
 8.44—Mr. James Glennon, violinist.  
 9—G.P.O. Chimes.  
 9.1—Weather reports.  
 9.2—Mr. Hume Smith's Band.  
 9.17—Miss Mary Meegan, pianoforte solo.  
 9.22—Mr. James Ribey.  
 9.26—Mr. Hume Smith's Band.  
 9.26—Madame D. Beck.  
 9.40—Mr. Hume Smith's Band.  
 9.40—G.P.O. Chimes.  
 10.15—"Advertiser" News Service.  
 10.25—Miss Mary Meegan, pianoforte solo.  
 10.30—Mr. James Ribey.  
 10.34—Mr. Hume Smith's Band.  
 10.44—Madame D. Beck.  
 10.48—Mr. Hume Smith's Band.  
 11—Close down.

**7ZL**

**MORNING SESSION.**

- 11—G.P.O. Clock Chimes. The "Mercury" news, Stock Market, Shipping, Commercial Intelligence; Weather information. Ships within wireless range.  
 12—G.P.O. Clock Chimes. Close down.

**AFTERNOON SESSION.**

- 3—G.P.O. Clock Chimes. Musical items from the Studio.  
 3.30—Hobart Stock Exchange quotations.

- 2.55—Weather information.  
 4—G.P.O. Clock Chimes. Close down.

**EVENING SESSION.**

- 7—Children's Corner. "Big Brother" chats to his Pa's.

**NIGHT SESSION.**

- 8—G.P.O. Clock Chimes. The "Mercury" special Tasmanian news service. Railway auction produce sales. Weather information.  
 8.5—Hobart Stock Exchange quotations.  
 9.16—Talk by Mr. W. R. Johnson, subject: "What Education has done for the Nations."  
 9.30—Concert from the Studio.  
 9.15—Tasmanian District Weather Reports.  
 9.50—The "Mercury" special interstate news service. Weather synopsis. Station announcements. National Anthem.

**Tuesday, Dec. 21**

**2FC**

**DAILY MORNING SESSION.**

- 7—"Big Ben" and announcements.  
 7.8—Music from the Studio.  
 7.10—Official weather forecast, rainfall, temperatures, astronomical memoranda, shipping intelligence, commercial news, mail services.  
 7.25—Investment market, mining share market, metal quotations.  
 7.35—Wool sales, handicrafts markets, interstate markets, produce markets.  
 7.45—"Sydney Morning Herald" news service.  
 8—"Big Ben"; close down.

**MORNING SESSION.**

- 9.15—The Chimes of 2FC.  
 9.20—Music from the Studio.  
 9.40—Music from the Studio.  
 9.45—Racing talk, by 2FC Racing Commissioner.  
 10—"Big Ben" and announcements.  
 10.5—"Late" "Sydney Morning Herald" News Service.  
 10.15—Music from the Studio.  
 10.45—A Morning Reading.  
 11—"Big Ben"; Australian Free Association and Hunter's Cabins.  
 11.10—Music from the Studio.  
 11.15—A talk on Home Cooking and Recipes by Miss Ruth Furst.  
 11.35—Close Down.

**MIDDAY SESSION.**

- 12—The Chimes of Big Ben; and Announcements.  
 12.5—Stock Exchange, First Call.  
 12.10—Music from the Studio.  
 12.40—Music from the Studio.  
 12.45—Music from the Oak Hall The Oak Hall Trio.  
 12.55—Miss Florence Fulton, vocalist.  
 1—"Big Ben"; Weather Intelligence.  
 1.8—"Evening News" midday news service. Producers' Distributing Society's reports.  
 1.20—Oak Hall Trio.  
 1.28—Stock Exchange—Second Call.  
 1.40—Miss Florence Fulton, vocalist.  
 1.45—Music from the Studio.  
 1.50—"The Oak Hall" Trio.  
 2—The Chimes of Big Ben; Close Down.

**AFTERNOON SESSION.**

- 2.30—The Chimes of 2FC and Announcements.

All communications intended for "Wireless Weekly" should be addressed to Wireless Newspapers Ltd., 51 Castle-reagh Street, Sydney.

- 2.95—A Recital by the pupils of Madame Ada Baker.
- 3.30—Music from the Studio.
- 3.40—From Farmer's Tea Rooms: Miss Joyce Gillespie, soprano, "The Smile of Spring" (Fletcher).
- 3.45—Oak Hall Trio.
- 3.55—Miss Ethel Muller, contralto, "An Emblem" (Thompson).
- 4.—Music from the Studio.
- 4.15—The Oak Hall Trio.
- 4.18—Music from the Studio.
- 4.20—Miss Joyce Gillespie, soprano, "When You are There" (Tate).
- 4.25—The Oak Hall Trio.
- 4.35—Music from the Studio.
- 4.40—Miss Ethel Muller, contralto, "Life there, My Love" (McGinn).
- 4.45—Stock Exchange: Third Call.
- 4.48—Close down.

EARLY EVENING SESSION.

- 6.45—The Chimes of 2 P.C.
- 6.50—"The Hello Man" talks to the Children
- 6.55—A Serial Story for the older children.
- 6.58—From the Hotel Australia, items by the orchestra, under the direction of Miss A. J. Egan.
- 7.10—From the Studio: "Evening News" late News Service, Weather Information.
- 7.25—Dalgety's Market Reports (wool, wheat, Stock, Fruit, and Vegetable Markets).
- 7.40—A talk by Rev. F. H. Roward, "The Outrigger—An outsider from Overseas."

NIGHT SESSION.

- 7.55—Announcements.
- 8—"Big Ben" Broadcast from the Royal Naval, items by the State Military Band.
- 8.20—From the Studio: Miss Mabel Datchelor, soprano.
- 8.35—From the Royal Naval House: Items by the State Military Band.
- 8.40—From the Studio: "The Four Waifs" (a) "Sally Horner," (b) "Cornfield Melodies," (c) "Farewell to the Desert," (d) "Ma Little Hanja," tenor solos, Mr. Sam Lyons.
- 8.55—From the Royal Naval House: Items by the Band.
- 9—From the Studio: Miss Mabel Datchelor, soprano.
- 9.10—"The Four Little Waifs," (a) "Girl a Mine," (b) "A Bower of Roses," (c) "The Syncopeated Village Blacksmith," (d) "I Do."
- 9.20—From the Royal Naval House: The State Military Band.
- 9.35—Mr. Lionel Lawson in violin solo—"Valse Bluettes" (Drigo-Iber).
- 9.45—"The Four Waifs," (a) "Hello, how are you," (b) "Thou art my own Love."
- 9.48—From the Royal Naval House, The State Military Band.
- 10—From the Studio: Miss Mabel Datchelor, soprano.
- 10.15—"The Four Waifs": Duet, "Rose of my Heart," Messrs. Lyons and Wall; bass solo, "Anoop in the Desert," W. Marshall and quartet.
- 10.15—Mr. Lionel Lawson, violinist, "Prophet Bird" (Drigo-Iber).
- 10.24—"The Four Waifs": (a) "Annie Laurin," (b) "Milligan's Picturesque."
- 10.30—Announcements.
- 10.34—From the Wentworth Hotel: Items by the Wentworth New Symphonic Dance Orchestra, under the baton of Mr. Sydney Simpson.
- 10.42—Some Celebrity Records.
- 10.50—More dance numbers from the Wentworth Dance Orchestra.
- 11—"Big Ben," Wentworth Dance Orchestra until midnight.
- 12—National Anthem, close down.

2 BL

EARLY MORNING SESSION.

- 7.15—G.P.O. Clock and Chimes.
- 7.18—Musical Programs from the Studio.
- 7.19—Physical Training and Health Exercises.
- 7.23—Health Hints.

- 7.30—Physical Training and Health Exercises.
- 7.45—G.P.O. Clock and Chimes.
- 7.46—Weather Forecast.
- 7.49—Sporting Information.
- 7.50—Broadcasters' Special News Service.
- 8—G.P.O. Clock and Chimes, Close down.

MORNING SESSION.

- 10.1—Weather Report.
- 10.3—Broadcasters' News Service direct from Rugby.
- 10.8—Daily Telegraph News Service.
- 10.22—Musical Programs from the Studio.
- 10.23—Daily Telegraph News Service.
- 10.25—Musical Programme from the Studio.
- 11—G.P.O. Clock and Chimes.
- 11.3—Musical Programme from the Studio.
- 11.15—Vegetable Market Report.
- 11.19—Fruit Market Report.
- 11.21—Other Market Reports.
- 11.24—London Mail Questions.
- 11.28—Boats in call by Wireless.
- 11.31—Shipping Information.
- 11.53—Weather Report and Forecast by courtesy of Govt. Meteorologist.
- 11.55—Sporting talk by Miss Gwen Varley.
- 11.59—Women's Session; Social Notes by Mrs. Jordan.
- 12.—Mr. Jordan replies to correspondents.
- 12—G.P.O. Clock and Chimes.
- 12.1—Talk by Mrs. Jordan.
- 12.35—News from the "Sun."
- 12.50—G.P.O. Clock and Chimes.
- 12.51—Sydney Stock Exchange Calls.
- 12.55—News Service from the Sun.
- 12.55—Miller's Instrumental Quartette, direction Gilbert Gantling.
- 7.30—G.P.O. Clock and Chimes.
- 7.31—Weather Report.
- 7.35—Sydney Stock Exchange Calls.
- 7.50—Track Gallops and Sporting Information.
- 7.55—Sun Newspapers News Service.
- 8—G.P.O. Clock and Chimes; Close down.

AFTERNOON SESSION.

- Racing Information, broadcast by courtesy of the Sun.
- 8—G.P.O. Clock and Chimes.
- 8.1—Weather Report and Forecast by courtesy of Govt. Meteorologist.
- 8.5—Social Notes from the "Sun."
- 8.10—News from the "Sun."
- 8.15—Civil Service Stores' Trio, direction Miss de Courcy Bremer.
- 3.30—G.P.O. Clock and Chimes.
- 3.31—Sun Newspapers News Service.
- 3.45—Musical programme from the Studio.
- 4—G.P.O. Clock and Chimes.
- 4.1—Civil Service Stores' Trio.
- 4.15—Serial Story.
- 4.20—Musical Programme from the Studio.
- 4.30—Producers' Distributing Society's Vegetable and Fruit Markets Report.
- 4.50—Shipping information when available.
- 4.52—Day's Racing Resume on Race Day.
- 4.55—News from the "Sun."
- 4.58—Resume of night's programme.
- 5—G.P.O. Clock and Chimes. Close down.

EARLY EVENING SESSION.

- 7.45—G.P.O. Clock and Chimes.
- 7.46—Uncle George and the Kiddies.
- 7.48—Faulkner Dinner Orchestra, under the direction of Mr. Eric Morrison.
- Special Country Session.
- 7.50—G.P.O. Clock and Chimes.
- 7.51—Australian Mercantile Land and Finance Association.
- 7.53—Weather Report and Forecast, by courtesy of Mr. C. J. Muxes, Government Meteorologist.
- 7.54—Stock Exchange Reports.
- 7.58—Producers' Distributing Society's Fruit and Vegetable Report.
- 7.59—Fruit and Vegetable Reports (Sun).
- 7.59—Grain and Fodder Report (Sun).
- 7.59—Dairy Report (Sun).
- 7.59—Talk on the "World's Important Happenings," by courtesy of T. Phillips Gibson, Esq.
- 7.59—A Talk on "Tasmania's National Park."
- NIGHT SESSION.
- 8—G.P.O. Clock and Chimes; Broadcasters' Topical Chorus.

- 8.3—Christmas Cousins by the Granville and District Liberal Society, broadcast from Newtown Congregational Church.
- 10.—Al Hammett and the Ambassadors' Dance Band, broadcast from the Ballroom of the Ambassadors. During the intervals between dances, News Reports by courtesy of the Sun Newspapers will be broadcast.
- 12—G.P.O. Clock and Chimes; National Anthem.

3 LO

MIDDAY SESSION.

- 12 noon—Time Signal; British Official Wireless News from Rugby; Reuters and the Australian Press Association Cables; "Argus" and "Herald" News Services.
- 12.45—Stock Exchange Information; Shipping Intelligence.
- 12.55—Meteorological Information: Weather Forecasts for Victoria, Tasmania, South Australia, and New South Wales; Ocean Forecast; River Reports; 3.0 Girl.
- 1.—Studio Orchestra.
- 1.10—Maurot Ralston, sheltie accompaniment.
- 1.17—Douglas Roxburgh, violin.
- 1.24—Studio Orchestra.
- 1.34—At a Bush Picnic: Music, song, and verse by writers and poets of Australia, narrated, M. J. Upton Brown.
- 1.49—Maurot Ralston, sheltie.
- 1.55—Studio Orchestra.
- 2.—Close down.

AFTERNOON SESSION.

- 3.—Studio Orchestra.
- 3.10—J. Alexander Brown, baritone.
- 3.17—"An Fall," of Messrs. Buckley & Nunn Ltd., will give a fashion talk.
- 3.40—Organ Recital by Dr. Floyd, transmitted from St. Paul's Cathedral.
- 4.—Studio Orchestra.
- 4.17—J. Alexander Brown, baritone.
- 4.25—Franklin Simpson, clarinet.
- 4.30—Elsie Davies, soprano.
- 4.35—Matron Moreland, Infant Welfare.
- 4.48—"Herald" News Service: Stock Exchange Information, 3.0 girl.
- 5.—Close down.

EVENING SESSION.

- 6.45—Children's Hour: Answers to letters and Birthday Greetings.
- 6.—Alma Horlock, soprano.
- 6.57—Story for the tiniest ones by Mary Gumleaf.
- 6.57—Thelma Ready will play the banjo for you.
- 6.58—Story for the bigger girls and boys by Mary Gumleaf.
- 6.58—Alma Horlock, soprano.
- 6.58—"Argus" and "Herald" News Services; Reuters and the Australian Press Association Cables.
- 6.58—Stock Exchange Information; Overseas Shipping.
- 6.57—Fish Market Reports by J. R. Borrett, Ltd.
- 7.—River Reports.
- 7.3—Market Reports by the Victorian Producers' Co-operative Co. Ltd.; Haymarket Sheep Sales; Poultry, grain, chaff, hay, straw, etc., dairy produce, potatoes and onions; Market prices of oranges and lemons, by the Victorian Central Citrus Association Pty. Ltd.
- 7.15—Market Prices of Oranges and Lemons by the Victorian Central Citrus Association Pty. Ltd.

NIGHT SESSION.

- 7.20—Under the auspices of the Town Planning Association.
- 7.45—Under the auspices of the University Extension Board, Mr. J. R. Richards, M.A., Christmas Footstool.
- 8.—Dr. Loftus Hilla, Popular Science.
- 8.15—No. 1 is not a brass band. A bar from each of ..... what?
- 8.25—No. 2. You may have heard something similar.
- 8.30—No. 3 is popular.
- 8.35—No. 4 is fashionable.
- 8.37—No. 5. This should be a "snap."



8.41—No. 6. You'll have to "dig" for this one.

8.45—No. 7. Are you wise or 7777?

8.50—No. 8. Muzium in Paris? What are they?

8.55—No. 9. This is something quite unusual. A story made from stories. Six authors have been drawn upon for material. What are they, and from what books are the chapters taken?

9.15—No. 10 is unusually serious.

9.20—No. 11. This lot is musical.

9.30—No. 12. Most mysterious.

9.45—No. 13. Usually serious.

9.49—No. 14. Not really out of place.

9.54—No. 15. Perhaps you will guess the artist easily, but what about the songs?

10—No. 16. It means the same, but is expressed differently.

10.2—No. 17. Now listen carefully.

10.24—No. 18. No need to be scientific for this.

10.27—You don't have to guess this one. The end of mystery. Now guess the announcer.

10.37—"Cardigan" (Mr. H. A. Walter Sporting Editor of the "Argus" and "Australasian") will speak on the Wireless News.

10.47—Bumper ticket goes all funny.

10.57—British Official Wireless News from Rugby; "Arma" News Service; Announcements; Weather Forecast; M.G. Girl.

11—Our Great Thought for Tonight is:—  
"Great thoughts reduced to practice become great acts."—Hazitt.

11.6—M.D. Melody Masters.

11.40—God Save the King.

### 3 A R

#### MORNING SESSION

11.30—British Official Wireless Press, received from Rugby Super Wireless Station, England; Express Train Information; "Age" News Bulletin.

12—Time Signal Chime from G.P.O. Studio Barometer Readings. 1st Weather Forecast: Events of the day.

12.30—Stock Exchange News. Market Reports.

12.40—Musical Selections.

12.55—Shipping Movements. Mail Notices.

1—Close down.

#### AFTERNOON SESSION

2.30—Hoyt's Premier Orchestra, under direction Cecil W. Fraser.

3—Mr. Walter Quirk, solo pianist.

3.17—Miss Edna Stappers, soprano.

3.14—Mr. Herbert Quins, recital.

3.20—Miss Katherine Rogers, contralto.

3.27—Mr. Walter Quirk, solo pianist.

3.34—Miss Edna Stappers, soprano.

3.41—Mr. Herbert Quins, recital.

3.48—Miss Katherine Rogers, contralto.

3.55—Miss Helen Moore, pianist.

4—Time Signal Chime. 2nd Weather Forecast. Hoyt's Premier Orchestra.

4.55—Evening Amusement Guide.

5—Time Signal Chime. Studio Barometer Readings. Close down.

#### EARLY EVENING SESSION

6.45—Children's Corner, by Uncle Mac.

#### EVENING SESSION

7.45—British Official Wireless Press. Studio Barometer Readings. Fat Sheep and Cattle Returns, supplied by courtesy of Messrs. John McNamara & Co. Pty. Ltd.

8—The Troubadours Quartette.

8.7—Mr. Jack Chapman, baritone.

8.46—Eddie & Byron, topical harmonists.

8.57—The Troubadours Quartette.

9.21—A representative of the Victorian Eye-sight Conservation Council will discourse on "What the Council stands for in respect to Motriaria, School, and Factory."

8.30—Mr. Gordon Wilson, tenor.

8.43—Mr. Harold Stevens, pianist.

8.46—Eddie & Byron, topical harmonists.

8.57—The Troubadours Quartette.

9.4—Mr. Reginald Stoneham will speak on "The Art of writing Popular Songs."

9.10—Miss Victoria Graham, soprano.

9.26—Master Bernard Kiersl, violinist.

9.33—Mr. Gordon Wilson, tenor.

9.40—Mr. Jack Chapman, baritone.

9.47—Eddie & Byron, topical harmonists.

9.54—Mr. Harold Stevens, pianist.

10—Time Signal Chime from G.P.O. Studio

Barometer Readings. "Age" news service.

10.10—Lugnetti's Ballroom Orchestra.

11—Time Signal. Close down.

## 4 Q Q

#### MIDDAY SESSION

12.55—Tune In.

12.34—Time Signal.

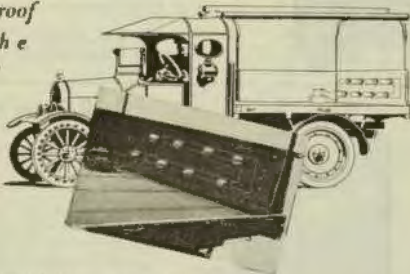
#### AFTERNOON SESSION

3.40—A programme of Music from the Studio.



In "Wireless Weekly" of December 10th, appeared an advertisement for the Metropolitan Electric Co. Ltd., 27-29 King Street, Sydney, featuring the "New Radiobee Circloid." Through a printer's error the illustration of the coil was shown upside down and we are, therefore, showing in the illustration herewith the coil in its correct position.

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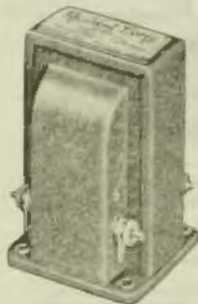


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4.15—"The Telegraph" news.  
 4.50—Close down.

#### EARLY EVENING SESSION.

- 6.—News Service supplied by the "Daily Standard." Weather information, supplied by the Commonwealth Weather Bureau; Announcements.  
 6.30—The Children's Session. Stories by "Uncle Ben" and "Uncle Jim."  
 7.—From the Council of Agriculture, Studio: The Farmers' Session. Market Reports. Lecturette: The Value of the Sugar Industry to Queensland and Australia. Mr. W. H. Doherty, secretary, Queensland Cane Growers' Council.  
 7.30—From the Studio: Stock Reports; Announcements.

#### NIGHT SESSION.

- 7.45—Lecture Session.  
 8.—The first portion of to-night's programme will be provided by "The Scotch Entertainers" ("Rab," "Tam," and "Jock").  
 8.—Metropolitan Weather Forecast; concert from the Studio.  
 10.30—From the Studio: "The Daily Mail" News; Weather News; Close down.

### 5CL

#### MORNING SESSION.

- 11.30—G.P.O. Chimes.  
 11.31—Featuring a Stock Duo Art number.  
 11.40—"Advertiser" news service.  
 11.55—Vocalion number.  
 12—G.P.O. Chimes.  
 12.1—"Advertiser" news service.  
 12.16—Featuring a Stock Duo Art number.  
 12.30—5CL Studio Orchestra.  
 1.55—Ward & Co.'s Stock Exchange Intelligence, official weather synopsis, and station announcements.  
 2—G.P.O. Chimes.

#### AFTERNOON SESSION.

- 3—G.P.O. Chimes.  
 3.1—Relay from the "Maple Leaf" Cafe—Orchestral numbers.  
 3.45—From the Studio: Talk by Mrs. Deebill.  
 4—G.P.O. Chimes.  
 4.1—Relay from the "Arcadia" Cafe—Orchestral numbers.  
 4.55—Stock Exchange Reports; General Information and Station Announcements.  
 5—G.P.O. Chimes.

#### EVENING SESSION.

- 6.30—G.P.O. Chimes.  
 6.31—Bedtime stories.  
 7.30—Market reports.  
 7.40—Billig talk, by Mr. Jackett.  
 8—G.P.O. Chimes.  
 8.1—Calenna Quartette.  
 8.11—Concert from the Studio.  
 8—G.P.O. Chimes.  
 9.1—Weather Reports.  
 9.2—Concert continued.  
 10—G.P.O. Chimes.  
 10.1—Concert, continued.  
 10.15—"Advertiser" news service.  
 10.25—Concert continued.  
 11—G.P.O. Chimes; National Anthem; and Close Down.

### 7ZL

#### MORNING SESSION.

- 11—G.P.O. Clock Chimes.  
 11.15—"The Mercury" News; Stock Market; Shipping; Commercial Intelligence; Weather Information; Luncheon Selections.  
 12—G.P.O. Clock Chimes; Close Down.

#### AFTERNOON SESSION.

- 5—G.P.O. Clock and Chimes; musical items from the Studio.  
 5.30—Robert Stock Exchange Quotations.  
 5.55—Weather Information.  
 4—G.P.O. Clock Chimes; Close Down.

#### EVENING SESSION.

- 7—Children's Corner, "Big Brother" chats to his pals.



7.15—The Adventures of George, the Bookshelf Cat, by "Aunt Bella."

NIGHT SESSION.

- 8.—G.P.O. Clock Chimes; the "Mercury" Special Tasmanian News Service; Railway Auction Produce Sales; Weather Information.
- 8.5—Hobart Stock Exchange Quotations.
- 9.16—Literary Pages and Library Lists, by Mr. W. E. Fuller.
- 9.30—Musical Items from the Studio; Special Request numbers.
- 9.15—Tasmanian District Weather Reports.
- 9.56—The "Mercury" Special Interstate News Service; Weather Synopsis; Station Announcements; National Anthem.

Wednesday, Dec. 22

2 FC

EARLY MORNING SESSION.

- 7.—"Big Ben" and Announcements.
- 7.5—Music from the Studio.
- 7.10—Official Weather Forecast; Rainfall; Temperatures; Astronomical Memoranda; Shipping Intelligence; Commercial News; Mail Services.
- 7.25—Investment Market; Mining Share Markets; Metal Quotations.
- 7.35—Wool Sales; Breadstuffs Markets; Intermediate Markets; Produce Markets.
- 7.45—"Bydney Morning Herald" News Service.
- 8—"Big Ben"; close down.

MORNING SESSION.

- 9.15—The Chimes of 2FC.
- 9.20—Music from the Studio.
- 9.40—Music from the Studio.
- 10—"Big Ben" and Announcements.
- 10.5—Late "Bydney Morning Herald" News Service.
- 10.15—Music from the Studio.
- 10.45—A Morning Reading.
- 11—"Big Ben"; Australian Press Association and Buster's Cables.
- 11.10—Music from the Studio.
- 11.15—A Talk on Home Cooking and Recipes by Miss Ruth Purst.
- 11.35—Close down.

MIDDAY SESSION

- 12—The Chimes of Big Ben; and Announcements.
- 12.5—Stock Exchange, First Call.
- 12.16—Music from the Studio.
- 12.40—Music from the Studio.
- 12.45—From Farmer's Oak Hall: The Oak Hall Trio (leader, Mr. Horner Kenby).
- 12.50—From the Studio: Rugby Wireless News
- 1—The Chimes of Big Ben; Weather Intelligence.
- 1.3—"Evening News" Mid-day Service; Producers' Distributing Society's Report.
- 1.20—Oak Hall Trio.
- 1.25—From the Studio—Stock Exchange, Second Call.
- 1.40—Music from the Studio.
- 1.50—From Farmer's Oak Hall: The Oak Hall Trio.
- 2—"Big Ben"; Close Down.

AFTERNOON SESSION.

- 2.30—The Chimes of 2FC and Announcements.
- 2.35—Miss Olive Uren, soprano.
- 2.40—Music from the Studio.
- 2.55—Miss Olive Uren, mezzo.
- 3—From the Studio; Recited by the pupils of Mrs. Stuart Doyle.
- 3.40—From Farmer's Oak Rooms: Miss Kathleen Horne, soprano.
- 3.45—From Farmer's Oak Hall: Oak Hall Instrumental Trio.
- 3.55—Music from the Studio.
- 4—Miss Eileen Temple, contralto. "Sink, sink, Red Sun" (Del Roja).
- 4.5—The Oak Hall Trio.
- 4.10—Miss Kathleen Horne, soprano.
- 4.25—The Oak Hall Trio.

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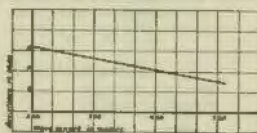
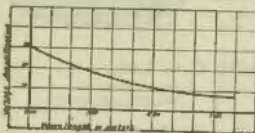
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In the past, the desire of the radio public to listen to distant stations has been responsible for the manufacture and use of many types of radio frequency transformers, which embody such features as lower losses by the elimination of dielectric material, or greater efficiency through the use of larger wire. These transformers, however, have the disadvantage that when used in an unshielded set, each unit acts as a miniature loop aerial, enabling the receiver to pick up strong signals from all local stations, and causing the set, when brought to point of sensitivity, to distort and squeal almost invariably. This is due to the unconfined magnetic field of these types of coils. It was not until the advent of the Toroidal Coil that an efficient

inductance, embodying more than one idea, has been offered to the public. The ALL-AMERICAN Toroid Coil represents a departure from the standard designs of radio frequency transformers, and is the only coil having no external field. Thus the spacing of coils and setting at critical angles to minimise coupling, when used in multi-stage amplifiers, is rendered unnecessary. In brief, ALL-AMERICAN Toroid Coils have the following advantages:

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# RADION

PANELS ~ DIALS ~ SOCKETS ~ KNOBS

- 4.55—Music from the Studio.  
4.40—Miss Gleen Sempie, contralto, "They Say" (Evans).  
4.45—Stock Exchange: Third Call.  
4.46—Close down.

### EARLY EVENING SESSION.

- 5.45—Overture of 27C.  
5.30—The "Hulu Man" talks to the Children assisted by "Jorry."  
6.39—A Serial Story for the older Children.  
6.45—From the Hotel Australia: Items by The Hotel Orchestra, under the direction of Miss A. J. Esau.  
7.10—From the Studio: "Evening News" late News Service: Weather information.  
7.30—Daily's Market Reports (Wool, Wheat, Stock, Fruit, and Vegetable Markets).  
7.40—Close down.

### NIGHT SESSION.

- 7.55—Announcements.  
8—"Big Ben," Broadcast from the Studio: Mr. Norman Jansen, baritone.  
8.1—Miss Elsie Peckles, soprano, "Shadow Song" (Mercher).  
8.5—Mr. Walter Reynolds, comedian, and Miss Adie Collings, contralto: (a) "Hi Diddle Diddle" (b) "The Fact Is" (c) "Poor Papa."  
8.16—Miss Gertrude Mack will talk on—"Christmas time in California."  
8.30—Miss Audrey Allen, contralto.  
8.42—Mr. Ewart Chaplin, 27C accompanist, in pianoforte solo: (a) "Softly and Tenderly" (Bach); (b) "Waltz in E Minor" (Chopin); (c) "Etude in G Flat" (Chopin).  
8.50—Mr. Walter Hunt and Miss Eve Warhurst in a one-act play.  
9—Miss Elsie Peckles, soprano: (a) "Do you know my Garden?" (Wood); (b) "The Beautiful Blue Danube" (Strauss).  
9.5—"Woolloomooloo," an Australian journalist will talk some of his experiences when "Hampton the Busy" in America interspersed with song and story.  
9.25—Mr. Norman Jansen, baritone.  
9.32—Mr. Ewart Chaplin in pianoforte solo.  
9.25—Miss Elsie Peckles, soprano, "Night at Sea" (Phillips).  
9.42—Mr. Walter Hunt and Miss Eve Warhurst in a one-act play.  
9.50—Mr. Walter Reynolds and Miss Adie Collings: (a) "Moonlight and Roses Blue" (b) "Memory-making" (Evert Stunley); (c) "I'm Feeling Blue" (Merrell).  
10.16—Miss Audrey Allen, contralto.  
10.18—Reynolds Collings "Sweetest little Rose" (b) "Shot Up" (c) "Don't take Me Back."  
10.18—Miss Audrey Allen, contralto.  
10.32—From the Wentworth Hotel: Items by the New Wentworth Symphony Dance Orchestra, under the direction of Miss A. J. Esau.  
10.40—Some Celebrity Records.  
11—Wentworth Dance Orchestra until midnight.  
12—National Anthem: close down.

### 2 BL

### EARLY MORNING SESSION.

- 7.15—G.P.O. Clock and Chimes.  
7.16—Musical Programme from the Studio.  
7.19—Physical Training and Health Exercises.  
7.25—Health Hints.  
7.30—Physical Training and Health Exercises.  
7.45—Weather Forecast.  
7.48—Sporting information.  
7.50—Broadcasters' Special News Service.  
8—G.P.O. Clock and Chimes: Close down.

### MORNING SESSION.

- 11—G.P.O. Clock and Chimes.  
11.1—Weather Report.  
11.3—Musical Programme from the Studio.  
11.17—Daily Telegraph News Service.  
11.30—Women's Session, conducted by Mrs. Jordan: Social Notes.  
11.40—Mrs. Jordan replies to correspondents.  
11.50—A talk on "Infant Welfare," by Dr. Morris.  
12.15—Musical Programme from the Studio.



- 12.25—Market Reports.  
 12.31—London Market Quotations.  
 12.35—Broadcasters' Special Rugby News Service.  
 12.38—Boats in call by Wireless.  
 12.43—Weather Report and Rainfall by courtesy of Govt. Meteorologist.  
 12.42—Shipping Information: Arrivals and Departures.  
 12.44—Mail, Interests and Overseas.  
 12.46—News Service by courtesy of the Sun.  
 1.—G.P.O. Clock and Chimes.  
 1.—Pianoforte. Lecture Recital broadcast from the Fitz Roy Gallery, Anthony Rodgers, by Mr. Arnold R. Moore.  
 1.46—Sydney Stock Exchange Cables.  
 1.43—Sporting Information and Race Results from the Sun.

## AFTERNOON SESSION.

- 2.—G.P.O. Clock and Chimes.  
 2.1—Musical Programme from the Studio.  
 2.18—News from the Sun.  
 2.30—G.P.O. Clock and Chimes.  
 2.31—Weather Report.  
 2.33—Musical Programme from Studio.  
 2.45—Social News from the Sun.  
 2.50—Sun Newspapers' News Service.  
 3.—G.P.O. Clock and Chimes.  
 3.1—Musical Programme from the Studio, under the direction Miss K. Jordan.  
 3.30—Race Results.  
 3.35—News from the Sun.  
 3.45—Musical programme from the Studio.  
 4.—G.P.O. Clock and Chimes.  
 4.1—Racing Results.  
 4.5—News from the Sun.  
 4.15—Serial Story.  
 4.20—Producers' Distributing Society's Fruit and Vegetable Report.  
 4.35—Race Results.  
 4.38—Musical Programme from Studio.  
 4.45—Shipping news when available.  
 4.53—Race Results.  
 4.55—Resume of Night's Programme.  
 5.—G.P.O. Clock and Chimes.  
 5.1—Resume of Day's Racing.  
 5.5—Close down.

## EARLY EVENING SESSION.

- 5.45—G.P.O. Clock and Chimes.  
 5.46—Uncle George and the Kiddies.  
 5.46—Favillon Dance Orchestra under the direction of Mr. Cec. Morrison.  
 Special Country Session.  
 7.—G.P.O. Clock and Chimes.  
 7.1—Australian Mercantile Land and Finance Co's Report.  
 7.5—Weather Report and Forecast, by courtesy of Mr. C. J. Mares, Government Meteorologist.  
 7.9—Stock Exchange Reports.  
 7.14—Producers' Distributing Society's Fruit and Vegetable Report.  
 7.14—Fruit and Vegetable Report (Sun).  
 7.22—Grain and Fodder Report (Sun).  
 7.26—Dairy Produce Report (Sun).  
 7.29—Country news from the Sun.  
 7.43—Talk on Books, Wise and Otherwise.

## NIGHT SESSION.

- 8.—G.P.O. Clock and Chimes. Broadcasters' Topical Chorus.  
 8.3—Broadcasters' Trio.  
 8.13—Mr. H. Hinchliffe, baritone.  
 8.26—Miss Ella Goodman, soprano.  
 8.27—Mr. S. Critchden will talk on "Building a Valve Set."  
 8.47—Mr. Stanley R. Catlett, tenor.  
 8.54—Resume of following day's programme.  
 Weather Report and Forecast.  
 9.—G.P.O. Clock and Chimes.  
 9.—Mr. Douglas Graham, baritone.  
 9.5—Miss Edna Lister, contralto.  
 9.15—Broadcasters' Trio.  
 9.25—Inter-val.  
 9.30—G.P.O. Clock.  
 9.31—Dust: Messrs. S. Catlett and H. Hinchliffe.  
 9.35—Miss Ella Goodman.  
 9.42—Mr. H. Hinchliffe.  
 9.46—Broadcasters' Trio.  
 9.54—Mr. S. R. Catlett.  
 10.1—Mr. Douglas Graham.

- 10.5—Miss Edna Lister.  
 10.16—Al. Hammett and the Ambassadors Dance Band, broadcast from the ballroom of the Ambassadors. During the interval between dances, News Reports by courtesy of the Sun will be broadcast.  
 12.—G.P.O. Clock and Chimes; National Anthem.

## 2 GB

## EVENING SESSION.

- 6.45—Talks to Children by A.R.C.  
 7.15—Fifth Lesson on Dressmaking, by Miss Francis Madden.  
 7.48—Announcements.  
 7.55—Instrumental Trio.  
 8.3—Address by J. J. Van der Looew.  
 8.20—Vocal Quartette.  
 8.30—Violin solo by Lloyd Davies.  
 8.35—"Betty Comes to Town."  
 8.55—Herbert Hiccox, songs.  
 9—Announcements.  
 9.5—Instrumental Trio.  
 9.20—Music from the Studio.  
 9.50—Vocal Quartette.  
 9.50—Talk on "French Revolution," by Mr. A. V. Doyle.  
 10.—"Great Thought from Great Minds," by Prof. Wood.  
 God Save the King

## 3 LO

## MID-DAY SESSION.

- 12.—Time Signal; Router's and the Australian Press Association Cables; "Argus" and "Herald" News Services; Shipping Intelligence.  
 12.45—Stock Exchange Information.  
 12.50—Meteorological Information: Weather forecast for Victoria, Tasmania, South Australia and New South Wales; Ocean forecasts; River Reports.  
 1.—Time signal.  
 1.1—Studio Orchestra.  
 1.17—Hau Johnson's Monte Carlo Band.  
 1.21—Chastic Pope, Kennedy Koloured Room.  
 2.—Close down.  
 2.50—Description of the Trial Handicap, Werribee Races, by "Musket," of the "Sporting Globe."

## AFTERNOON SESSION.

- 3.—Description of Jumpers' Flat Race, by "Musket" of the "Sporting Globe."  
 3.5—Studio Orchestra.  
 3.16—Miss Frances Fraser, London. "Cabalare and Kings."  
 3.20—Description of the Waller Handicap, Werribee Races, by "Musket," of the "Sporting Globe."  
 3.35—Studio Orchestra.  
 3.46—Mascoo Ralston, ambrette.  
 3.52—Walter Smith, cornet.  
 4.—Description of Werribee Handicap, by "Musket," of the "Sporting Globe."  
 4.5—Studio Orchestra.  
 4.5—Slater Peck, "Mothercraft."  
 4.25—Dorothy Hawburgh, violin.  
 4.30—Description of Werribee Plate, by "Musket," of the "Sporting Globe."  
 4.55—Mascoo Ralston, ambrette.  
 4.48—"Herald" News Service; Stock Exchange Information, 3 LO Girl.  
 5.—Description of Werribee Purse, by "Musket," of the "Sporting Globe."  
 5.5—Close down.

## EVENING SESSION.

- 8.45—Children's Hour: Answers to letters and Birthday Greetings.  
 9.—Alma Horlock, soprano.  
 9.7—Story for the wee ones, by "Mary Mary."  
 9.17—Daphne Whitehead will show you how lovely a whistling solo can be.  
 9.22—Alma Horlock, soprano.  
 9.25—Story for the bigger ones, by "Mary Mary."  
 9.40—"Argus" and "Herald" News Services; Router's and the Australian Press Association

- Cables; Shipping Movements; Overseas Shipping; Weather Synopsis.  
 6.42—Stock Exchange Information.  
 6.57—Fish Market Reports by J. R. Borrett Ltd.  
 7.—River Reports.  
 7.3—Market Reports by the Victorian Producers' Co-operative Co. Ltd. Haymarket Sheep Sales; Poultry, Grain, Chaff, Hay, straw, Jute, dairy produce, potatoes and onions.  
 7.15—Market prices of oranges and lemons, by the Victorian Central Citrus Association.

## NIGHT SESSION.

- 7.50—Mr. Wallace Sharland.  
 7.50—Mr. H. C. Slocumbe, "A Chat on Photography."  
 8.—Musical Program, arranged by Mr. Fritz Hart.  
 8.—Capt. Peters, "Books wise and otherwise."  
 9.15—Manus Leo Day.  
 9.25—Elsie Davis, soprano.  
 9.38—Rupert Bazell and Elsie Day, in Harmony.  
 9.55—Manus Leo Day.  
 9.55—Manus Leo Day in a few moments of melody.  
 9.56—Rupert Bazell, Piano-fiddle solo.  
 10.4—Elsie Davis, soprano.  
 10.18—Last Act of "A Cousin from Nowhere," transmitted from His Majesty's Theatre, by permission of J. C. Williamson, Ltd. featuring Miss Maud Parré.  
 10.45—British Official Wireless News from Router; Announcements; 3 LO Girl; "Ariadne" News Service; Weather Forecast.  
 11.—Our Grand Thought: "A man that is desirous to excel should endeavour to do those things that are in themselves most excellent."  
 11.1—3 LO Melody Masters.  
 11.40—God Save the King.

## 3 AR

## MORNING SESSION.

- 11.30—British Official Wireless News, received from British Wireless Station, England, by 3AR's Operator; Events of the Day; Express Train Information; "Age" News Bulletin, exclusive to 3AR.  
 11.5—Time Signal Chimes from G.P.O.; Studio Barometer and Outdoor Thermometer Readings; First Weather Forecast; Sporting News.  
 15.—Time Signal Chime, Studio Barometer Readings, 1st Weather Report, Events of the Day.  
 15.5—Musical Selections relayed from Hoy's De-Luxe Hourly Show, Mr. T. L. Campbell as the Warbler.  
 12.30—Stock Exchange News; Market Reports.  
 12.45—Musical Selections.  
 12.55—Shipping Movements; Mail Notices.  
 1.—Close Down.

## AFTERNOON SESSION.

- Werribee Racing Club: Results immediately after each race, and at half-hourly intervals.  
 2.30—Hoy's Premier Orchestra, under direction of Cecil W. Fraser.  
 3.—The Classic Trio.  
 3.16—Miss Isobel Harris, soprano.  
 3.25—Miss Amelia Clancy, violinist.  
 3.30—Miss Isobel Harris, soprano.  
 3.37—Miss Violet Woods, pianist.  
 3.40—Mr. Stanford Byrne, cellist.  
 3.44—The Classic Trio.  
 4.—Time Signal Chimes; 2nd Weather Forecast; Hoy's Orchestra.  
 4.55—Evening Announcements.  
 5.—Time Signal Chimes; Studio Barometer Readings; Close Down.

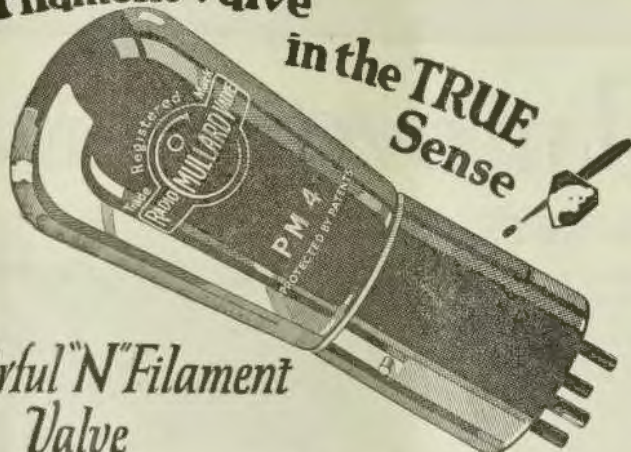
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D.S.A.	1.0	0.20	10/0	10/0	12/0	12/0	12/0
P.M. 1	1.0	0.1	10/0	10/0	12/0	12/0	12/0
P.M. 2	1.0	0.1	10/0	10/0	12/0	12/0	12/0
P.M. 3	1.0	0.1	10/0	10/0	12/0	12/0	12/0
P.M. 4	1.0	0.1	10/0	10/0	12/0	12/0	12/0

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## THE MASTER VALVE

ARKS.5.

### Broadcasting Reaches Encyclopaedic Fame

(Continued from Page 11.)

The international possibilities of broadcasting are set forth in Britannica as follows:

"We may now glance at broadcasting in its international aspect, and more especially European broadcasting, as a possible cementing influence between nations now becoming daily conscious of a unity that the foreground of their history seems to deny. In 1925, when all countries of western, northern, and central Europe had to a great extent absorbed broadcasting as a normal element in their national life, it became manifest that apart from incidental divergencies, all broadcasting concerns, acting quite independently of one another, were putting much the same classes of fare before their respective publics, and thereby disclosing a cultural unity in Europe hitherto scarcely suspected. The barriers of political and racial geography were overleaped. In each country, those of the public who possessed long-range listening sets acquired (in spite of interferences which hamper this type of reception) a double interest in remote stations, on account of their transmissions and on account of their interferences with home stations. Strange place names—and even, through modulated telephony, distant personal voices—became familiar. The movement in favor of an international language acquired new life and importance. In fact, a whole new world of possibilities of European intercourse is being opened up."

Analyzing the growth of broadcasting in the United States Mr. Bown calls attention to the fact that while 1,105 stations had been licensed up to August, 1924, only 535 of them were surviving this year.

"It is certainly arguable," he remarks, "that the movement begun by overshooting the mark. The present tendency to which the indications point is toward consolidation for better service, in point both of utility and of entertainment, and toward an economically sounder radio industry."



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DAVID JONES'





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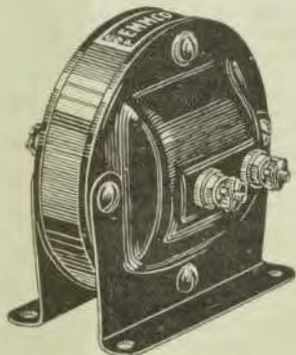
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SYDNEY

## A. Cunningham

*The famous English baritone at 2FC is a man of experience.*

**Y**OU cannot help feeling when you meet Alfred Cunningham that here is a man who has seen the world at its best and at its worst. As you talk things over with him, he will reluctantly allude to some minor characteristic of the natives of Portuguese East Africa, or he might give you a brief description in about ten or fifteen words of what it feels like to appear at a Royal Command performance. Then just as you think you have him nicely warmed up, he will turn the subject aside from himself with a choicely worded anecdote.

"Nowhere in the world, however," he will resume in the half serious tone which suits his rich baritone so well. "has my work met with a warmer reception than at the Long Bay and Parramatta gaols. In fact the Governors of both places are emphatic in the assertion that they would like me for a permanent guest."

But, quite seriously, Mr. Cunningham is rather proud of the enthusiasm on the part of the Governors, ranking it second only to the compliment recently paid to him by Kennerley Rumford during the visit of the latter, when, with Dame Clara Butt, he heard Mr. Cunningham sing at a concert at the Town Hall. He told a mutual friend that he would be a proud man could he but sing as well himself.

Kennerley Rumford also told Ronald Foster that there was no baritone with the British National Opera Co. equal to Alfred Cunningham, who ought to be, therefore, in the front rank in London and not hidden away in Sydney. Dame Clara Butt said, the same night, to Mr. Portus (who repeated the remark to me) that she had enjoyed A. C.'s items the best of any on the programme.

While he was induced to go upon the professional stage in the first instance by the manager of the Grand Opera Co., he later appeared—for four years—with the most famous British male voice quartette, the West-



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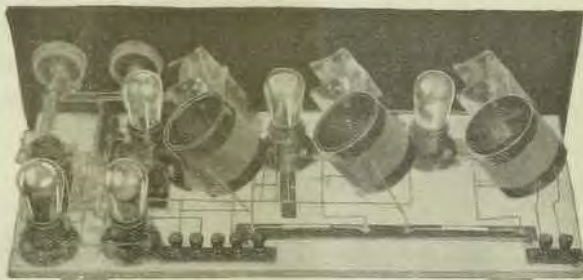


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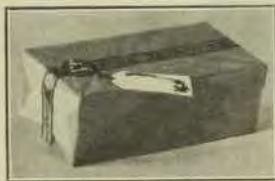
29 Royal Arcade  
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minster Glee Singers. In addition to concert work, Mr. Cunningham has made successful appearances in comic opera and musical comedy.

He is well known throughout Australia and New Zealand as a member of the Westminster Singers, and formerly with the equally famous Scarlet Troubadours. After the completion of the former tour, he returned to London, where he fulfilled engagements in most of the principal theatres, including Drury Lane, the Coliseum, the London Opera House, the Palladium, and the Alhambra. At the last named theatre he was specially engaged for an operatic role in a gorgeous spectacular production with a huge cast—"Eastward Ho,"—produced by Oscar Asche with a view to beating the record of Chu Chin Chow. The role was so exacting that, although Mr. Cunningham had no less than half a dozen understudies, the management begged him not to stay off, as they feared that not one of the understudies was equal to doing anything like justice to the part which called for incisive acting as well as strenuous singing.



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Enterprise characterises the latest novelty introduced by the Metropolitan Electric Co., Ltd., in the form of a very attractive Christmas packing for their entire range of "Radiokes" products.

These well-known products, by virtue of their efficiency and excellent finish, are eminently suitable for presentation, and will constitute a useful gift by which the donor will be appreciatively remembered the whole year through. These goods, in their popular distinctive packing, are further treated to special Yuletide adornment with appropriate inscriptions and address label, etc. Congratulations for their Season's slogan, "Make this a Radiokes Christmas."



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## BOOK REVIEW.

The last issue of "The Radio Mail," the interesting little monthly journal produced by Messrs. A. C. Cossor Ltd., is of particular interest. A special feature is an article outlining how radio is being killed by poor demonstrations, while in another article some wonderfully good ideas are outlined in window dressing. Featured also is the circuit of a suggested receiver which the dealer may use for demonstrations, and an examination of the circuit reveals that it is of exceptional merit. There is a great deal in this little paper that is of sales, as well as technical interest, and we recommend all dealers to secure a copy of it.

## CARBONCEL BATTERIES.

Mr. B. H. McLachlan, of Paratoo Station, South Australia, writes, as follows:—

"I have used the Carboncels on my wireless set ever since I returned from England in September last year. I started off with four cells complete, with the exception that two of them had glass jars in lieu of the originals, which were broken on the journey out. These worked quite satisfactorily for about six months with the addition of a little rain water from time to time.

"At that time I was able to replace the glass jars with the proper thing—I also put in new zincs in these two cells—I really think before it was necessary. The zincs in the other cells lasted nearly ten months, and the new ones put in when the glass jars were discarded are still going.

"They are far and away better than the old accumulator idea as they need no attention. The set they have worked for me has four D.E.R. valves fitted. They have been very satisfactory and trouble free, and make wireless much less of a bother."

This may be of interest to many of our country readers who experience difficulty with their "A" batteries. Carboncels require very little attention and last for months without charging. To charge them, a handful of sal-ammoniac dissolved in water is all that is required. An excellent "A" battery system is thus available to many people.

## Buy a Philco for Christmas!

Because it spreads the Christmas joy over all the year—

Because it gives strength, purity and richness to Wireless—

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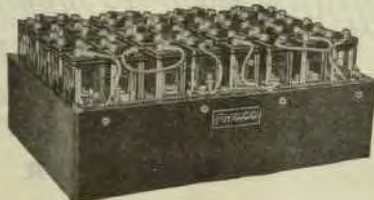
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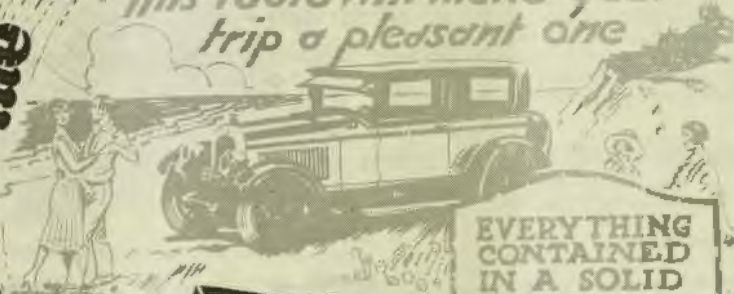


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**CASH OR TERMS**

# All Readers' Queries Answered Here

In conjunction with Farmer's Broadcasting Service the Technical Editor of "Wireless Weekly" will answer all listeners' queries arising from the wavelength change. Answers will appear in these columns and will be broadcast from 2FC each Thursday night.

C.S. (Newstead, Brisbane).—

Q. 1: I intend building the Harkness Reflex Receiver, and am anxious to know what model Brown speaker would you recommend to give the best results, or is there any type of speaker you could recommend for this circuit?

A. 1: This is a matter which you will have to judge for yourself, as what suits my ear may not suit yours. Why not visit one or two of the dealers and hear different speakers for yourself.

Q. 2: Will an RI detector give better results than a Harlie?—

A. 2: Really, I don't know, as I haven't tried the RI. Why not stick to the Harlie, which has proved itself.

Q. 3: Is it possible to tune in Southern stations on loud speaker after 4QG has closed down? And will it be possible to cut out 4QG with a wave trap, and tune in Southern stations. I am a mile or more from 4QG.

A. 3: There are so many factors to be considered that I can't tell you with any definiteness whether you will be able to tune in interstate stations at all. I am afraid that you are too close to your local station. Still try the wave trap.

E.H.C. (Mill Bend, South Brisbane).—

Q. 1: What brand of neutralizers were used in the neutralizer of "Wireless Weekly," 22/10/26?

A. 2: The Airone kit was originally used, although there is no reason why Gridlers or Radicles should not be used.

Q. 2: What are the correct connections to top and bottom of Airone neutralizers?—

A. 2: The top connection of the secondary is for the grid and the bottom connection of the secondary is the grid return or filament minus. In the primary the top is the B plus and the bottom is the plate, whereas the centre connection is the neutralizing tapping. You wouldn't do any harm by reversing the primary leads and noting the result.

Q. 3: Neutralizing—bought two "Mike Mike" neutralizers—understand your article in O.K.—but don't think I have neutralized my 201A's—could it be well-nigh impossible—any information available, please?—

A. 1: There is no reason why the 201A valves should not be neutralized. Personally, my own neutrolyne is just brought to the edge of oscillation, where I prefer it. Try lowering the plate voltage on your radio frequency valves.

Q. 4: What is the correct rheostat for 201A valves?—

A. 4: A 20 or a 25 ohm rheostat will control one valve of the 201A type, but where one rheostat is used to control two valves a 5 ohm rheostat is the correct value.

R.H.H. (Liverpool).—

Q. 1: Re the accumulator "B" battery published in last year's "Wireless Weekly." A little over two years ago I purchased half a gross of test tubes, one inch in diameter, and four inches long, to build this accumulator, but was not "educated" enough to care as to what I would do with them if the tubes I have will do instead of the six 1½ in. as advised?—

A. 1: The tubes you have on hand are quite suitable, therefore use them. Regarding your second query, it seems that the reaction coil is reversed.

R.H. (Bathurst, Queensland).—

Q. 1: Would you kindly send me or publish a receipt and full details of a five-valve Reflex receiver.

A. 1: Frankly, I would rather not, as I fail to see the advantages you may gain. Why not build a Neutrolyne, which is perhaps best of all five valve receivers?

S.H. (Pekah Main).—

Q. 2: Would you let me know how to test fixed grid leaks?—

A. 1: The only method of doing this is to means of a megger.

M.M.A. (Kurri Kurri).—

Q. 1: How can I test the "B" battery voltage of my four valves?—

A. 1: Connect a voltmeter across the battery (type).

E.V.M. (Belldale).—

Q. 1: I am desirous of building the Neutrolyne described in the October 22nd issue of your paper, but should like to have six valves instead of five, as in the valve frame aerial described in a previous issue. What alterations to the described circuit would these additions entail?—

A. 1: The Neutrolyne as published was perfectly suitable for frame aerial reception. Dispense with the first neutroformer altogether and substitute the loop in its place, taking one side of the loop to the grid of the first valve and the other side to the filament minus, turning the loop with the condenser.

G. I. B. (Southport, Q.I.).—

Q. 1: I have constructed the Harkness Reflex, but as I had two 0003 Icaride condenser coils, instead of the 00035 specified in the article. Such being the case, I altered the windings of the transformers to 10 turns primary, and 60 turns secondary for the aerial coupling coils, and 15 turns primary and 75 turns secondary for the R.F. transformer. Hand capacity is very bad, and the set also squeals badly, thus making tuning very keen, but when once tuned correctly the tone is clear. I am using Tru Blue valves, RI audio transformers and RI fixed crystal detector. Are my alterations quite in order?—

A. 1: No. By all means use the Icaride condensers, but stick to the original specification for the coils. Overcome the hand capacity by connecting the fixed plates of your condensers to the grids of the valves. This is a golden rule, to be remembered at all times. I have not had any experience with the RI fixed crystal detector, but I know that a different spot on the Harlie detector made a vast difference in the reception, hence my warning for this detector. Test the audio transformers for continuity.

D. R. J. (Moama).—

Q. 1: Would the "B" battery described a few weeks ago be a too powerful battery for a one 70 tube set?—

A. 1: No, certainly not. This "B" battery would be entirely suited to your requirements.

Q. 2: Can you tell me the make of valve used in the Extracurrent Valve?—

A. 1: Yes; Casuar Point One.

Q. 3: Will a vernier 0005 condenser be correct in this set?—

A. 1: "Radio" (Richmond River).—

Q. 1: Would you give me the details of a regenerative aerial suitable for a Super-heterodyne?—

A. 1: Wind 18 turns of Mars aerial wire on a four-foot loop. Tap at the seventh.

L. M. (Mortlake).—

Q. 1: Will you kindly inform me if there are any turns of wire required inside a ball aerial?

A. 1: No. I shall shortly publish my tests of the ball aerial. I wish to verify them by consulting someone else.

F. McC. (Peterborough). There is no modification necessary and both valves mentioned will be satisfactory.

G. H. (Merriwell). The addition of another audio valve to your receiver gives you the ST.100. Build it.

J. H. W. (Enmore). See the next issue of "Radio."

Vesper (Croydon). I would not advise you to do this.

K. C. S. (Ryde). I can't see your object in this.

A. W. P. (Wie Waa). I am indeed pleased to hear of your wonderful results. It seems extraordinary that you are able to receive the stations you mention on a crystal set, considering particularly that Melbourne is approximately 1,000 miles away. Congratulations!

G. M. P. (Fawkner). The particulars you forward are too meagre.

R. P. (Hurstville). Get in touch with Economic Radio Stores, Sydney.

E. M. I. (Toowomba, Q.). There are two methods. One is to loosely couple your aerial, and the other is to build the Brown-Indra. I would advise you to adopt the latter course.

A. H. R. (Newry). Either earth is satisfactory. Do not worry about the directional qualities of your aerial.

G. A. (Bondi). This would mean an altogether different circuit and really calls for a special article.

Anxious (Woolloongabba). Let me know the details of your wave-trap, and I will be able to reply to you properly.

H. E. S. (Gordon). See "Wireless Weekly," July, 1926.

W.J.G. (Adamstown). Q. 1: I am not quite clear what is meant by a three-quarter saturated solution of bicarbonate of soda for the certifier, described in "Wireless Weekly," 19th November, 1925, in conjunction with the accumulator "B" battery.

A. 1: A fully saturated solution is that which is reached when the water will not dissolve any more bicarbonate of soda. Keep adding the soda, stirring all the while, and when the water has absorbed its maximum quantity a sediment will be left at the bottom of the jar. Pour off the clear liquid, and throw away the sediment. To this clear liquid of electrolyte as it is now known, add a quarter of its volume. The reason for the three-quarter saturated solution is to allow for evaporation of water from the electrolyte which, if too strong, sets up excessive creeping.

W.P. (North Epping). Q. 1: Can I use two variable condensers in a two-valve circuit? If so, please give me a suitable circuit.

A. 1: In "Wireless Weekly," of October 15th, 1926, will be found two circuits suitable for your requirements, use the Harkness Reflex and two the Isovalve Reflector.

A. M. L. (Clonville).—

Q. 2: Would you kindly advise me whether the Handi Crystal Receiver of "W.W." November 12th, 1925, will eliminate EBL and tune in 2FC at Clonville?

A. 1: Yes. Watch the coupling.



# ANNOUNCING

## *The New Clyde Battery for Fords and other Light Cars*

For the *first time* in CLYDE history, CLYDE offers a special battery to FORD and light-car owners at the low price of £5-17-6. This is by no means the *first* battery of its kind to be placed on the market.

In the past CLYDE has preferred to retain the bigger and better batteries as its standard.

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For clear, steady volume; for even, uniform reception month in and month out; for more enjoyable, less costly radio reception—demand CLYDE BATTERIES.

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**MAIN SERVICE STATION ——— 106-110 GOULBURN STREET, SYDNEY**

T. M. (Brisbane):—

Q: Will you please enlighten me on the following questions, re the Reifler two-year of "Wireless Weekly": 15/10/26: (1) Will 1/4 inch diameter tubing require any alteration in the number of turns of the different coils?

A: 1/4 inch tubing is quite suitable without altering the turns in any way.

Q: 2: In the experimental set how many turns were wound on the reaction coil?

A: 25 turns to begin with, finally being reduced to 18 turns. Determine this for yourself.

Q: 3: What length of aerial over all would you suggest?

A: Would suggest you use 70 feet over all.

Q: 4: Is a report I received that this receiver is heavy on valves correct?

A: The report is incorrect. I cannot see why it should be heavier on valves than any other receiver. Can you yourself?

H. W. B. (Normanburst):—

Q: 1: I intend erecting my aerial about (parallel to the electric light lead in at a distance of 30 feet). Will I suffer from interference?

A: You should not if the lead in is for a private dwelling. Still, keep your aerial higher than the electric wires.

Q: 2: How long would an Exide accumulator 4 volts, 16 ampere hours actual, run without recharging on a two-valve dull-emitter set used two hours per night?

A: If your dull emitter valves consume .85 of an ampere each, two hours consumption would therefore be approximately a quarter of an amp. The accumulator would therefore last approximately 25 hours without recharging.

J. M. H. (Brisbane):—

Q: I am hopeless of building a three-valve receiver to tune out 440 and bring in the Sydney station. Will you please recommend a circuit?

A: In "Wireless Weekly" of the 24th instant will be a receiver to suit your requirements. Many thanks for the excellent report on the Extraordinary One Valve.

A. A. (Balforn):—

Q: Please inform me what make of valve and transformer were used in "Wireless Weekly" Receiver No. 47. Would a Jefferson 41 transformer be suitable?

A: Quite suitable. Any good make of valve functions properly. If used correctly.

M. Y. (Richmond River):—

Q: Will you please tell me the comparison between Pacific U.S. standard time and that of N.S.W.?

A: New South Wales is ahead by 19 hours.

R. S. (Leichhardt):—

Q: I have a three-valve "Armstrong Regenerative set. I find I can only get inter-station in winter and not in summer. Could you advise me how to get over this difficulty?

A: I am afraid I can't help you over this difficulty with your present set. Unfortunately, summer conditions are not conducive to good reception so in winter time.

A. E. T. (Katoomba):—

Q: Please tell me how to overcome the "bluntness" which I experience from station 2PCY.

A: Shunt a fixed condenser of .002 capacity across the output of the last transformer. The sockets would not have any effect. I cannot tell you which valve mentioned would give more volume, as it depends upon the individual valve to a very great extent.

J. H. B. (Terahia):—

Q: What connections would I make in putting a Carborundum fixed detector on a crystal set in "Wireless Weekly" 8/16/24?

A: There are only two connections for the Carborundum fixed detector, and they are shown on the diagram of the set.

Q: 2: What valve and socket would you advise me to get for the Extraordinary One Valve Receiver?

A: I can't advise you any specific valve or socket. You yourself have to decide this

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Acoustics is the science of sound. Radio acoustics is the science of transforming the electrical impulse into a audible sound. The electrical impulse is a jolly little fellow who needs to be consulted if you are to get the best out of him. We've been making friends with him for seventeen years and the *Table-Talker* is but one result of our efforts. The goose-neck horn means clearer and more rounded tones, and the patent material of which it is constructed eliminates any suggestion of harshness or metallic resonance. Fitted with an adjustable diaphragm, it is finished in a pleasant shade of neutral brown. Height 18", bell 10".

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**£9/15/-**  
each,  
complete.



Let your next Valve be a PHILIPS



# PHILIPS

LAMPS AND RADIO



question. All modern valves are very good and provided you get one of a well known make good results should accrue. The rheostat is governed by the valve used. Ask your dealer, who will be able to advise you better than I can.

W. D. (Beza):—

Q: I wish to try out Conover valves. Will the rod top be right for radio frequency and the plain tops for other three?

A: Yes, but the Stentor Two is the last audio stage will be found worth while. I have forwarded your letter to a radio dealer for a reply. Many thanks for your gracious remarks. We sincerely hope to earn more.

G. J. J. (Waldenmarch):—

Q: Please inform me the range of wavelengths of the Bayer Four Valver, and tell me if it is absolutely selective.

A: The wavelength range of the Bayer is 200 to 350 metres with .0003 condenser, and as mentioned in the article it proved extremely selective at Marrickville. It is not possible for me to draw comparisons on the different receivers, as after all this is a matter of opinion in which so many people vary. Many thanks for your Christmas greetings and good wishes.

G. E. W. (Gladmanar):—

Q: My four valve receiver produces a very shrill whistle using all four valves, but this is not the case when I plug into the third valve. Can you explain this? I might add that I am using three stages of audio frequency amplification.

A: Three stages of audio frequency amplification are not advisable at any time. Two of the best being all that is required. A very shrill whistle must be heard when three stages are used, so after your receiver into a four-valve employing one stage of radio frequency.

A. D. (Solney):—

I have a three-valve set using a P.I. circuit, two stages of audio and one stage of radio, and cannot receive interstate stations. Why is this?

A: The receiver you have described is not at all selective. Build the Browning-Drake "Radio" (Ipwch):—

Q: I intend to wind my own autotransformers and would like to know how many turns of wire would be required to cover the broadcasting wave band?

A: Wind your three autotransformers with a 45 turn secondary, tapped at the fifteenth from the bottom, on a 3 inch former. The primary consisting of 5 to 8 turns should fit inside the secondary at the low potential end, that is, the filament end.

BRIEF REPLIES:—

W. H. P. (Nambour): Many thanks for your good wishes. The copy of "Wireless Weekly" you desire has been forwarded.

W. L. (Campbelltown): It appears to me that your layout does not correspond with the "Wireless Weekly" layout. The cause of your trouble is either interaction or a faulty detector.

A. W. E. (Sutton): Stick to your honeycomb coils.

J. H. M. (Parramatta): The Browning-Drake receiver is the best one for your requirements.

G. S. (Concord): Interview Messrs. Slingby and Colow, 482 Pitt Street, Sydney.

C. R. (Brisbane): Use the Harle detector and overcome this trouble. There are some spots which will not respond at all, and it may happen that your fixed detector is on this spot.

H. J. M. (Uthob): Q: Connect the G terminal of your autotransformer to the G terminal of your valve socket and the filament minus to its respective position. Follow the markings of the manufacturer of your own kit.

W. W. Reader (Doo Why): Your reception is certainly very good, and we are glad to hear of it. Keep on keeping on.

J. H. (Vaucluse): My best advice to you is to build the autodyne straight out. This receiver is capable of consistent interstate reception night after night.

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Filament 5 volts  
.25 amp.  
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Plate Voltages, Amplifier, 60-150 volts.

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Both Types fit Standard American Socket.

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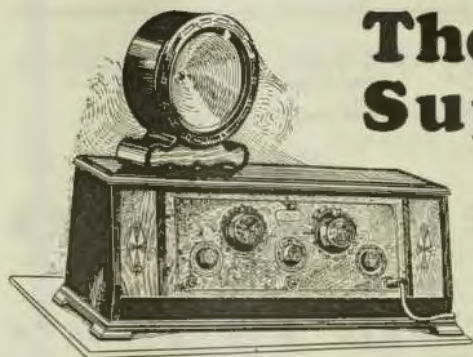
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**THE COMPLETE SET INCLUDES** — Latest Magnavox Cone Speaker  
Clyde Guaranteed Accumulator 6 201A Valves (Radiotron)  
3 Large Capacity Winchester B Batteries Aerial Equipment.  
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#### 3 Salient Points of the "Eclipse"

1. The latest method of amplification used ensures the most wonderful tonal quality, as well as a maximum of volume.
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The 'phones that ensure you perfect reproduction in speech, song or music. Regular Price 25/-

Special Price ..... 15/-

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And at BRISBANE

# Receiving Sets We Have Tested

*The 1927 Gilfillan Neutrodyne illustrated on this page is reviewed by our technical department this week. Under this heading we shall discuss the merits of a different commercially built receiver each week for the benefit of our readers.*

**T**HE first impression that one gets when the 1927 Gilfillan Neutrodyne is opened, is its handsome, neat appearance. The cabinet work is of toned walnut, the sloping panel being of a similar material. Pleasing looking carvings stand out in relief on the cabinet and the fittings lend a charming effect.

An outstanding feature is the lack of the usual multiplicity of controls on the panel. Two Vernier controls with an indicating window between, are for tuning this excellent receiver. Below is a knob which acts as a volume control filament switch combined, and it certainly lives up to its name.

No jacks are anywhere to be found. At the back of the cabinet are ten different coloured flexible cords attached to each one being a tag indicating its particular purpose. No mistake is, therefore, possible when connecting the different batteries and aerial and earth. Altogether the receiver points the way of all modern receivers, simplicity with efficiency being the keynote.

The valves were inserted in their respective sockets, and the batteries were connected. The loud speaker was connected to the sockets for the purpose, and we proceeded to tune-in. It seemed somewhat eerie to be turning only two knobs still to be whisking from 2KY to 3AR, including all the Interstate stations between. The volume in each case was extraordinarily good, and purity of speech and music was present at the time. Each and every station was heard clearly and sweetly, entirely on its own, no sign of any interference from an-

other station being present at any time. The first aerial used was one of 75 feet in length overall. As provision is made for a short or long aerial, we hooked on an aerial of 30 feet in length and again we heard all the Interstate stations one after the other. Local stations did not require an aerial at all, even 2UE's excellent programmes punching the speaker satisfactorily. The test was carried out at Marrickville, five miles from 2BL and fifteen miles from 2FC. The following is a copy of the log, showing the dial readings with the long aerial.

Station	Metres
2KY (Trades Hall, wavelength 280 metres) . . . . .	33.29
2GB (Theosophical Station, wavelength 316 metres) . . . . .	39.26
2BL (Broadcasters, wavelength 353 metres) . . . . .	47.45
3LO (Melbourne, wavelength 371 metres) . . . . .	50.47
4QG (Brisbane, wavelength 385 metres) . . . . .	55.52
5CL (Adelaide, wavelength 395 metres) . . . . .	58.55
1YA (Auckland, N.Z., wavelength 420 metres) . . . . .	62.59
2FC (Farmer's wavelength, 442 metres) . . . . .	66.64

3AR (Melbourne, wavelength 484 metres) . . . . . 77.75

Not a squeal, or a howl, or an oscillation in the whole bunch. Neutralized it certainly is. This list we have entered in the Book of Instructions accompanying the receiver, and we publish it here as a guide to future owners of this Gilfillan. Not that we for a moment suggest any difficulty in tuning, rather is the tuning of this receiver the acme of simplicity itself—even a child would tune-in quite well.

We have no hesitation in recommending this 1927 Gilfillan Neutrodyne to those insisting on good, clear reception from all stations. It will fulfil this duty well, with a minimum of trouble.

Messrs. Harringtons Ltd. forwarded us the receiver just described.

GREAT EXCITEMENT is being felt in the juvenile circles of Melbourne for 3LO are giving a perfectly splendid children's party on the 11th of December. Some delightful surprises have been arranged—it would spoil the fun if you knew anything about them beforehand—even the least little hint—and a very merry time is promised.



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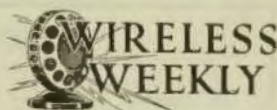
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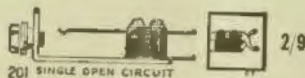


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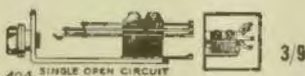
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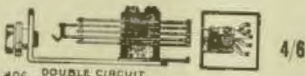
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